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Examining the Inner Experience of Three Individuals with Major Depressive Disorder and Three Individuals with Bipolar Disorder

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EXAMINING THE INNER EXPERIENCE OF THREE INDIVIDUALS WITH
MAJOR DEPRESSIVE DISORDER AND THREE INDIVIDUALS
WITH BIPOLAR DISORDER

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ABSTRACT

Examining the Inner Experience of Three Individuals with Major Depressive Disorder and Three Individuals with Bipolar Disorder

By

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The diagnostic criteria for major depressive disorder (MDD) and bipolar disorder (BD) provide a description of expected experiences of individuals diagnosed with those disorders (e.g., sadness, expansive mood, difficulty concentrating). However, much remains unknown about the inner experience of individuals with these disorders which may prove crucial in understanding and treating these disorders. The present study examined the inner experience of three individuals with MDD and three individuals with BD using the *Descriptive Experience Sampling* (DES) method (Hurlburt 1990, 1993, 2011). Results were not suggestive of any clear, consistent patterns of inner experience either within the MDD or BD groups or across the two groups of mood disordered individuals. However, five out of six participants had difficulties with capturing and

conveying their inner experience and seemed to have a deficit of clear experiences, particularly thinking and feelings. Our participants had few clear inner seeings, feelings, unsymbolized thinking, and almost no inner speaking. One participant seemed distinctly different from the other participants in that he had inner seeing in 100% of his sampled moments that were complex and very detailed, though aspects of these inner seeings were not fully integrated.

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CHAPTER 1

INTRODUCTION

Major depressive disorder (MDD) and Bipolar Disorder (BD) are debilitating conditions associated with diminished interpersonal relationships, impairment in occupational and academic functioning, and overall decreases in psychological well-being. MDD is the leading cause of disability in the United States for individuals aged 15 to 44 (Young, Ryan, Weinberger, & Beck, 2008) and has been estimated to be one of the most common forms of mental disorder (Eaton, Kalaydjian, Scharfstein, Mezuk, & Ding, 2007). Similarly, BD is frequently associated with substantial functional limitations. For example, it is estimated that less than half of individuals with BD work full-time and of those who work full-time, their BD was associated with 65.5 lost workdays annually (Kessler et al., 2006; Suppes et al., 2001). Both MDD and BD are associated with significant economic burden including with direct medical expenditures, suicide-related mortality, and workplace costs (Greenberg et al., 2003; Kessler et al., 2006). It was projected that salary-equivalent lost productivity per year associated with MDD and BD was over \$15 billion (Kessler et al., 2006).

The prevalence rate of MDD ranges from 1 – 5% for men and 6 - 11% for women (Lehtinen & Joukamaa, 1994). However, the incidence of depressive symptoms is significantly higher, ranging from 18 - 34% in women and 10 - 19% in men (Lehtinen & Joukamaa, 1994). It has been recognized that the overall occurrence of MDD has increased from approximately 3% to 7% from 1991 to 2001 (Compton, Conway, Stinson, & Grant, 2006). Although it is not clear precisely what has caused the increasing occurrence of MDD, factors such as increasing urbanization, modifications in family

structures, increased exposure to toxic substances, increased life expectancy, and increased access to mental health treatment have been identified as possible causes (Loue & Sajatovic, 2008).

BD is not as prevalent as MDD. BD prevalence rates range from 0.4% to 1.6% (APA, 2000) and about 2.6% in the United States (APA, 2000; Kessler, Chiu, Demler, & Walters, 2005; Robins & Regier, 1992). However, BD is often misdiagnosed as MDD and subsequently the prevalence rates for BD may actually be higher than previously stated (Angst et al., 2011).

The standard age of onset for MDD is mid-20s and for BD is 20-years old (APA, 2000). With both disorders, those individuals who experience a single episode of depression or mania are likely to experience repeated episodes throughout their lifespan (Coyne, Pepper, & Flynn, 1999). In addition, the risk and severity of recurrent episodes increases with each subsequent episode and with early onset (Adams & Sutker, 2004; Solomon et al., 2000; Yatham, Kaurer-Sant'Anaa, Bond, Lam, & Torres, 2009). It is estimated that 5 - 10% of individuals who have experienced a single episode of depression will go on to develop BD (APA, 2000). Both MDD and BD are commonly associated with co-morbid substance-related disorders, anxiety, and personality disorders (APA, 2000; Brown, Suppes, Adinoff, & Thomas, 2001; Uecok, Karaveli, Dundakci, & Yazici, 1998).

A significant concern regarding the presence of MDD and BD is the increased risk of suicide. Individuals with MDD and BD often are preoccupied with thoughts of death, including suicidal ideation, and often engage in suicide attempts. Overall, it is estimated that 15% of individuals diagnosed with MDD complete suicide and 10-15% of

individuals diagnosed with BD will commit suicide (APA, 2000; Novick, Swartz, & Frank, 2010). Elderly individuals account for almost 16% of all suicides with firearms being the most common means (Xu, Kochanek, Murphy, & Tejada, 2010).

Given MDD and BD's complex clinical presentation and etiology, in addition to a current emphasis on awareness, recognition, and treatment of such disorders, it is imperative to have a clear understanding of the inner experiences of individuals with these disorders. The present study will use the Descriptive Experience Sampling (DES) method developed by Hurlburt (1990, 1993) to examine the inner experiences of three individuals with MDD and three individuals with BD.

DES is an introspective, descriptive, and idiographic method aimed at exploring and describing inner experience. DES is a bottom-up technique that involves faithfully describing a single experience and working up to portraying the inner experience of a single person based upon the conglomeration of multiple single experiences (Hurlburt & Akhter, 2006). Participants are given a device that randomly emits a beep through an earphone. Participants are asked to choose a time during the day to turn on the beeper and carry it with them throughout their regular activities. Once turned on, the beeper randomly emits a beep approximately every thirty minutes. At the moment of each beep, participants are asked to "freeze" and remember or take notice of their inner experience at the last undisturbed moment before the beep sounded. Inner experience refers to anything within a participant's awareness, including but not limited to thoughts, feelings, sensations, images, etc. Participants are asked to jot down notes about their inner experience in a small notebook, reset the beeper, and continue on with their daily

activities. This procedure is typically repeated until the participant has received six beeps, which usually takes approximately three hours.

Within 24 hours of collecting the moments of experience, an interview takes place between the investigator and the participant in which they discuss each moment of sampled inner experience. The goal of this interview is to develop as faithful an apprehension of each sampled moment of inner experience as possible. DES is an iterative procedure (Hurlburt & Akhter, 2006). Most participants are not skilled observers of their inner experiences. During the first day of sampling, participants usually are unprepared for the investigator's direct and specific questioning about their moments of inner experiences. Thus, DES researchers usually consider the first day of sampling a practice session and do not include the first day of sampled moments in data analyses (Hurlburt & Heavey, 2006). Usually, participants engage in three to eight days of sampling yielding between 18 and 48 beeps.

DES studies vary greatly in the types of participants sampled and participants' experiences. Some DES studies explore one participant's inner experiences. In these studies, the DES method is used for idiographic purposes, aimed to describe the unique characteristics of a unique individual (Hurlburt & Akhter, 2006). Other DES studies explore a collection of participants who have a feature in common, such as a psychiatric diagnosis (e.g., schizophrenia, depression, Asperger's syndrome, etc.). In such studies, the investigator first apprehends each participant's experiences idiographically and then nomothetically examines if any salient characteristics emerge across the collection of participants as a whole (Hurlburt & Akhter, 2006).

The present study used DES to explore the inner experience of a collection of participants with MDD and BD. The purpose of this study was to observe and describe the inner experience of the sample of individuals and to examine if any salient characteristics or themes emerge across the participants diagnosed with MDD, the participants diagnosed with BD, or the collection of participants as a whole.

CHAPTER 2

MAJOR DEPRESSIVE DISORDER

Diagnostic Features

According to the American Psychiatric Association (2000), a diagnosis of major depressive disorder (MDD) is warranted when a person experiences for at least 2-weeks depressed mood or a loss of interest or pleasure in most activities and exhibits evidence of four out of seven additional symptoms (e.g., lack of energy, feelings of worthlessness). The experience of these symptoms must be associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.

One of the primary characteristics of MDD is depressed mood. The depressed mood is often described as being persistently present and is characterized by sadness, distress, pessimism, emptiness, hopelessness, and discouragement. For individuals with MDD, the depressed mood pervades most, if not all, aspects of one's personal life and interferes with one's social functioning. Furthermore, the depressed mood can feel like an unalterable affective state (Maj & Sartorius, 1999) or may be described as numbness or a lack of feelings (APA, 2000). Somatic symptoms, such as bodily aches or pains, are also commonly associated with the depressed mood. In fact, such somatic symptoms can make it difficult for elderly individuals to be diagnosed with MDD as physicians are likely to attribute somatic symptoms to physical health issues rather than depression (Ruppel, Jenkins, Griffin, & Kizer, 2010). Irritability, such as anger or exaggerated frustration, is also commonly associated with depressed mood (APA, 2000).

MDD is also often characterized by cognitive and perceptual symptoms. Individuals with MDD may experience difficulty concentrating, memory impairment, slowed thinking, and in some severe cases, hallucinations (APA, 2000). Feelings of worthlessness or guilt as well as thoughts of death or suicidal ideation are commonly experienced by individuals with MDD. The persistent feelings of guilt experienced by individuals with MDD can include misinterpreting day to day events reinforcing one's feelings of personal defects and inadequacies. Suicidal ideation is also commonly experienced in the MDD population, although the severity, intensity, and lethality of the ideation vary substantially. For example, one person may occasionally (e.g., a few times a month) experience thoughts of committing suicide, whereas another person may often (e.g., daily) experience thoughts of and may specify plans of how to commit suicide.

Behavioral changes are also observed in individuals with MDD. For example, individuals with MDD may experience psychomotor agitation, such as the inability to sit still, or psychomotor retardation, such as a slowed speech or body movements (APA, 2000). Such psychomotor changes are generally severe enough to be noticed by others. Appetite and sleep disturbances are also common for individuals with MDD (APA, 2000). In terms of appetite, some individuals report a diminished appetite while others report an increase in appetite and may crave specific foods (APA, 2000). Similarly, MDD can be associated with sleep disturbances such as insomnia. The most common form of insomnia for individuals with MDD is middle insomnia which is characterized by waking up in the middle of the night and experiencing difficulties returning to sleep (APA, 2000). Individuals with MDD can also experience reverse sleep disturbances where they experience hypersomnia, or prolonged sleep episodes.

There are five subtypes of MDD listed in the Diagnostic and Statistical Manual-IV (DSM-IV-TR, APA, 2000) including MDD with psychotic features, catatonic features, melancholic features, atypical features, and postpartum onset. MDD with psychotic features is associated with the presence of delusions, psychomotor disturbances, vegetative symptoms, or hallucinations (APA, 2000). The DSM-IV-TR distinguishes between mood-congruent psychotic features and mood-incongruent psychotic features (APA, 2000). Mood-congruent psychotic features are consistent with the typical depressive themes including personal inadequacies, death, nihilism, and guilt. In contrast, mood-incongruent psychotic features may focus on non-depressive themes. It is estimated that approximately 14% of individuals with MDD experience psychotic features (Johnson, Horwarth, & Weissman, 1991; Maj & Sartorius, 1999). Individuals with MDD who experience psychotic features are also more likely to experience an increase in weight loss, insomnia, psychomotor agitation, indecisiveness, and suicidality as compared to individuals with MDD who experience no psychotic features (Gaudiano, Young, Chelminski, & Zimmerman, 2008).

It is controversial whether MDD with psychotic features represent a distinct disorder or if it is a manifestation of MDD in its most severe form (Maj, Pirozzi, & DiCaprio, 1990). Forty and colleagues (2009) examined whether the severity of MDD is the sole cause of psychotic symptoms and found that individuals with predispositions to psychotic features are more likely to display psychotic features during severe episodes of depression. In contrast, individuals without a history of psychosis may experience non-psychotic depressive episodes which are at equal or greater severity to other individuals' psychotic episodes. Forty and colleagues (2009) concluded that there is individual

variation in the vulnerability to psychotic episodes during mood episodes and that the severity of the mood episode is not the single cause of the symptoms.

Another subtype of MDD includes catatonic features. MDD with catatonic features is characterized by a group of symptoms of motor behavior disturbances such as motoric immobility, excessive motor activity, extreme negativism or mutism, peculiarities of voluntary movement, or echolalia or echopraxia (APA, 2000). For example, individuals with MDD with catatonic features may experience rigid positioning of their body or may experience simple movements (e.g., getting out of a chair) as a painful act that may take hours to perform. Catatonic features are mostly prevalent in schizophrenia but have been demonstrated in affective disorders such as MDD and Bipolar Disorder (Carroll, 2001). In MDD, catatonic features are associated with increased severity of MDD symptoms, increased frequency of depressive episodes, more severe cognitive disturbances, and more severe deficits in daily functioning as compared to individuals with MDD without catatonic features (Starkstein, Petracca, Teson, & Chemerinski, 1996).

MDD with melancholic features refers to a subtype of depression in which there is a pronounced loss of interest or pleasure in usual activities or a lack of reactivity to pleasurable stimuli (APA, 2000). In addition, to warrant a specifier of melancholic features, one must also experience three of the following: distinct quality of depressed mood, worsening of mood in the morning, early morning awakening, psychomotor retardation or agitation, significant weight loss or anorexia, and excessive or inappropriate guilt (APA, 2000). Some have proposed that depression with melancholia has a distinct experiential quality different from non-melancholic individuals (Maj &

Sartorius, 1999). Proponents of such a distinction have demonstrated that melancholia is related to unique neurobiological processes and latency of rapid eye movement sleep which non-melancholia depression is not (Maj & Sartorius, 1999). Melancholia depression is also associated with deficits in memory and executive functioning (Withall, Harris, & Cummings, 2009; Michopoulos et al., 2008). One study also found that melancholic depression is associated with an increase in cognitive rumination (Nelson & Mazure, 1985). Despite the increased rates of depression in females as compared to men, more men than female tend to experience the clinical symptoms of melancholia (Khan et al., 2006). Melancholic features have also found to be associated with younger age, an increase in severity of depressive symptoms, and a decrease in the duration of the depressive episode (Grunebaum, Galfalvy, Oquendo, Burke, & Mann, 2004; Khan et al., 2006).

The subtype of atypical MDD is characterized by the presence of mood reactivity and two or more of the following: increased appetite or significant weight gain, hypersomnia, leaden paralysis (i.e., heavy feelings in arms or legs), and interpersonal rejection sensitivity not limited to episodes of mood disturbance (APA, 2000). It is estimated that approximately 5% of individuals with MDD experience the aforementioned atypical features (Angst, Gamma, Sellaro, Zhang, & Merikangas, 2002). Atypical features of depression are more common in females and are associated with a younger age of onset (Pae, Haresh, Marks, Masand, & Patkar, 2009). Furthermore, the course of atypical depression is usually more chronic and unrelenting as compared to non-atypical depression (Pae et al., 2009). Individuals with this subtype of MDD are

twice as likely to have comorbid anxiety, mood, eating, and substance-related disorders (Pae et al., 2009).

The final subtype of MDD is postpartum onset which is characterized by the experience of depressive symptoms within 4 weeks after childbirth. It has been estimated that between 8 and 20% of women after childbirth experience postpartum depression and approximately 34% of those women continue to experience depressive symptoms 1-year after childbirth (Uguz, Akman, Sahingoz, Kaya, & Kucur, 2009). Some characteristics of depression that are often exhibited in postpartum depression include motor retardation or agitation, difficulty concentrating, and fatigue (Krammerer et al., 2009).

Given the aforementioned diagnostic criteria, the variety of presentations or experiences of MDD is immense (Dobson & Dozois, 2008). For example, one person with MDD may experience depressed mood, fatigue, feelings of worthlessness, inappropriate guilt, and preoccupation with death, whereas another person may experience a completely different set of symptoms including depressed mood, significant weight loss, insomnia, psychomotor agitation, and difficulties concentration. With the heterogeneity of symptoms, these two individuals have the same diagnosis, but their experiences may be vastly different. Furthermore, two individuals could have the same “symptom” such as feelings of worthlessness, but their experiences can be markedly different. One possible implication of the heterogeneity of the symptoms of MDD is that there may actually be a few distinct subtypes of depression included within the diagnostic criteria (Dobson & Dozois, 2008). In addition, the heterogeneity of the symptoms of MDD may increase the difficulty in reaching agreement in diagnosis and may further

affect the research and conceptualization of the disorder and subsequently treatment (Dobson & Dozois, 2008).

Prevalence and Course

The prevalence rates of MDD range from 1 – 5% for men and 6 – 11% for woman (Lehtinen & Joukamaa, 1994). A meta-analysis of prevalence rates of mood disorders found large discrepancies in the prevalence of MDD ranging from 0.88 per 100 individuals in Taipei to 29.6 per 100 individuals in Montreal (Waraich, Goldner, Somers, & Hsu, 2004). Cross-culturally, studies conducted in Europe generally report 1-year prevalence rates 3 times higher than studies conducted outside of Europe (Waraich et al., 2004). In contrast, when studies conducted in Asia were pooled together, they exhibited 1-year and lifetime prevalence rates 7 times lower as compared to studies conducted in non-Asian countries (Waraich et al., 2004). Consistently across cultures, women were found to have prevalence rates of MDD 1.5 to 2 times higher than men (Waraich et al., 2004).

A survey of the prevalence of depression by ethnicity conducted between 1988 and 1994 by the National Center for Health Statistics demonstrated that African-American and Mexican-American individuals have higher lifetime prevalence rates of dysthymic disorder, whereas Euro-Americans individuals have higher lifetime prevalence rates of MDD (Riolo, Nguyen, Greden, & King, 2005). Dysthymic disorder refers to a mood disorder similar to MDD with regards to the persistent presence of depressed mood, but the depressed mood is present for a longer duration (i.e., at least 2 years) with no more than moderate intensity (APA, 2000). Differences in the course of MDD were also noted for the three ethnicities. Mexican-American and Euro-American individuals

exhibited significantly earlier onset of MDD as compared to African-Americans. In terms of risk factors, individuals living in poverty had 1.5 times the prevalence of MDD; however, poverty was only significantly associated with the prevalence of MDD for Euro-American individuals. Lack of education was demonstrated to be significantly associated with the prevalence of MDD for Mexican-American individuals.

One study examined the effect of global events, specifically the 2008 global economic downturn, on prevalence rates of MDD (Wang, Smailes, Sareen, Fick, Schmitz, & Patten, 2010). It was found that prevalence rates for MDD increased from 6.5% to 7.6% for a sample of Canadian workers. Notably, significant increases in MDD were found for men who were married or in a common-law relationship.

Onset of MDD usually occurs in the mid-20s, although it may begin at any age (APA, 2000). It has been shown that the age of onset of MDD is decreasing for individuals born more recently as compared with older cohorts (APA, 2000). It is also more common for women than men to experience an early age of onset, recurrent course, and greater severity of MDD (Verhagen et al., 2008). The course of MDD is variable. Some individuals have a single episode of depression, whereas others have multiple, frequent episodes (APA, 2000). It is estimated that approximately 60% of individuals who experience a single episode will go on to experience additional episodes of depression (APA, 2000). Furthermore, MDD may be preceded by dysthymic disorder in approximately 15 – 25% of clinical samples (APA, 2000). Dysthymic disorder is similar to MDD as they share similar symptoms; however, dysthymic disorder differs from MDD in terms of severity, chronicity, and persistence. Dysthymic disorder is characterized by the presence of depressive symptoms for more days than not for a period of 2-years

(APA, 2000). However, it is noted that it is often difficult to differentiate MDD from dysthymic disorder as it can be challenging to retrospectively record the onset, duration, and persistence of the symptoms of depression.

Comorbidity

Cormorbidity is common with MDD with approximately two-thirds of individuals with MDD having at least one additional axis I disorder (Bijl, van Zessen, & Ravelli, 1997). It has been shown that women with MDD exhibit more comorbid mental illness than men (Verhagen et al., 2008). Furthermore, out-patient studies have shown that the specificity of cormorbid disorders seen with MDD is gender specific (Fava et al., 1996; Carter, Joyce, Mulder, Luty, & Sullivan, 1999). For example, common comorbid disorders for women with MDD include simple phobias and bulima nervosa (Fava et al., 1996; Carter et al., 1999). Common comorbid disorders seen in men with MDD include substance abuse and dependence (Fava et al., 1996; Carter et al., 1999). Verhagen and colleagues (2008) also found that women were more likely than men to have comorbid panic disorder, simple phobias, generalized anxiety disorder, and agoraphobia.

Functional Limitations

To warrant a diagnosis of MDD, an individual's depressive symptoms must be associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning (APA, 2000). The chronicity and severity of MDD is associated with a significant financial burden on individuals with depression, families and caregivers, and employers. Current projections estimate that the economic burden associated with MDD will rank second among other mental illnesses and medical disorders by 2020 (Murray & Lopez, 1996). While psychotherapy, pharmacotherapy,

and electroconvulsive therapy (ECT) have been found to ameliorate depressive symptoms, only a small portion of individuals with MDD receive sufficient treatment (Wells et al., 1989).

Individuals with MDD often have significantly more functional impairment and require additional health care resources than individuals who are not depressed (Mechanic, Cleary, & Greenley, 1982; Shapiro et al., 1984; Simon, Von Korff, & Barlow, 1995). Epidemiological studies have demonstrated that occupational impairments such as lost productivity and absenteeism occur frequently within the MDD population (Johnson, Weissman, & Klerman, 1992; Kessler & Frank, 1997). Individuals with MDD average 2 - 4 disability day per month (Spitzer et al., 1995).

In terms of the costs related to MDD, there are both direct and indirect medical costs. Direct medical costs refer to costs directly related to the disorder itself (e.g., money spent on treatment). Indirect costs include interference caused by MDD on productivity, absenteeism, and increased mortality. One study estimated that the indirect costs associated with MDD is greater than indirect costs associated with other chronic conditions such as diabetes, back pain, and high blood pressure (O'Neill & Bertollo, 1998). It was estimated that the costs associated with diminished occupational productivity in the United States to be approximately \$23.8 billion and the costs associated with depression-related suicide to be approximately \$7.5 billion (Greenberg, Stiglin, Finkelstein, & Berndt, 1993).

Another study compared health care costs for individuals with anxiety and depressive disorders to individuals without anxiety or depressive disorders (Simon et al., 1995). They found that individuals with anxiety or depression had statistically significant

higher 6-month health care costs as compared to individuals with no anxiety or depression. Health care costs of MDD are also positively correlated with symptom severity (Wells et al., 1989; Hu & Rush, 1995).

MDD is also associated with social or interpersonal functional impairments. Individuals with MDD often report moderate to severe impairment in their functioning in relationships, in social settings, at home, and at work (Kessler et al., 2003). They also exhibit diminished frequency of sexual activity, interpersonal relationships, and participation in recreational activities (Coryell, Scheftner, Keller, Endicott, Maser, & Klerman, 1993). They also tend to have never been married and have lower levels of education (Coryell et al., 1993). The degree of functional impairment for individuals with MDD increases with the severity of depressive symptoms (Huang, Chung, Kroenke, & Spitzer, 2006).

CHAPTER 3

BIPOLAR DISORDER

Diagnostic Features

The American Psychological Association (2000) separates BD into two distinct types: bipolar I disorder and bipolar II disorder.

Bipolar I Disorder

A diagnosis of bipolar I disorder is warranted when a person experiences one or more manic episodes (APA, 2000). A manic episode is characterized by a period of time during which an abnormally and persistently elevated, expansive, or irritable mood is present for at least one week. The mood may be present for a shorter duration than one week if hospitalization is required. Three out of seven additional symptoms (e.g., inflated self-esteem or grandiosity, decreased need for sleep, flight of ideas, distractibility) must also be present. However, at least four out of the seven additional symptoms must be present if the mood disturbance is irritable (not elevated or expansive). To meet diagnostic criteria, criteria for a mixed episode, characterized by the presence of symptoms of both a manic episode and a major depressive episode, cannot be met. A significant impairment in social or occupational functioning, hospitalization, or the presence of psychotic features must also be present to warrant a diagnosis.

One of the primary characteristics of bipolar I disorder is an elevated mood. The mood is usually described as euphoric, good, cheerful or high (APA, 2000). Unceasing enthusiasm for interpersonal, sexual, or occupational interactions is also commonly experienced (APA, 2000). Emotional lability also frequently occurs with individuals

experiencing a manic episode (APA, 2000). Overall, irritability is the most common mood during a manic episode (Adams & Sutker, 2004).

Many individuals experiencing a manic episode will also present with an inflated self-esteem which may reach delusional proportions (APA, 2000). Such individuals may give advice on matters about which they have no knowledge or experience or believe themselves to possess a particular talent or experience. African Americans and Latinos may exhibit increased grandiosity and self-esteem in manic episodes more often than Caucasians (Perron, Fries, Kilbourne, Vaughn, & Bauer, 2010). Grandiose delusions are also common with a manic episode (APA, 2000).

Behavioral changes are also observed in individuals experiencing a manic episode. For example, one may experience a decreased need for sleep (APA, 2000). In fact, approximately 81% of individuals experiencing a manic episode experience insomnia or a decreased need for sleep (Adams & Sutker, 2004). Similarly, an increase in goal-directed activity also commonly occurs within a manic episode (APA, 2000). For example, such individuals may suddenly take up multiple new hobbies. Such behaviors may appear disorganized or bizarre in nature (e.g., beginning to write a book about something which they have no experience). Individuals may also appear to be more social than usual, but do not adhere to typical standards of social engagement and may appear to be intrusive, domineering, and demanding in their social interactions (APA, 2000). Lastly, individuals experiencing a manic episode commonly display speech disturbances often characterized by pressured, loud, rapid, and difficult to interrupt speech (APA, 2000). Speech disturbances exhibited can also appear theatrical or angry in nature depending on the nature of the mood episode (APA, 2000). Approximately 75

to 100% of individuals experiencing a manic episode demonstrate speech disturbances (Adams & Sutker, 2004).

Cognitive disturbances are also commonly experienced with a manic episode. Individuals often complain racing thoughts and flight of ideas (APA, 2000). Confusion, poor concentration, distractibility, and disorientation are also commonly experienced (APA, 2000). Often, individuals report that they are unable to filter irrelevant thought processes regarding external stimuli from relevant thought processes.

Neuropsychological testing has also evidenced cognitive deficiencies, including diminished processing speed, memory, verbal fluency, and executive functioning abilities, in individuals with bipolar I disorder (Xu, Lin, Rao, Dang, Ouyang, Guo, et al., 2012).

Psychotic symptoms of delusions and hallucinations also can occur within a manic episode (APA, 2000). Delusions have been reported by approximately 44 to 75% of individuals with a history of manic episodes (Adams & Sutker, 2004). Hallucinations, mostly auditory, have been reported by approximately 14 to 40% of individuals with a history of manic episodes (Adams & Sutker, 2000).

Bipolar II Disorder

A diagnosis of bipolar II disorder is warranted when a person experiences one or more major depressive episodes and at least one hypomanic episode (APA, 2000). As described previously, a major depressive episode is characterized by a two-week period in which at least five of the following symptoms are present and marked by a change in previous functioning: depressed mood, loss of interest or pleasure, sleep disturbance, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness,

inappropriate guilt, diminished ability to think or concentrate, indecisiveness, recurrent thoughts of death, or suicidal ideation. To meet criteria for a hypomanic episode, a person must experience a distinct period of elevated, expansive, or irritable mood lasting at least four days. Three or more of the following symptoms must be simultaneously present with the mood disturbance: inflated self-esteem or grandiosity, decreased need for sleep, talkative or pressured speech, flight of ideas or racing thoughts, distractibility, increased goal-directed behavior or psychomotor agitation, and excessive involvement in pleasurable activities that have a potential for painful consequences. Four of the aforementioned symptoms must be present if the mood disturbance is best characterized as irritable. To meet criteria for a hypomanic episode, there must be collateral reports of changes in the person's mood and behavior; however, the symptoms are not severe enough to cause marked impairment in social or occupational functioning or require hospitalization.

The mood disturbance characterized in a hypomanic episode is generally described as euphoric, unusually good, cheerful, or high (APA, 2000). The mood may even have an infectious quality for those around the person experiencing the hypomanic episode; however, the change in mood is distinct from the person's usual self. The elevated mood is often accompanied with enthusiasm for interpersonal or occupational interactions. Less frequently, the mood disturbance may be best characterized by irritability or may fluctuate between euphoria and irritability.

Behaviorally, individuals experiencing a hypomanic episode will likely have a decreased need for sleep and awake before the usual time with increased energy (APA, 2000). They will also speak somewhat louder and more rapidly than usual, but can be

interrupted unlike a person experiencing a manic episode. Individuals experiencing a hypomanic episode may be very distractible, as demonstrated by frequent changes in speech or activity, due to responding to various irrelevant external stimuli. Individuals may also have an increased interest in engaging interpersonally with others and there may be an increase in sexual activity. Impulsive activities such as buying sprees, reckless driving, or foolish business investments, are also frequently observed in individuals experiencing a hypomanic episode. The aforementioned behaviors generally mark a significant change in activities for the person experiencing the hypomanic episode; however, such behaviors do not result in the level of impairment that is characterized by a manic episode.

Prevalence and Course

The prevalence of BD in community samples has varied from 0.4% to 1.6% (APA, 2000) and about 2.6% in the United States (APA, 2000; Kessler, et al., 2005; Robins & Regier, 1991;). One study that surveyed 11 countries in Americas, Europe, and Asia found that lifetime prevalence for bipolar I disorder is 0.6% and for bipolar II disorder 0.4% (Merikangas, Jin, He, Kessler, Lee, Sampson, et al., 2011). BD is often misdiagnosed as MDD and subsequently, the prevalence rates for BD may actually be higher than previously stated (Angst, Azorin, Bowden, Perugi, Vieta, Gamma, & Young, 2011). Approximately 10% - 15% of adolescents experiencing recurrent major depressive episodes will go on to develop BD (APA, 2000).

Unlike MDD, the female-to-male ratio for BD is less clear. Some studies have demonstrated a ratio of 1:1, while others have demonstrated a ratio as much as 2:1 (Adams & Sutker, 2004). Gender differences with regards to symptoms and course have

been demonstrated. For example, females with BD are more likely to experience a depressive onset, psychotic symptoms, and comorbid axis II disorders as compared to males (Nivoli, Pacchiarotti, Rosa, Popovic, Murru, Valenti, et al., 2011). Females are also more likely to experience more major depressive episodes than manic episodes (APA, 2000). Females have an increased risk of developing subsequent episodes in the immediate postpartum period and some females experience their first episode during the postpartum period (APA, 2000). Males with BD are more likely to experience a manic onset, suffer from comorbid substance use disorders, and have more violent suicide attempts as compared to females (APA, 2000; Nivoli et al., 2011). Males are also more likely to experience more manic episodes than major depressive episodes (APA, 2000).

There have been no reports of differential incidence of BD based on race and ethnicity (APA, 2000). However, there has been some evidence to suggest that clinicians may have a tendency to over diagnose schizophrenia, instead of bipolar disorder, in some ethnic groups and in younger individuals (APA, 2000).

Individuals with a family history of BD are at a greater risk of developing the disorder themselves. First-degree biological relatives of individuals with bipolar I disorder have elevated rates of bipolar I disorder (4% - 24%), bipolar II disorder (1% - 5%), and major depressive disorder (4% - 24%; APA, 2000). Individuals with a family history of mood disorders are more likely to have an earlier age at onset and have a poorer prognosis (APA, 2000).

The average age of onset for BD is approximately 20 years old with early onset often indicating poorer outcome (Adams & Sutker, 2004; APA, 2000; Yatham, Kaurer-Sant'Anaa, Bond, Lam, & Torres, 2009). Most first psychiatric hospital admissions for

BD occur between the ages 20 and 29 (Adams & Sutker, 2004). BD is a recurrent disorder with more than 90% of individuals who have a single manic episode go on to have future episodes (APA, 2000). For individuals with BD who do not take medication to manage their symptoms, it is estimated that, on average, four episodes (e.g., manic, hypomanic, or depressive) occur in 10 years (APA, 2000). However, approximately 5% - 15% of individuals with BD experience four or more mood episodes within a given year (APA, 2000). This pattern is noted with the specifier *with rapid cycling*. Generally, rapid-cycling is associated with a poorer prognosis (APA, 2000). The interval between episodes often decreases as the individual ages (APA, 2000). There is also some evidence that suggests changes in sleep-wake schedule may precipitate or exacerbate a manic, mixed, or hypomanic episode (APA, 2000). Furthermore, the polarity of the first episode is of importance because depressive onset is associated with greater morbidity than manic onset (Yatham et al., 2009).

Comorbidity

More than half of individuals with BD have at least one additional Axis I diagnosis (Altshuler, Suppes, Keck, Frye, Denicoff, et al., 2001; Goldberg, 2009). The most frequent comorbid disorders with BD are substance abuse, anxiety, and personality disorders (Brown, Suppes, Adinoff, & Thomas, 2001; Goodwin & Hoven, 2002; Uecok, Karaveli, Dundakci, & Yazici, 1998). Comorbidity with BD has been attributed to a poorer course over time, shorter relapse periods, an increased number of hospitalizations, poor adherence to treatment, and increased suicidality (APA, 2000; Dunayevich, Sax, Keck, McElroy, Sorter, McConville, et al., 2000; Frangou, 2002; & Vieta, Colom, Corbella, Martinex, Reinares, Bernabarre, et al., 2001).

Functional Limitations

To warrant a diagnosis of BD, an individual's symptoms must be associated with clinically significant distress or impairment in social or occupational functioning, require hospitalization, or be characterized by psychotic features. Often, individuals with BD experience problems with school truancy, school failure, occupational failure, divorce, or episodic antisocial behavior (APA, 2000). Violent behavior, including physical violence towards children or partners, may occur during a severe manic episode or during episodes characterized by psychotic features (APA, 2000).

Individuals with BD generally report a limited support group including friendships, confiding relationships, and social contact (Hammen & Cohen, 2004). They generally experience lower marital satisfaction and have a high risk of divorce (Levokovitz et al., 2000; Suppes et al., 2001). The limited social support and social difficulties are relatively persistent across affective changes (Goldberg, Harrow, & Grossman, 1995).

Occupational limitations are also common with individuals with BD. Such individuals often experience impairment in obtaining employment and sustaining employment (Suppes et al., 2001). It is estimated that less than half of individuals with bipolar disorder work full-time (Suppes et al., 2001). Similar to social difficulties, impairment in occupational functioning does not seem to improve with remission or affective changes (Hammen & Cohen, 2004).

Another significant consequence of BD is mortality. Approximately 60% of individuals with BD will attempt suicide and approximately 10-15% will be successful in their attempts (APA, 2000; Novick, Swartz, & Frank, 2010). Suicidal ideation and

attempts are generally more common in the early stages of BD and commonly associated with depressive episodes (APA, 2010; Tondo, Isacson, & Baldessarini, 2003).

Individuals with BD are also at increased risk from dying from general medical conditions such as coronary heart disease (Sharma & Karkar, 1994), cerebrovascular disorders (Zheng, Macera, Croft, Giles, Davis, & Scott, 1997), and respiratory infections (Sharma & Marker, 1994). Such findings may be attributed to individuals with BD experiencing more chronic stress due to their fluctuating mood episodes and their increased engagement in risky behaviors (Cassidy, Ritchie, & Carroll, 1998).

CHAPTER 4

METHODS OF STUDYING THE EXPERIENCE OF MAJOR DEPRESSIVE DISORDER AND BIPOLAR DISORDER

First-Person Accounts

Major Depressive Disorder

There have been many memoirs or unstructured, personal accounts written that describe one's experiences living with depression. Such memoirs provide a detailed portrayal of one's struggles living with depression. There are many such memoirs available, including: *Darkness Visible: A Memoir of Madness* (Styron, 1990), *Willow Weep for Me: A Black Women's Journey Through Depression* (Danquah, 1999), *The Noonday Demon: An Atlas of Depression* (Solomon, 2001), *Unholy Ghost: Writers on Depression* (Casey, 2001), *My Depression: A Picture Book* (Swados, 2005), *Trouble in My Head: A Young Girl's Fight with Depression* (Monaque, 2007), *Shoot the Damn Dog: A Memoir of Depression* (Brampton, 2008), and *A Man Derailed: An Autobiography on Depression* (Holmes, 2009).

There are also documentaries and films that capture the experiences of individuals with depression. Recently, a documentary titled *The Bridge* (2006) was released which examined the lives of several people who committed suicide by jumping off of the Golden Gate Bridge in San Francisco, California in 2004. The film highlighted each person's difficulties living with depression and what may have contributed to their decision to commit suicide. Another film, *Prozac Nation* (2001), was adapted from the autobiography *Prozac Nation* (Wurtzel, 1994) which described one woman's struggle with depression.

Bipolar Disorder

There have also been many personal accounts written that describe one's experiences living with BD. These include *Detour: My Bipolar Road Trip in 4-D* (Simon, 2002), *An Unquiet Mind: A Memoir of Moods and Madness* (Jamison, 2005), *Sugar and Salt: My Life with Bipolar Disorder* (Hollan, 2007), *Manic: A Memoir* (Cheney, 2008), *My Kind of Crazy: Living in a Bipolar World* (Haynes, 2008), *I'm Not Crazy Just Bipolar* (Williamson, 2010).

There are also documentaries and fictional movies that have portrayed the experiences of individuals BD. For example, *My Friend Paul* (1999) provides a detailed account of having a friend with bipolar disorder. There also have been numerous fictional movies that highlight people's difficulties in living with BD. For example, Richard Gere portrayed a person's difficulties in living with and getting treatment for BD in *Mr. Jones* (1993). Another fictional movie about BD is *Bulworth* (1998) which provides insight into a person's struggle to cope with mania.

Strengths and Weaknesses of First Person Accounts

While memoirs and films provide insights into the experiences of individuals with mood disorders, they are often exceedingly broad and subjective, presenting the author or producer's focus or point of view. For example, one book may center on family difficulties and how it relates to depression, whereas another may concentrate on the emotional experience of depression. Such books and films may end up highlighting certain experiences while ignoring or distorting others. Such glimpses into one's life with mood disorders are also influenced by the difficulties associated with retrospective recall of events and experiences. So while these types of personal accounts may include

faithful aspects of the experience of having a mood disorder, it is impossible to tell which personal accounts or which aspects of personal accounts are faithful. Thus personal accounts cannot provide an adequate basis for a confident understanding of the inner experience of those suffering from a mood disorder.

Experience Sampling Methods

The Experience Sampling Method (ESM) is a method of studying experience and was developed to understand the relationship of inner experience, behaviors, and situational variables within participants' natural environments (Csikszentmihaly & Larson, 1987; Hormuth, 1986). ESM uses signaling devices such as pagers, programmable wrist watches, or telephones to alert participants at quasi-random intervals. In response to the signal, participants complete a questionnaire pertaining to their current experience (e.g., mood, affect, activities, etc). The content of the questionnaire differs based on the investigator's interests; however, most questionnaires include questions pertaining to the participant's social context, location, time of the signal as well as his/her current affect and cognitions. Overall, ESM aims to obtain an understanding of participants' internal and external states at the moment of each signal.

ESM can be completed in two ways. Traditionally, a paper-and-pencil technique is used in which participants complete a paper questionnaire at the moment of a signal or interval. The paper-and-pencil method is cost efficient and can be administered to a large number of participants with minimal risk of participants' losing or damaging laboratory equipment. On the other hand, the paper-and-pencil method does not allow investigators to randomize presentation of items on the questionnaires, lacks the ability to extract compliance data, increases data management demands, and increases human error in data

entry. More recently, ESM has replaced the paper questionnaires with computerized technologies, such as handheld electronic devices or Palm Pilots, on which participants complete their questionnaires. Using electronic devices allows the time in which participants complete the questionnaire to be recorded and thus yields compliance data. Furthermore, computerized devices are advantageous as they allow for precisely controlled timing, randomization of item presentation, and reduce human error. Using electronic devices also increases the likelihood of timely reporting (Barrett & Barrett, 2001). Disadvantages of electronic devices include possible programming complications, additional setup and maintenance, possible loss of data as a result of electronic malfunctions, and increased cost associated with purchasing the electronic devices (Stone, Kessler, & Haythornthwaite, 1991).

ESM has been used to investigate a multitude of inner experiences and how they relate to situational variables (Hormuth, 1986). In terms of inner experiences, ESM has been used to explore participants' mood, cognitions, and affects. ESM has investigated gender differences (Graef, 1979), inner experiences of individuals with a psychiatric disorder (Kimhy, Delespaul, Corcoran, Ahn, Yale, & Malaspina, 2007; Delespaul, 1995), adolescents as they emerge through puberty (Savin-Williams & Jaquish, 1981), the affects of mothers' with infants (Wells, 1988), clusters of emotions within families (Larson & Richards, 1994), and differences in positive and negative emotional experiences among culturally-different participants (Scollon, Diner, Oishi, & Biswas-Diner, 2004) among others.

Major Depressive Disorder

Several ESM studies have focused on the experience of depression. For example, Peeters, Berkhof, Delespaul, Rottenberg, and Nicolson (2006) examined the pattern of negative and positive affect experienced by depressed and non-depressed individuals over the course of a day. Participants were asked to report the presence of 16 emotions (8 positive emotions and 8 negative emotions) 10 times a day with 90-minutes as the average interval between ratings. Results demonstrated that depressed individuals experienced significantly less positive affect and more negative affect than non-depressed participants. Furthermore, they found that non-depressed individuals exhibited an increase in positive affect throughout the day beginning in the morning with low levels of positive affect and ending the afternoon and evening with high levels of positive affect. In contrast, depressed individuals exhibited a pronounced diurnal rhythm for negative affect which varied moment to moment substantially more than the healthy controls.

Another study compared retrospective and momentary reports of affect for depressed individuals and nonclinical controls (Ben-Zeev, Young, & Madsen, 2009). The study used ESM to obtain momentary reports of affect as participants were asked to complete the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) at each sampling moment. After one week of randomly recording their affect approximately 8 times a day, participants were asked to retrospectively rate the degree to which they experienced negative and positive affect throughout the previous week. Results found that both depressed and non-depressed participants exaggerated retrospective estimates of both positive and negative affect. However, the non-depressed group demonstrated a greater bias towards positive affect than the depressed group. This

finding is consistent with the theory that non-depressed individuals experience a “rosy view” or “positive illusion” of their life (e.g., overly positive self-evaluation and unrealistic optimism) which has been theorized to foster psychological wellbeing (Mitchell, Thompson, Peterson, & Cronk, 1997). Depressed individuals did not exaggerate positive affect more than negative affect suggesting that they do not display the same “rosy view” bias as demonstrated in non-depressed individuals.

Moberly and Watkins (2008) used ESM to examine the role of ruminative self-focus for individuals reporting high and low levels of depressive symptoms. Participants rated the degree to which they experienced sadness, anxiety, irritation, focus on feelings, and focus on problems using a 7-point rating scale from 1 (*not at all*) to 7 (*very much*) 8 times over 7 days using a signal-contingent method. Participants also completed scales that measured their depressive symptomatology and rumination response style. Results demonstrated that ruminative self-focus was influenced by environmental context. For example, ruminative self-focus increased as feelings or problems become more salient. They also found that the degree of self-focus tended to be highest in the morning and in the evening, which may be a function of the nature of activity during a typical day. These findings are also consistent with Peeters et al. (2006) which found that depressed individuals experience more negative affect in the morning as compared to the afternoon and evening. Lastly, they found that ruminative self-focus was strongly associated with negative affect.

Another study examined the relationship between emotion intensity, lability, and coping strategies and depressive symptoms in a sample of adolescents using ESM (Silk, Steinberg, & Morris, 2003). Participants were instructed to rate the presence and

intensity of anxiety, sadness, and anger on a 5-point scale from 1 (*not at all*) to 5 (*very much*). Participants were also asked to report recent events that occurred that were emotionally salient and any strategies that they used to regulate their negative emotions. They found that adolescents who were less likely to employ strategies to regulate their negative affect were experiencing more depressive symptoms than adolescents who used emotional regulation strategies. In addition, the intensity of emotions experienced and increased lability were associated with elevated depressive symptoms and behavioral problems.

Bipolar Disorder

ESM has been used to examine emotional reactivity in individuals with BD. Myin-Germeys and colleagues (2003) investigated the emotional reactivity to daily hassles for participants with BD, MDD, and a control group. Participants were cued ten times a day at unpredictable moments on six consecutive days. They found that in response to daily hassles, individuals with BD experienced a decrease in positive affect. In contrast, participants with MDD experienced an increase in negative affect and the control group experienced both an increase in negative affect and a decrease in positive affect. Such results suggest mood disturbance impacts an individual's emotional reactivity to daily stresses.

Havermans and colleagues (2007, 2010) conducted two studies examining mood reactions of individuals with BD in order to better understand an individual's propensity to experience a manic or depressive episode. Using ESM, they monitored negative and positive mood states, and reactivity to daily hassles. Results demonstrated that there was not a significant difference in negative or positive affect between individuals with BD

and a control group (Havermans et al., 2007; Havermans et al., 2010). However, participants with BD with subsyndromal depressive symptoms displayed particularly large negative affect in response to daily hassles and reported such daily hassles to be stressful (Havermans et al., 2007; Havermans et al., 2010). Notably, they found that the participants with BD were more often alone and at home and spent less time working and more time in passive leisure activities as compared to a control group (Havermans et al., 2007).

ESM has also been used to understand the cognitive processes and coping styles of individuals with BD. One study examined momentary self-esteem, emotion, and use of coping styles over a six day period (Bentall, Myin-Germeys, Smith, Knowles, Jones, Smith, et al., 2011). Participants with BD displayed higher fluctuations in self-esteem, evidence of alcohol and substance abuse, and more dysfunctional coping styles including rumination and risk-taking as compared to a control group.

Strengths and Weaknesses of ESM

Overall, ESM provides many advantages in the study of individuals' inner experience. ESM reduces reliance on memory as participants report their current experience at the moment of the signal. As Ben-Zeev, Young and Madsen (2009) demonstrated, depressed individuals are not accurate in their retrospective recall of negative and positive emotions. ESM can be used in single case studies, yielding idiographic results, and also with a large number of individuals, yielding nomothetic results (Csikszentmihalyi & Larson, 1987). ESM is an ecologically valid method allowing for real-life contextual analysis of behavior with repeated-measure designs. ESM can extract information about participants' behavior, affect, and/or cognitions that

can be compared to situational variables (Hormuth, 1986). Lastly, the questionnaires used in ESM procedures can vary to obtain as much information as desired about a participant's internal and external experiences.

ESM techniques also have limitations. For example, Larson and Csikszentmihalyi (1983) expressed concerns about sample biases. Potentially, participants who are willing to participate in studies such as ESM, which are time-consuming and require divulging of personal information, may differ in important ways from participants who refuse to participate. Furthermore, because of the lengthy nature of ESM, many participants may prematurely drop-out of the study.

Another limitation of ESM includes the questionnaires that participants are asked to complete throughout their sampling. The questionnaires that are used intend to be thorough in providing a detailed and accurate description of a person's experience at a particular moment in time. However, it is impossible to create an exhaustive list of questions that address all possible events or occurrence a participant may experience. For example, an ESM study may ask depressed individuals to rate their emotional experiences; however, perhaps the uniqueness of a depressed person's experience is not captured in the intensity or specificity of a specific emotional experience. Perhaps the content or the structure of their experience may be of importance. In addition, it is possible that participants may misunderstand or misread questions and the procedure does not provide participants an opportunity to explain their answers or provide additional information. The lack of dialogue between participant and investigator also does not allow the opportunity for iterative training or the clarification of meaning.

Think-Aloud (TA) and Articulated Thoughts in Simulated Situations (ATSS)

Another technique used to explore the characteristics of inner experiences is Think-Aloud (TA). TA is used to primarily assess cognitions, what and how a person thinks, as he/she completes a prescribed task. Although TA mostly assesses cognitions, it was originally developed to better understand the relationship between cognition, affect, and behavior (Davison, Vogel, & Coffman, 1997; Ericsson & Simon, 1984). TA techniques have been used as early as the 1950s to study college students' problem-solving skills (Bloom & Broder, 1950) and to study the thought processes of average and superior chess players (de Groot, 1965).

TA studies typically explain to participants that most people have some sort of "internal monologue," like an ongoing stream of thoughts that occur as they go about their daily activities. Participants are asked, as they complete an assigned task such as a math problem or a game of chess, to tune into their mental thoughts and verbally repeat them out loud, or "think-aloud." Participants' thoughts are recorded and later transcribed and interpreted (Davison, Navarre, & Vogel, 1995).

The Articulated Thoughts in Simulated Situations (ATSS) paradigm was created as an alternative to the Think-Aloud (TA) method (Davison, Robins & Johnson, 1983). Like TA, ATSS assumes people have an ongoing "internal dialogue" that can be naturally and easily attended to (Davison, Navarre, & Vogel, 1995). Similarly, ATSS assesses participants' inner thoughts as they verbalize their cognitions at the moment they occur. ATSS is a laboratory procedure in which participants listen to a hypothetical scenario via a video or audio tape player and are asked to imagine themselves in that situation. Once the scenario has been played, participants are asked to articulate their ongoing thoughts as

they occur (Eckhardt, Barbour, & Davison, 1998). Following the simulated situation, participants' responses are coded for content and structure and further analyzed.

ATSS is advantageous in studying emotional experience because the selected scenarios can elicit a target emotion. Surveying participants with similar or different scenarios and comparing the changes in think-aloud reports extracts qualitative data in terms of how cognitions change as a result of external influences. ATSS has been used to investigate the thought patterns of participants with psychopathology.

Major Depressive Disorder

TA has also been used to examine the experiences of depressed individuals. For example, Mayo and Tanaka-Matsumi (1996) compared problem solving abilities of dysphoric individuals and non-dysphoric individuals using the TA method. Participants watched a video recording of an interpersonal problem depicting the loss of a relationship. Participants were then asked to solve the problem while thinking aloud. Prior to the TA procedure, participants were asked to rate their perceived ability to problem solve. Results demonstrated that the dysphoric group rated their problem solving abilities to be limited as compared to the non-dysphoric group. However, despite the low ratings of problem solving abilities, the dysphoric group demonstrated as many and as effective solutions to the interpersonal problem as compared to the non-dysphoric group. However, a closer examination of their problem solving technique exposed that the dysphoric group were more likely than the non-dysphoric group to use an emotional problem solving approach (e.g., seeking emotional support or disengaging from the problem). In contrast, the non-dysphoric group was more likely to engage in problem focused solutions which directly solved the problem.

Barnhofer and colleagues (2002) examined depressed and non-depressed individuals recall of autobiographical memories. Participants were presented with a cue word (positive words: happy, safe; negative words: sad, lonely) and were asked to verbalize thoughts aloud while remembering details of an autobiographical event for 2-minutes. Participants' verbalized thoughts were recorded and later transcribed to be coded for the number of memories described and the specificity of each memory (i.e., a specific event, an extended even that occurred over a period of time, or categorical such as a series of repeated events). Results demonstrated that depressed individuals produced less specific memories of an event, but recalled more categorical memories as compared to non-depressed individuals. Such findings are consistent with the theory that depressed individuals engage in increased levels of rumination thus making their memory search generally less focused as compared to non-depressed individuals.

White, Davison, Haaga, and White (1992) used the ATSS method to compare the depressed and non-depressed participants' reaction to negative, neutral, and positive audiotaped simulated situations. Depressed participants demonstrated substantially more negative cognitions in response to the negative situation as compared to the non-depressed participants. Such results suggest that depressed individuals' cognitive style may be directly associated with situational variables.

Bipolar Disorder

We could not find any current TA or ATSS studies that examined the experiences of individuals with BD.

Strengths and Weaknesses of TA and ATSS

Overall, Think-Aloud methods are advantageous in examining the experience of depressed individuals as it minimizes retrospective errors as participants are asked to report their ongoing thought processes as they occur or immediately thereafter (Davison, Navarre, & Vogel, 1995). Also, TA and ATSS are relatively unstructured, allowing participants to report all cognitions in an open-ended manner rather than being limited to prescribed questions chosen by an investigator. Lastly, TA and ATSS provide investigators with laboratory flexibility in that investigators can alter emotion or thought provoking scenarios to explore, describe, and compare thoughts from a variety of participants in an assortment of scenarios (Davison, Vogel, & Coffman, 1997).

Despite its many advantages, TA and ATSS also have some disadvantages. TA and ATSS are not ecologically valid; thus they present a picture of laboratory-induced mental processes that may or may not parallel mental process outside of the laboratories. Some investigators have argued for the need for caution given the potential for reactive interference between verbalizing thoughts and the actual thinking process. During a TA session, participants are asked to verbalize their ongoing cognitions while completing a task. Some critics of TA and ATSS question participants' ability to complete the dual demands of paying attention to cognitions and simultaneously verbalizing them while not losing any important parts of the experience (Davison, Navarre, & Vogel, 1995). Also, Klinger (1975) suggested that participants, while completing the Think-Aloud task, can only express a small portion of their cognitions since participants' verbalization will interfere with the natural flow of experience. It is also possible that cognitions that seem of relatively low frequency or low importance may not be reported at all or as often as

those that seem to be of high relevance (Davison, Navarre, & Vogel, 1995). For example, if a participant is asked to report his experience while taking a math test, the participant may begin to think about what he is going to have for lunch; however, because this thought seems unrelated to the task at hand the participant may be reluctant to verbalize it.

Fundamentally, TA assumes a person's stream of consciousness consists only of words or experiences that can be easily summarized or conveyed via words and is presented in a constant stream of ongoing thoughts. However, some introspective research does not support this language-dominant internal world but rather an internal world populated by mental images, unsymbolized thinking, inner speaking, inner hearing, sensory experiences, and much more (Hurlburt & Heavey, 2006). Asking participants to report thoughts as they occur could result in participants converting these other rich experiences into verbal terms that may not provide a precise portrait of the nature or richness of inner experience as it occurs, particularly given the time constraints inherent in TA and ATSS procedures.

Diary Methods

Diary methods have also been used to investigate inner experience. Diary methods refer to self-report instruments that are used repeatedly to examine experiences or behaviors; for example, participants may be asked to maintain a diary of their experiences over hours, days, weeks, and sometimes months (Bolger, Davis, & Rafaeli, 2003). Diary methods usually have two goals: to explore phenomena as it unfolds over time and to investigate particular phenomena (Bolger et al., 2003). Diary strategies differ from personal diaries in that participants are instructed to record thoughts, emotions, or

behaviors about a specific topic as it occurs within a specified time-frame rather than writing freely about anything. Participants are made aware of the research target so that they record their experiences accordingly.

There are three types of diary schedules: interval-contingent, signal-contingent, and event-contingent (Bolger et al., 2003). Interval-contingent methods require participants to report their experiences at predetermined intervals (e.g., every 5 hours, every day, etc). Signal contingent relies upon signal devices to alert participants to record diary entries at fixed, random, or a combination of fixed and random intervals. Event-contingent diary methods require participants to record their experience each time an event occurs (e.g., every time they eat, each time they speak to their spouse, etc.).

Similar to ESM techniques, some diary studies use electronic devices for data collection. Electronic devices used with diary methods include palmtop computers or personal digital assistants (PDAs; Bolger et al., 2003). Paper-and-pencil diaries are equipped with some obvious limitations including participants' forgetfulness and compliance as well as participants feeling hesitant to be completely open and honest in their entries fearing that their diary may be viewed by others in their environment. Some studies have found electronic diaries increase compliance as compared to paper-and-pencil methods.

On the other hand, Green, Rafaeli, Bolger, Shrout, and Reis (2006) found that both the paper-and-pencil and computerized methods yielded a compliance rate of approximately 86 percent. Despite the comparable compliance rate, they found that participants using the paper-and-pencil method were less likely than participants using the computerized method to complete all of the daily entries. Green and colleagues

(2006) also investigated compliance rates of the paper-and-pencil method combined with increasing participants' motivation and researcher-participant rapport. Results found only 9.9% of paper-and-pencil entries were made outside of a five to fifteen minute interval.

Major Depressive Disorder

Several diary studies have examined the experience of depression. Some diary studies have focused on behaviors or interpersonal interactions of individuals with depression. For example, Hopka and Mullane (2008) used a daily diary method and behavioral coding system to examine whether depressed and non-depressed individuals differed with regards to their behaviors. Their findings demonstrated that depressed participants engaged less frequently in social, physical, and educational activities as compared to non-depressed participants; however, they engaged more frequently in employment-related behaviors as compared to non-depressed individuals. Such result suggests that depressed individuals' environment and behavioral engagement is qualitatively different than non-depressed individuals.

Similarly, Wang and colleagues (2004) examined the degree to which depressive symptoms interfere with daily behaviors and functioning. They used a diary method to examine the moment-in-time work performance among service workers who were depressed as compared to service workers who were not depressed. Participants were provided with a pager and were asked to report on their current work performance at the random time points in which the pager alerted. Participants were signaled to rate their work performance five times daily for seven days. Findings demonstrated that depressed participants exhibited decrements in work performance for task focus and productivity as

compared to non-depressed participants. Overall, the diminished work performance was estimated to be equal to approximately 2 absent days per month for the depressed participants.

Eberhart and Hammen (2010) examined the relationship between interpersonal style, stress and depressed mood. Their sample consisted of female college students. Participants were instructed to complete a daily survey online for 14 consecutive days which consisted of an interpersonal style questionnaire, a romantic life events questionnaire which measured romantic stressors, questions pertaining to outside stress (i.e., school and work), and a measure of daily depressive symptoms. Results demonstrated that romantic conflict stress mediated the relationship between interpersonal style and depressive symptoms suggesting a transactional model of interpersonal style and depression. Results did not demonstrate support of a diathesis-stress model of depression which understands depressive symptoms as being produced by interpersonal vulnerabilities that interact with conflict stressors.

Rook (2001) examined the relationship between interpersonal interactions on negative and positive mood for older adults (mean age 70). Participants engaged in an interview to assess their background, health status, social network, life stress, and emotional health. Participants were then asked to maintain a daily diary for 2 weeks which assessed mood and positive and negative social interactions. For social interactions, the diary included a checklist of 14 possible positive exchanges and 6 negative social exchanges; participants were asked to indicate whether each of the exchanges occurred. Findings suggested that negative social exchanges were more influential on participants' moods than were positive social exchanges. For example,

negative exchanges further intensified negative mood and often diminished positive mood. In contrast, positive exchanges did not counteract negative moods. Furthermore, frequent negative exchanges were significantly related to increased depressed moods and reports of loneliness. In contrast, positive exchanges were only significantly related to less loneliness.

Another study focused on the emotional experiences of individuals with depression. Chepenik and colleagues (2006) examined the experience depressive disorders for elderly individuals as compared to non-depressed elderly individuals. Participants were asked to maintain a daily diary of their affective states for a two-week period. Depressed participants exhibited significant day-to-day variability in their negative affect as compared to the non-depressed controls. In addition, dysphoric days (i.e., days with negative affect ratings) occurred approximately 63% of the time for participants with Major Depressive Disorder, 50% of the time for participants with other depressive disorders, and only 7% of the time for non-depressed participants. Results also found that participants with MDD appeared to have blunted positive affect in response to positive events as compared with non-depressed participants.

Mor and colleagues (2010) examined the cognitive style of adolescents' with depression. Participants were asked to complete diary measures, including measures of their current thoughts, affect, and levels of stress, six times a day for three days. Results showed that among the depressed and non-depressed participants, negative affect was universally related to both concurrent stress and self-focus. However, the relationship between negative affect and self-focused cognition was significantly stronger for

participants with a recent depressive mood disorder as compared to participants without an emotional disorder.

Another study examined the relationship among interpersonal interactions and emotional and cognitive symptoms of depression. Hankin (2010) used the elaborated cognitive vulnerability-transactional stress model (Hankin & Abramson, 2001) to predict that individuals who exhibit high negative emotionality traits will likely create additional stressors in their environment and subsequently will be more likely to display cognitive vulnerabilities and interpret negative events in a depressed manner. Participants were asked to maintain a daily diary for 35 consecutive days in which they rated their depressive symptoms and the objective stressors they were experiencing. Results were supportive of the elaborated cognitive vulnerability-transactional stress model such that individuals with higher levels of trait negative emotionality as measured at baseline encountered significantly more objective stressors over time and interpreted those stressors in negative ways. In other words, the dysfunctional interpretations and negative cognitive style interacted with the daily stressors which predicted the variability of depressive symptoms.

Bipolar Disorder

Diary studies have been frequently employed to investigate the behavior (e.g., sleep and activities) of individuals with BD (Gershon, Thompson, Eidelman, McGlinchey, Kaplan, & Harvey, 2012; Mullin, Harvey, & Hinshaw, 2011). However, there have only been a few studies that have explored the inner experience of individuals with BD. One study (Knowles, Tair, Jones, Highfield, Morriss, & Bentall, 2007) examined the self-esteem and presence of positive or negative affect of individuals with

BD in remission as compared to healthy controls and individuals with depression. Participants were asked to complete a diary twice a day for two weeks measuring self-esteem and experienced positive and negative affect. The participants with BD demonstrated stronger fluctuations in self-esteem and experienced affect as compared to the healthy controls and individuals with depression. They also found that the individuals with BD evidenced pessimistic attributional style.

Gershon and colleagues (2012) also examined the presence of negative affect in relation to sleep. Participants maintained a diary of their sleep and affect. Results found the participants with BD experienced longer sleep onset latency and experienced higher negative affect as compared to the control group.

Two studies (Hofmann & Meyer, 2006; Jones, Tai, Evershed, Knowles, & Brentnall, 2006) examined the experienced of individuals identified as being at-risk for developing BD. Jones and colleagues' (2006) participants included children between the ages of 13 and 19 who had a parent who was diagnosed with BD. Participants were asked to complete a 7-day recording of their sleep, activities, perceived self-esteem and experience of positive and negative affect. Hofmann and Meyer's (2006) participants included individuals who scored in the elevated range on the Hypomanic Personality Scale (2006) which indicated that they may be at risk for developing BD. Participants completed a 28-day diary which involved some self-report measures which assessed for affect and manic symptoms. Both studies found that the participants identified for being "at-risk" for BD demonstrated mood instability. Such results suggest that mood instability may increase one's vulnerability for BD.

Strengths and Weaknesses of Diary Methods

Overall, diary methods are advantageous in that they reduce retrospective memory errors and allow for analysis of within-person differences as well as between-person differences (Bolger et al., 2003). For example, McAuliffe, DiFrancesico, and Reed (2007) instructed participants to maintain a daily diary of sexual behaviors for three months. At the end of the three months, participants completed a retrospective survey estimating the frequency of sexual behaviors. Fifty percent of participants underestimated their sexual practices and 17% over-estimated their sexual practices on the retrospective questionnaire (McAuliffe, DiFranceisco, & Reed, 2007). Winkielman, Schwarz, and Belli (1998) suggest that differences among retrospective questionnaires, sampling procedures, and diary reports are due to participants' interpretation of the questions. Concurrent reports, such as diary methods and sampling procedures, provide a shorter reference period such as at the moment of a signal. How often a participant reports experiencing negative, self-degrading thoughts in the past week, month, or even year would most likely be less accurate than the same participant's report of how often he/she experienced self-degrading thoughts within one day or one hour.

Diary methods also have numerous disadvantages. For example, diary methods often require detailed training sessions to ensure participants fully understand the diary protocols (Reis & Gabel, 2000). Little is known about whether keeping a daily diary affects experiences that are reported (Bolger, Davis, & Rafaeli, 2003). Some diary studies have documented negative mood elevation at the beginning of sampling, although the elevated mood is usually short-lived (Gleason, Bolger, & Shrout, 2001). In studies of

MDD and BD, such changes in mood could be detrimental in the interpretation of research findings.

Diary methods also have similar limitations as ESM studies with regards to the questionnaire participants are asked to complete throughout their sampling. As with ESM, the questionnaires are intended to be thorough in providing a detailed and accurate description of a person's experience of something. However, it is impossible to create an exhaustive list of questions that address all possible events or experiences. In addition, it is possible that participants may misunderstand or misread questions and diary methods do not provide participants an opportunity to explain their answers or gain feedback with regards to their performance. The lack of dialogue between participant and investigator also does not allow the opportunity for iterative training or the clarification of meaning.

Descriptive Experience Sampling

Descriptive Experience Sampling (DES) is an idiographic, exploratory method developed by Hurlburt (1990, 1993) to describe inner experience faithfully. DES begins by attempting to apprehend single, randomly chosen moments of inner experience and then uses these individual moments of experience to build an idiographic profile of an individual's inner experience. DES aims to observe and describe pristine internal experience free of interference from the participant or the investigator (Hurlburt & Akhter, 2006). DES rules out anything that is outside of the participant's current awareness (Hurlburt & Akhter, 2006) and thus participant's explanations, interpretations, "unconscious" processes, and events occurring before or after the beep are avoided in DES.

DES participants are given a device that randomly emits a beep through an earphone. Participants are asked to choose a time during the day to turn on the beeper and carry it with them throughout their regular daily activities. Once turned on, the beeper randomly will emit a beep. When the beep sounds, participants are asked to “freeze” and remember or take notice of their inner experience that was ongoing at the moment the beep sounded. Inner experience refers to anything within a participant’s awareness, including but not limited to thoughts, feelings, sensations, images, etc. Participants are asked to jot down notes about their inner experience at that moment in a small notebook, reset the beeper, and continue on with their daily activities. This procedure is typically repeated until the participant has received six beeps, which usually takes about three hours. By nature, DES is an exploratory procedure; therefore, specific instructions as to what the participant will most likely experience are not given and it is entirely possible a participant will experience something no previous participant has experienced. A detailed description of the instructions given to participants, including an annotated transcript of the instructions, can be found in Hurlburt and Heavey (2006).

Within 24 hours of sampling, an expositional interview takes place between the investigator and the participant in which they discuss each moment of sampled inner experience. The goal of the expositional interview is to develop as clear and precise an apprehension of each sampled moment of inner experience as possible. During the interview the investigator strives to remain non-leading in his/her questioning. In order to remain unbiased and non-leading, the participant and investigator must bracket their presuppositions with regard to the nature of inner experience (Hurlburt & Heavey, 2006). In addition, the investigator must also carefully evaluate the participant’s use of

“subjunctifiers,” or descriptions of inner experiences that are verbally asserted using subjunctive, non-declarative statements (Hurlburt & Heavey, 2006).

DES is an iterative procedure (Hurlburt, 2009; Hurlburt & Akhter, 2006). Most participants are not skilled observers of their inner experiences. During the first day of sampling they usually are unprepared for the investigator’s direct and specific questioning about their moments of inner experiences. Thus, DES practitioners usually consider the first day of sampling a practice session and do not include the first day of sampled moments in data analyses (Hurlburt & Heavey, 2006). Usually, participants engage in three to eight days of sampling, yielding between 18 and 48 moments of experience.

DES studies vary greatly in the types of participants sampled and participants’ reported experiences. Some DES studies explore one participant’s inner experiences. In these studies, the DES method is used for idiographic purposes, aimed to describe the unique characteristics of a unique individual (Hurlburt & Akhter, 2006). Other DES studies explore a collection of participants who have a feature in common, such as a psychiatric diagnosis (e.g., schizophrenia, depression, Asperger’s syndrome, etc.) or an external characteristic (e.g., speed of talking). In such studies, the investigator first apprehends participants’ experiences idiographically and then nomothetically examines if any salient characteristics emerge across the collection of participants as a whole (Hurlburt & Akhter, 2006). Such nomothetic analyses of inner experiences begin at the bottom – faithfully describing a single experience of a single participant. Idiographic DES studies have been used to develop a codebook for frequently occurring characteristics of experience (Hurlburt & Heavey, 1999).

DES has been used to explore inner experiences of individuals with psychiatric diagnoses in common. For example, Hurlburt, Happe, and Frith (1994) explored the inner experience of three participants diagnosed with Asperger's syndrome. They found the Aspergers participants' inner experiences were either nonexistent or exclusively characterized by images with rarely any other feature of inner experience. In addition, these participants showed no interest or curiosity about the differences between their own experiences and experiences of other participants, something that is uncommon with the DES participants (Hurlburt, Happe, & Frith, 1994).

DES has also been used to explore experiences of participants diagnosed with schizophrenia (Hurlburt & Melancon, 1987; Hurlburt, 1990). Such studies have demonstrated that participants diagnosed with schizophrenia tend to experience "goofed-up" images and hyper-clear emotional experiences. These studies have suggested perhaps individuals with schizophrenia experience distortions or hallucinations on a smaller scale everyday in their conscious experience (Hurlburt & Melancon, 1987a). Participants' with anxiety (Hebert & Hurlburt, 1993) and depression (Hurlburt, 1993) have also participated in DES studies. Results indicate participants with increased anxiety often engage in self and other-directed criticism (Hebert & Hurlburt, 1993). Participants with depression tend to experience more unsymbolized thinking as compared to participants without depression (Hurlburt, 1993).

DES has also explored the relationship between inner experiences and external characteristics. Hurlburt, Koch, and Heavey (2002) evaluated the connection between inner experience and the rate of participants' speaking measured in words per minute. They found the collection of participants with high-speech-rates experienced three-times

more multiple awarenesses (25.9% as compared with 7.1%) and experienced higher frequency of just engaging in an activity with no ongoing inner experience, a phenomenon called “just doing,” as compared to the comparison group.

High inter-rater reliability has been demonstrated for the DES method such that DES investigators agree upon the categorization of experiences using a codebook developed by Hurlburt and Heavey (1999; Hurlburt & Heavey, 2006). Results yielded interobserver agreement of 98% for the 11 low frequency characteristics of inner experience and 91.3% for the five high frequency characteristics. The characteristic with the lowest reliability was sensory awareness.

DES is well suited to exploring inner experience in that it captures pristine inner experiences; it is exploratory and idiographic in nature; and it does not make assumptions about the characteristics of inner experience such as assuming inner experience is always present or consists of one pattern for all participants. DES reduces reliance on participants’ memory by having the participant take notes about the experience immediately after it occurs and by scheduling the follow-up expositional interview within 24-hours of the collection of beeps. DES is ecologically valid, allowing for a depiction of inner experience in participants’ natural environments.

Major Depressive Disorder

There have been several DES studies on depression. Hurlburt (1993) examined the experience of four participants who were depressed or dysphoric. Participants were sampled during times of dysphoric mood and times of euthymic mood. The collected moments of experience were examined for similarities of experience individually and as a sample. Overall, depressed mood was associated with an increase in unsymbolized

thought, the experience of thinking without the content of the thinking being represented in words, images, or other symbols (Hurlburt & Akhter, 2008; Hurlburt & Heavey, 2002; Hurlburt & Heavey, 2006). It was also noted that participants had a more difficult time observing and articulating the characteristics of their experience when in a depressed mood.

Another study explored the characteristics of inner experience for depressed and non-depressed participants using DES (Perlotto, 2001). The moments of experience were coded for prominent characteristics of inner experience. Results found that depressed participants experienced feelings, sensory awareness, and unsymbolized thinking most frequently, whereas non-depressed participants experienced feelings, inner seeing (e.g., images), and sensory awareness most frequently. Notably, depressed participants experienced more negative feelings than positive feelings as compared to non-depressed participants. Depressed participants also had more multiple experiences in each sampled moments as compared to the non-depressed group. Similar to Hurlburt (1993), these findings were restricted by a small sample size of three depressed and five non-depressed participants.

Cavenagh (2003) explored the relationship between cognitive style and depression with DES for two participants who were determined to be at-risk for depression compared to four participants who were determined to not be at-risk for depression. The two participants at-risk for depression exhibited substantial differences in their inner experience as compared to the four participants who were determined to not be at-risk for depression. The two at-risk for depression participants' inner experiences exhibited evidence of a negative cognitive triad, whereas the remaining participants did

not. The two at-risk for depression participants also experienced the greatest frequency of negative valence in their sampled moments of experiences (61% and 39%) and were described to have a more depressed feel to their experiences as determined by the clinical impressions of the researchers conducting the expositional interviews. Consistent with Perlotto (2001), the at-risk for depression participants in Cavenagh's (2003) study infrequently experienced inner seeing, or images, and more often experienced sensory awareness as compared to the non-depressed participants. Overall, Cavenagh (2003) determined that the results did not show patterns consistent with the current theories of depression.

Gunter (2007) also examined the inner experience of individuals with depression using DES and found results consistent with Perlotto (2001) such that depressed participants exhibited more negative experiences than positive experiences as compared to the non-depressed participants. Furthermore, depressed participants exhibited more negative physical sensations than non-depressed participants and such physical sensations were often associated with an affective experience.

DES has also been used to explore the inner experiences of three depressed participants over the first 10 weeks of antidepressant medication (Lefforge, 2007). Results were supportive of the aforementioned findings that participants more frequently experienced negative emotions compared to positive emotions. Substantial individual differences in inner experience were also noted among the participants. Participants also displayed a high degree of comorbidity and a variety of patterns of changes in symptoms across the 10 weeks.

Bipolar Disorder

DES has been used to explore the inner experience of those with BD. Hurlburt (1993) sampled with four participants who had various affective disorders ranging from hypomanic to normal dysphoric and mildly depressed to deeply depressed. The participant who experienced hypomania experienced inner seeing in 95% of his sampled moments. The majority of those inner seeing were recreations of scenes he had seen earlier in reality. The inner seeings were characterized by clarity, color, rich visual details, movement within the inner seeing, and the center of the inner seeing being clear with the periphery gradually degrading. However, the inner seeings seemed to alter in relation to the participant's mood altering. For example, during his period of fatigue, his inner experience was dominated by inner seeing with abrupt edges, lacking motion, and with visual details indeterminate. This participant also seemed to struggle to distinguish how his emotional experiences were present to him despite being able to differentiate between emotions. The participants who experienced depression evidenced more unsymbolized inner experience. He also reported few incidents of inner seeing, inner speaking, and feelings. He also seemed to have a harder time observing and communicating the characteristics of his inner experience as the severity of his depression increased.

Limitations to DES

There are limitations of DES that are worth noting. Like most qualitative methods, data collection in the DES method is time-consuming, requiring a substantial commitment of the investigator's and participant's time. For example, participants are asked to come in for an initial meeting with the researchers during which they are given a

brief description of the DES procedure as well as instructions regarding using the beeper and collecting sampled moments of experience. This first meeting generally lasts between a half hour and an hour. Participants are then asked to collect six moments of experience during a time of their choosing. This takes approximately another three hours. After the collection of the beeps, participants return for an hour long expositional interview about their experiences at each moment of the beep. After the completion of this process, the researchers write a brief description of each moment of experience. This process usually is repeated four to eight times. The time consuming nature of DES limits the number of participants that can be used for each study. The time-consuming nature of DES may also result in sampling bias in that participants who volunteer to participate in such a time consuming research study may be qualitatively different than other potential participants.

Another potential limitation to DES research is the lack of situational control. Participants are asked to collect sampled moments of their experience during any time of their choosing. Some participants collect their moments of experience while in class while other participants may collect their moments of experience while working and so forth. Some participants may only collect their moments of experience in particular times or activities resulting in a non-typical representation of their inner experience. For example, a person's inner experience while doing homework may be different than if he/she is socializing with friends. Gathering moments of experience only while doing homework may not lead to an accurate portrayal of that person's experience. The situational variability also makes comparison between two participants difficult because of the variability in their environment when they collected their sampled moments.

Furthermore, the situational variability may account for some of the differences in experience observed between groups. For example, perhaps the typical situation in which a depressed person samples (e.g., alone in their house) may be qualitatively different than a non-depressed person (e.g., out with friends). Additional research is needed to further understand the effects of situational variability on inner experience.

Another limitation of DES is its lack of ability to monitor whether participants actually report on their experience at the moment of the beep. Some ESM and diary methods utilized technologies that record the time in which participants report their experiences. This allows researchers to monitor how compliant participants are with regards to the task. DES participants are told that they can choose to not discuss any particular sampled moment with the researchers. Such sampled moments may include moments participants may feel uncomfortable or be embarrassed to discuss with the researchers or moments in which participants were not able to attend to their inner experience. However, participants rarely present with sampled moments they do not wish to discuss. This may demonstrate that such moments are infrequent or participants may be choosing not to observe such moments and subsequently replace them with other moments of experience or avoid participating in events that they do not want to discuss with the researchers.

Perhaps most importantly, DES is a method that appears to require high levels of skill to be performed with fidelity. It is difficult to train these skills and challenging to determine the level of skill of specific investigators. Furthermore, neither the participant nor the investigator appear to be in a good position to independently assess their level of

skill at performing DES or the adequacy of their performance in any particular investigation. This is a complex issue that defies a simple solution.

The Present Study

The present study used the Descriptive Experience Sampling (DES) method to explore the inner experience of three individuals with MDD and three individuals BD. Participants were recruited from the Las Vegas, Nevada area. Volunteers who self-reported a diagnosis of MDD or BD were assessed for the presence of those disorders using the Structured Clinical Interview for DSM-IV Axis I disorders (SCID-I; First, Gibbon, Spitzer, & Williams, 1997) and the Center for Epidemiological Studies – Depression Scale (CES-D; Radloff, 1997). Participants who met the criteria for MDD or BD were invited to participate in Descriptive Experience Sampling (DES).

Participants wore a random signal generator (beeper) while engaging in their typical daily activities. When signaled by the beeper, participants were asked to observe their inner experiences. Participants were asked to engage in approximately eight days of sampling spread out over several weeks. After each day of sampling, participants were interviewed by the researcher and faculty supervisors to obtain an understanding of the participants' inner experiences at each sampled moment.

After each interview, the interviewers composed a summary of the participants' sampled moments of experience. The primary investigator and interviewers engaged in a collaborative editing process in order to develop a written summary of the participants' sampled moments that attempts to capture the essence of their inner experience. These written summaries were used to create an individual profile of each participant's inner experience. The investigator also reviewed the sampled moments of the group of

participants as a whole to determine if any of commonalities exist in the inner experience of the participants.

CHAPTER 5

METHOD

Participants

Participants included individuals from the Las Vegas area with a diagnosis of MDD or BD. Participants were recruited through flyers describing the present study and through support groups such as the National Alliance for Mental Illness (NAMI) and Mojave Mental Health. Three volunteers who met criteria for MDD and three volunteers who met criteria for BD were invited to participate in the present study. They were compensated \$10 an hour for their participation with a bonus of \$20 for completing the entire study.

Materials

The informed consent form provided participants with a description of the study including expected risks and benefits of participation. It also included contact information for the primary investigator and the office for the protection of research participants.

The demographic questionnaire included questions concerning a participant's name, address, phone number(s), email address, age, ethnicity, sex, marital status, education level, and employment. The demographic questionnaire also asked participants to indicate when they were first diagnosed with MDD or BD and to list any past and current treatments they have received (e.g., psychotherapy, pharmacological treatment).

The Center for Epidemiological Studies – Depression Scale (CES-D; Radloff, 1977) is a self-report measure in which participants rated the frequency in which they have experienced 20 symptoms of depression (e.g., depressed mood, appetite changes)

during the past week. Adequate internal consistency and test-retest reliability has been demonstrated for the CES-D (Radloff, 1977). The CES-D provides scores ranging from 0 to 60, with higher scores signifying higher levels of depression. There is not a specific cut off score indicating the presence or absence of depression. However, an arbitrary cut off score of 16 has been used and discriminated adequately between depressive patients and non-depressive patients (Radloff, 1977).

The Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1992) asked respondents to indicate the extent to which they are distressed by a broad range of psychological symptoms. Participants rated the symptoms on a five-point scale ranging from 0 (not at all) to 4 (extremely). The SCL-90-R provides nine primary symptom dimensions (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism), a general overview of psychological distress (Global Severity Index), a measure of intensity of the symptoms (Positive Symptom Distress Index), and an overall number of reported symptoms (Positive Symptom Total). High reliability has been demonstrated with a Cronbach's alpha of 0.96 for the Global Severity Index (Schmitz, Hartkamp, Kiuse, Franke, Reister, & Tress, 2000).

The Structured Clinical Interview for DSM-IV Axis I disorders (SCID-I; First, Gibbon, Spitzer, & Williams, 1997) is a semi-structured interview used to make psychiatric diagnoses. The SCID-I includes ten modules which relate to DSM-IV diagnoses. The mood disorders module will be used in the present study. The mood disorders module comprehensively assesses for the presence of major depressive episode, manic episode, hypomanic episode, dysthymic disorder, mood disorder due to a general

medical condition, and substance-induced mood disorder. The administration time for the mood disorders module is approximately 30 to 60 minutes.

A portable, pocket-sized beeper created by Hurlburt (2007) was used to randomly beep participants and alert them to pay attention to their current inner experience. The beeper is a small rectangular box and is equipped with an on/off/volume dial. When activated, the pocket-sized beeper randomly emits a 700-Hz tone through an ear-piece in intervals ranging from 0 to 60 minutes with a mean of 30 minutes. The volume is adjustable, thus allowing alteration for personal preference and background noise levels.

A pocket-sized, 3 X 5 inch notebook was given to participants to record notes about their inner experience when the beep sounds.

Procedure

The primary investigator posted flyers advertising this study in the great Las Vegas community and recruited participants from support groups such as the National Alliance for Mental Illness (NAMI) and Mojave Mental Health. Individuals who were interested in the study were asked to contact the primary investigator by telephone. All volunteers who self-reported a diagnosis of MDD or BD and contacted the primary investigator were invited to participate in a one-hour appointment to determine eligibility. The one-hour eligibility appointment with the primary investigator took place in the Experience Sampling Lab at the University of Nevada, Las Vegas (UNLV). All appointments were conducted individually.

During this appointment, the study was explained to participants. Any questions were answered and participants were asked to provide informed consent. To assess whether participants met criteria for MDD or BD, they were administered the mood

disorders module of the SCID-I (First et al., 1997). They were also asked to complete the demographic questionnaire, CES-D, and SCL-90.

Participants who met diagnostic criteria for MDD or BD on the SCID-I were invited to participate in Descriptive Experience Sampling (DES). Participants who did not meet criteria were compensated for their time and were not invited to participate in any further aspects of the study.

After consenting to participate in DES, including videotaping or audiotaping of the interviews, the participant was given a beeper, an earphone and a 3 X 5 notebook. The investigator demonstrated how to work the beeper including how to turn it on and off, how to adjust the volume, how to plug in and wear the earphone, and how to reset the beeper once it had beeped. The participant was instructed to turn on the beeper during a time of his/her choosing and to then continue on with his/her daily activities. The investigator told the participant that once the beeper is turned on, it would emit a beep sometime within an hour. At the onset of the beep, the participant was asked to recall what was occurring in his/her inner experience. The participant was instructed to jot down notes about his/her ongoing inner experience right at the moment the beep began in the 3 X 5 notebook. It was explained that the purpose of these notes was to help him/her recall the details of his/her experience at the moment of the beep during a later interview. The participant was asked to stop and reset the beeper after each beep and continue this process until a total of six beeps were emitted. In explaining the procedures, the investigator was careful not to give specific, detailed instructions about what to pay attention to at the moment of the beep other than whatever is ongoing in awareness; these

details are left unclear because the investigator did not know what the participant will experience at the moment of the beep.

The investigator also explained to the participant the nature of the co-investigator relationship of DES. The investigator explained that participation involved wearing the beeper approximately 8 days and returning to the lab after each day of sampling for an expositional interview. The purpose of these expositional interviews was to faithfully apprehend and then describe the participant's inner experience at each moment. During the expositional interview, the participant was asked to be open and honest and his/her inner experience and was given the right, at any time, to refuse discussion of sensitive material that may have been captured by the beep. Participants were allowed to terminate their participation in the study at any time and were compensated for their participation.

Prior to the completion of this first appointment, a second appointment was scheduled for an one-hour long expositional interview. The second appointment was scheduled to take place within 24 hours of the collection of beeps.

During the second appointment, a team of DES researchers, including Dr. Chris Heavey, Dr. Russell Hurlburt, and myself interviewed the participant about his/her collected samples until both the interviewers and the participant believed they had as clear an apprehension as possible of the participant's inner experience at each beep. The interviews were videotaped.

The collection of sampled beeps followed by an expositional interview was repeated approximately 8 times or until we believed we had a good sense of the nature of the participant's inner experience. The first day of sampling was considered training and therefore samples from the first day were not used in analyses. After each day of

sampling, the interviewers prepared a written summary of each sampled moments of the participant's experiences.

Analysis of Data

After each expositional interview, the primary investigator and faculty advisors completed a written description of each moment discussed during the interview. The purpose of the written descriptions was to provide an accurate description of what was ongoing in experience at the moment of the beep. The written descriptions were reviewed and revised by the three researchers (Dr. Heavey, Dr. Hurlburt, and me) present during the interview for the purpose of having the written description be as representative as possible of the inner experience present at each sampled moment. At times, we disagreed regarding the degree to which the description accurately matched the participant's inner experience. When a disagreement occurred, we would review the video recording of the interview and would change the written description as needed to match the participant's report.

After completing sampling with each participant, we conducted an idiographic analysis of the inner experience of each participant by reviewing each participant's samples of experience. Participant's moments of experience were examined to determine the features of that individual's inner experience, including salient characteristics and any phenomenon of interest. Throughout this process, we reviewed each sampled moment and sometimes went back and watched the video recordings of the interviews to clarify aspects of the participant's inner experience.

Finally, we reviewed the sampled moments of the group of participants as a whole to determine if any features of inner experience occur commonly across participants. Dr.

Heavey, Dr. Hurlburt, and I engaged in a lengthy reviewing process of the idiographic descriptions of each participant's inner experiences outlined below in each participant's chapter and the features of inner experience that occurred across the participants discussed in the final across-participant chapter.

The following chapters include idiographic profiles of each participant's inner experience. The first three participants discussed below met criteria for MDD. The order that they are listed corresponds to the degree to which they endorsed depressive symptoms on the CES-D (Radloff, 1977) with the first participant having endorsed the fewest depressive symptoms and the final participant having endorsed the most depressive symptoms. The final three participants met criteria for BP. The order that they are listed also corresponds to the degree to which they endorsed depressive symptoms on the CES-D (Radloff, 1977). The final across-participant chapter provides a review of participants as a whole and discusses features of inner experience that occurred commonly across participants.

CHAPTER 6

IDIOPGRAPHIC DESCRIPTION OF DEVON'S EXPERIENCES

Devon is a 26-year old bi-racial male who sampled with us from March to May 2012. Devon met criteria for major depressive disorder as measured by the SCID-I (First, Gibbon, Spitzer, & Williams, 1997). Devon received a CES-D (Radloff, 1977) score of 33, suggesting a clinically significant level of depressive symptoms. He received a Global Severity Index score of 2.29 on the SCL-90-R (Derogatis, Lipman, & Covi, 1973; Derogatis, 1994), suggesting the presence of psychological difficulties. Devon was not receiving any treatment for depression at the time of sampling.

Devon sampled on eight separate occasions, collecting a total of 38 sampled moments. Five of those sampled moments occurred during the first sampling day, which is generally considered a training day and subsequently will not be discussed. After discarding the samples from the first day of sampling, we were left with 33 moments of experience. The following sections provide a description of the salient phenomena that emerged across Devon's samples.

Inner Seeing

Devon experienced inner seeing in all 33 (100%) of his sampled moments. All of Devon's inner seeings were highly detailed and complex. The following sample provides an example of the extreme complexity of Devon's inner seeing. The detail and complexity of this sample is typical of Devon's inner seeings.

Sample 5.3: At the moment of the beep, Devon was innerly seeing himself from a 3rd person perspective looking at himself from slightly above his actual self and to the right. The seen-Devon was making an exaggerated hungry/sick/stomach-

ache expression. He was also innerly seeing his stomach. His stomach seemed to be like an x-ray and Devon saw several other organs. He saw approximately four blue/green/black organs and his stomach. His stomach was pinched together indicating that it was very empty and was slimy on the inside. The seen stomach and the other organs were not accurate portrayals of actual organs - for example, the other organs probably did not correspond to actual bodily organs, and the stomach was not the shape actual stomachs have. Devon was also innerly seeing symptoms of his stomach. For example, when he thought of his stomach as being acidic, he was innerly seeing liquid, green mistiness that suffused his entire inner seeing (that is, was not merely seeing the stomach as acidic). When he thought of gassy, he saw a yellow bubbiness that included the bloop, bloop, bloop sound of bubbles popping, but the bloop, bloop, bloop sounds were not coordinated with the seen bubbles (there were more bubbles than bloops). This inner seeing changed to match whatever stomach symptom he was experiencing including gassy, acidic, growly, and empty. Devon was also feeling his stomach feel empty, gassy, growly, and acidic. Devon was also feeling physical sensations he associated with feeling tired/fatigued. His eyes felt heavy; he had a slight headache between his eyes; his throat felt dry; and he had heart-burn. These physical sensations were amplified as compared to previous beeps.

In this sample, Devon was seeing himself and his stomach in substantial detail. His inner seeing morphed to match the stomach symptom he experienced. This is an example of the typical creative, rich, and detailed nature of all of Devon's inner seeings. The degree of richness and complexity observed in Devon's inner seeings are not typical of other

individuals who experience a high frequency of inner seeing. All of the examples of inner seeing provided in this section will continue to demonstrate the extreme detail and complexity in Devon's inner seeings.

Preoccupation with Facial Expressions and Eyes

In seventeen (51%) of Devon's inner seeing, he was focused on facial expressions and/or eyes. In twelve of these samples, Devon was focused on innerly seeing his own facial expression or eyes. The following provides an example of his preoccupation with his own facial expressions.

Sample 3.5: Devon was fixing the blinker's light on his girlfriend's car. He was reaching his hand down the car's engine. At the moment of the beep, Devon was seeing two things which were both present but were not physically present together. First, he was innerly seeing himself trying to fit his hand in the car's engine. He was seeing this from a 3rd person perspective; he could see the driver's side of the car (a silver/gray BMW) and himself trying to reach his hand in the car's engine. He was making an exaggerated face because his arm was stuck. Devon said everything he was innerly seeing was the same as how it looked in reality except for the exaggerated look on his face and the fact that his hand really was not stuck in the engine. Second, he was innerly seeing the back of his head and the words, "I hope I know what I'm doing" typed in white letters on the center of the back of his head. The letters were located somewhere between his hair and his skull. He was actually feeling a tickle sensation where the words were on the back of his head.

In this sample, Devon was innerly seeing himself and the focus of him seeing himself seemed to be on the exaggerated look on his face which seemed related to his arm being stuck. This was a distortion from reality in that his hand was actually not stuck and Devon did not think he was actually making the exaggerated facial expression.

Devon also had five sampled moments that involved him being preoccupied with someone else's facial expression or eyes. The following provides an example of him being concentrated on someone else's facial expression.

Sample 3.4: Devon was wondering if Michael Jackson [while he was alive] still got allergies [despite his nose surgeries]. Devon was innerly seeing a background image of Michael Jackson's face. Michael Jackson was older in the image and had straight hair and lighter skin. This background Michael Jackson face was much larger than real size, about floor to ceiling size. At times, Devon was zooming-in on Michael Jackson's nose. In the front of the background, on the right side, Devon saw another Michael Jackson. This was a younger Michael Jackson in which he had curly hair. He was striking a dancing pose. He was 2-dimensional (i.e., flat), appeared to be floating and was moving slightly. On the left side were the words, "Does Michael Jackson still get allergies?" These words were in paragraph form looking like a news column. It was as if it was a full news column of words, but the only words present were, Does Michael Jackson still get allergies? The letters were white and in Times New Roman font. The column of words was also moving but not in the same floating-nature as the Michael Jackson picture.

Devon also had one sample that involved him both being preoccupied by his own and someone else's facial features.

Sample 3.1: At the moment of the beep, Devon was innerly seeing Bruno Mars and himself (seen-Devon) sitting next to each other in some arena. Bruno Mars was on the left and was about to play the guitar. Actual-Devon was hearing Bruno was playing bits of his hit songs, skipping back and forth between each one. Seen-Devon had an impatient expression on his face. Seen-Devon was innerly saying, "*Do I really look like that fool?*" Actual-Devon was innerly hearing Seen-Devon innerly say these words and he was thinking them, but the hearing and the thinking of them were not in sync, Actual-Devon was also changing his visual focus, moving back and forth between Seen-Devon and Bruno Mars, seeing close-ups of each one's face to try to compare how much they look alike.

In this sample, Devon was focused on both his and Bruno Mars' appearances. Similar to in other sampled moments, the Seen-Devon's facial expression was exaggerated to demonstrate an impatient expression.

Multiple Inner Seeing

Ten (30%) of Devon's samples contained more than one inner seeing. Four of those multiple inner seeing samples involved him seeing the same event from two different perspectives, as if Devon had two cameras placed in different locations but aimed on the same event. The following sample provides an example of this phenomenon.

Sample 5.2: Devon was sitting in his car staring at a clear plastic bag he got from the police when he had been arrested for a traffic violation. The plastic bag had contained his possessions following his arrest. At the moment of the beep, Devon was innerly seeing himself from two different perspectives. He was seeing himself from the third-person perspective from the back/left getting handcuffed by a police officer. Devon saw the officer putting the handcuffs on his wrists. He could also see the police car in front of him. Devon was also seeing himself from the third-person perspective from the front. He saw himself making a silly face as if indicating to passersby that he didn't know what the police were doing. The Seen-Devon was wearing a green shirt and blue sweats. Devon was also feeling a sense of relief which he experienced as a soothing massage of cool, clean air across his chest moving from left to right. [Devon's relief was related to the fact that he had been arrested for not having proof of insurance while he was driving; but he now had his proof of insurance in his car in the bag that had contained his possessions while he was in jail, the same bag he was staring at in this moment.] Devon was also feeling physical sensations he associated with feeling tired/fatigued. His eyes felt heavy; he had a slight headache between his eyes; his throat felt dry; and he had heart-burn. These sensations were not as salient as they were in the first beep. It was as if the feelings were the same as in previous beeps, but the "volume had been turned down" on them.

In this sample, Devon had two separate inner seeing which were both aimed at a single event, his being arrested. He was seeing himself both from the front and from the

back/left, as if there were two cameras aimed at him while he was being arrested and he was innerly seeing the feed of those cameras simultaneously.

Two of Devon's multiple inner seeing samples involved three or more inner seeings. The following provides an example of one of those samples.

Sample 8.4: At the moment of the beep, Devon was feeling anxious/worried about his car, which was broken down and had been parked in front of Smith's for several days. He had two related and one separate inner seeings. First, he was seeing his car sitting out front of Smith's. He was seeing his car from the perspective of being close to the dent on his fender and was seeing Smith's beyond the car. He was also seeing a birds-eye perspective of his car sitting out front of Smith's. His car was closer to the back of the parking lot than to the front, and was the only car in the parking lot. In front of Smith's were 10-15 employees wearing red shirts and black pants. The employees had no facial features and looked cartoonish in that they all had the exact same body except the females had breasts. The male employees had men-hair that was exactly the same as the other men and the female employees had female-hair that was exactly the same as the other females. Devon was also seeing an image of himself sitting on the bus (a replica of what he was actually doing). He was seeing it from the perspective of in front of him to the right.

In this sample, Devon was innerly seeing many inner seeing simultaneously. Two of those inner seeing involved seeing his car parked in front a Smith's grocery store from two different perspectives. He was also seeing an unrelated image of himself sitting on the bus, which was what he was actually doing at the moment of the beep.

Distorted Physical Shape and Size and Exaggerated Inner Seeing

Fifteen (45%) of Devon's inner seeings included some distortions in physical size or shape. Similarly, five (15%) of his inner seeings included some aspect that was exaggerated (e.g., exaggerating the look of distress on his face), for a total of 20 physically distorted and/or exaggerated samples. Devon distorted and exaggerated a myriad of objects within his inner seeing including but not limited to facial expressions, backgrounds, and perceptual properties. Devon frequently distorted and/or exaggerated his or someone's facial expression, size, or eyes. In six (18%) samples that involved physical distortions and in four (12%) samples that involved exaggerations, the object that was distorted/exaggerated was the innerly Seen-Devon himself. In six (18%) samples that involved physical distortions and in one (3%) sample that involved exaggerations, the object that was distorted/exaggerated was another person. In three (9%) samples that involved physical distortions, the object that was distorted was an object (e.g., a traffic light).

The majority of Devon's samples that involved some distortion of size or shape or exaggeration of a person involved a distortion/exaggeration of the person's head or facial expression. A few of these distortions and exaggerations made the person look cartoon-like and denoted some emotional significance. For example, in Sample 8.4 described previously under the Multiple Inner Seeings subsection, Devon was innerly seeing employees of Smith's standing out front of the store. The employees did not have facial features and looked cartoon-like with all of the employees having the same body and either female hair or male hair. The following sample provides another example of creative physical distortions of facial expressions.

Sample 8.3: Devon was waiting for the bus at a bus stop. At the moment of the beep, he was innerly seeing himself sitting, hunched over, and looking to his right (when the bus would actually come from the left of him). He was seeing himself from the perspective of someone directly to his right. In his inner seeing, his head was distortedly larger than it should be (approximately twice as large as it is in reality). The hunch in his back was also larger than it was in reality, although not as enlarged as his head. Devon's face looked like gravity was pulling it down; it felt heavy and it looked like he did in his inner seeing and concerned about avoiding the dirt on the stop and whether he was sweating through his gray shirt and thinking, I hope I don't look like that. There were no words or other experiential aspects of these concerns/thinkings; it was not clear if this was one overarching concern with several aspects or more experientially distinct. They seemed to be more cognitive than emotional though we could not be confident about that. He was also physically feeling uncomfortable because of the position he was in.

In this sample, Devon was innerly seeing himself. However, his image of himself was distortedly larger than it should be. He also had an exaggerated hunched back and his face looked like it was being pulled down by gravity. Devon was not merely seeing himself; rather he was seeing a cartoon-like, negatively exaggerated version of himself.

The following provides an example of an inner seeing that contains physical distortions of someone other than Devon. This sample also provides an example of distorted perceptual properties and background.

Sample 2.4: At the moment of the beep, Devon was innerly seeing Dr. Hurlburt, Dr. Heavey, and Nellie sitting like they do during the interviews. He was seeing this from a first-person perspective, as if he was in the process of being interviewed by them. Devon was innerly seeing Dr. Hurlburt and Dr. Heavey looking disappointed that Devon had collected his beeps while driving and Nellie looking “happy-go-lucky.” There was more emphasis placed on seeing Dr. Hurlburt and Dr. Heavey as compared to seeing Nellie. Dr. Hurlburt looked cartoon-like with his head in a squared shape. Dr. Hurlburt was wearing khaki pants and a plaid shirt. Dr. Heavey looked more similar to how he looks in reality (not cartoon-like) and was wearing a button down shirt and dress slacks. Devon did not know what Nellie was wearing as she was not central in his inner seeing. Devon was also seeing parts of the interview room (e.g., the camera and the walls), but it did not seem to scale, rather everything seemed smashed together. He also saw Dr. Hurlburt closer in proximity to him than Dr. Heavey and Dr. Heavey closer in proximity to him than Nellie. [In reality, Dr. Hurlburt is closer to him during the interviews and Dr. Heavey and Nellie are an equal distance from him.] The images of Dr. Hurlburt, Dr. Heavey, and Nellie seemed to be coming towards him, whereas the surrounding room came and went in his inner seeing. The words, “Sorry guys, wasted your beeps” were also present; however, this was less salient in his experience.

In this sample, Devon was innerly seeing a distorted, cartoon-like representation of Dr. Hurlburt. Similarly, he altered the geometric properties of the room making things seem closer to him and smashed together. There was also movement to his images.

Many of Devon's physical distortions and exaggerations were of his or someone else's facial expression or eyes.

Sample 6.1: Devon had just finished working out where he had heard a song that had a saxophone playing. Devon was now sitting in his car. At the moment of the beep, Devon was innerly hearing the song with the saxophone. He was also innerly seeing a man playing a saxophone. The man was wearing a blazer that looked tie-dye with red/blue/yellow colors. The suit had big black cuffs. The man was also wearing pleated pants. Devon was not seeing the man's eyes. In place of his eyes were black regions. Devon understood himself to be creating an image of a "cool" saxophone player, but when he recalls saxophone players of his acquaintance (including his father and other well-known players), their eyes do not look cool—they look bulging or intense. Devon omitted seeing the eyes, perhaps as a result of them not generally looking cool. The man was playing the saxophone in a dim night club with lights behind him. This inner seeing was a still-frame. Devon was also innerly seeing himself sitting thinking about the song. The seen-Devon had a bored look on his face and was sitting in his car. That is, he was innerly seeing exactly what he was doing in real life—an exterior perspective on himself, so to speak—except that his seen expression was more bored than his actual expression probably was, and that the front of the car was missing (that is, the perspective was from outside the windshield, but the windshield itself was not seen, even though the rest of the car (door, back seat, etc.) was seen. [The actual-Devon was not feeling bored, although the seen-Devon was seen to be bored.] Devon also saw the ear piece used for this

experiment on his ear. Devon could see from his mouth up (he could not see his chin or neck) but could see his shoulders even though physically this would be impossible.

In this sample, Devon has distorted the saxophone player's eyes and he has exaggerated/changed the expression on the Seen-Devon's face. The perceptual properties of Devon's head and shoulders were distorted as well as the features of his car.

Devon also had other samples in which he distorted inanimate objects. In the following sample, Devon was innerly seeing a perceptually distorted traffic light.

Sample 2.3: Devon was driving. At the moment of the beep, he was innerly seeing a red traffic light. He was seeing the light very close to himself, perhaps a foot or so away, and off to his right side and about a foot or so above him. The light looked to be very large (~8 feet or more tall and 5 or 6 feet across). The red light was the largest, about 5 feet in diameter, with the yellow light several inches smaller and the green light several inches smaller again. Devon himself did not use feet or inches in his descriptions; in fact, even when feet and inches were suggested to him, he did not assent. The red light was "this far", spreading out his arms; he said, "I could sleep in it" several times. The red light was lit, whereas the yellow and green lights were not. The covers around each light and the steel of the traffic light were green. He could also see part of the pole the traffic light was attached too and a blue sky behind the traffic light. He could also barely see a hint of a concrete bridge behind the traffic light. The red light was what he was looking for so he could stop driving and write notes about the previous beep, which occurred only a few moments earlier.

In this sample, Devon was innerly seeing a red light. However, the perceptual properties of the red light were distorted such that the red light was much bigger than in reality and larger than the yellow light, and the yellow light was larger than the green light.

Elaborate and Incongruous Backgrounds

In approximately 13% of Devon's samples, his inner seeing contained a background was elaborate or was incongruous to the central focus of his inner seeing. For example, in Sample 2.3 discussed previously, Devon was innerly seeing a red traffic light. However, in the background of his inner seeing, Devon was seeing a blue sky and a hint of a concrete bridge behind the traffic light. In this sample, Devon was focused on the red light, in fact, in reality he was trying to find a red light. Yet, he also saw a concrete bridge and a detailed version of the sky. The background in this inner seeing appeared elaborate. The following sample provides another example of an elaborate and incongruous background in an inner seeing sample.

Sample 2.5: Devon was in the process of getting out of his car. At the moment of the beep, he was innerly seeing Russell Peters, a stand-up comedian, doing a stand-up routine. He could see Russell Peters holding a microphone and nodding his head in an exaggerated manner. Devon saw a spotlight on Russell Peters and could see his shadow behind him. Devon also saw some of the audience in front of Russell Peters. Devon saw a rectangular edge/border around what he was seeing, similar to a screen that goes around a YouTube clip. He was seeing the screen towards his lower right side. The surround to the screen changed: sometimes there was nothing present and sometimes there was a computer around it. At the time of the beep, Devon was not seeing beyond the screen. Devon could

also hear the comedian as well as the audience react to the comedian's act. Devon believes what he was innerly seeing was the same or very close to what he had actually seen on YouTube.

In this sample, Devon was innerly watching Russell Peters do a stand-up routine. He also saw an elaborate background/border which was similar to a screen that goes around a YouTube clip. This border also kept changing. In this sample as well as others, it seems as if the central aspect of Devon's inner seeing may be separated and not always coordinated with the background/border of the inner seeing. The incongruity between Devon's background/border from the central aspect of his inner seeing suggests that the foreground of central aspect of his inner seeing is constructed by one process while the background/border is constructed by another.

Seeing of Self

In 16 (48%) of Devon's samples, he was innerly seeing an image of himself. In 13 (39%) samples, Devon was innerly seeing himself doing what he was actually doing in reality. However, the number of samples that involved him innerly seeing himself doing what he was doing may be much higher than 39%. During the last interview, Devon stated that he always sees himself doing what he is doing but that he did not describe seeing himself at each moment of experience because he took it for granted that seeing himself would be expected and therefore not noteworthy in the same way that he did not think it was important to specify that he was speaking English.

One example of him seeing himself doing what he was doing was Sample 8.4 discussed under the Multiple Inner Seeing subsection. In this sample, Devon was innerly seeing his car parked outside of a Smiths grocery store with employees of the store

standing out front. In addition to the inner seeing related to him seeing his car, Devon was also seeing an image of himself sitting on the bus and this inner seeing was a replica of what he was actually doing. He was seeing it from the perspective of in front of him to the right. Sample 6.4 provides another example of this phenomenon.

Sample 6.4: Devon was resting on a couch. At the moment of the beep, he was innerly seeing exactly what he was doing in real life - sitting on the couch. He saw himself from the upper, right perspective. His inner seeing appeared to be an accurate portrait of what he was actually doing. Devon could only see himself. He was not seeing the couch he was sitting on. Devon was also to a lesser extent feeling the air conditioning as it blew cool air across his chest. This sensation was felt by the real Devon, not the seen-Devon.

As was mentioned previously, some of his inner seeings of himself were physically distorted or exaggerated in some aspect, such as negatively enhancing aspects of Devon's facial expression. Sample 3.5, previously discussed under the subsection Preoccupation with Facial Expression and Eyes, provides an example of this phenomenon. In this sample, Devon was fixing his girlfriend's car. At the moment of the beep, he was innerly seeing himself fixing the car the same as how it likely looked in reality except for an exaggerated look on his face suggesting that his arm was stuck in the car's engine and the fact that his hand really was not stuck. His exaggerated facial expression and imagining his arm being stuck in the car could be perceived as him having some negative self impression or concern regarding how people perceive him. For example, he was making himself look worse than he did in reality. He was also

experiencing a thought at the moment of the beep of, “I hope I know what I’m doing.” Envisioning his arm being stuck in the car’s engine may represent his self-doubt.

In seven additional samples, Devon seemed to be experiencing concern about how others would perceive him. For example, in Sample 8.3 discussed previously under the subsection Distorted Physical Shape and Size and Exaggerated Inner Seeing, Devon was experiencing concern about how he appeared to other people. He was innerly seeing himself waiting for the bus. However, he distorted and exaggerated the physical shape and size of himself (e.g., hunched back, face pulled down by gravity) making himself look worse than he actually does. He was also thinking at the moment of the beep that he hoped that he did not look like his inner seeing of himself.

Another example of Devon’s preoccupation with how he looked to others was in Sample 5.2 which was described previously under Multiple Inner Seeings subsection. In this sample, Devon was innerly seeing himself being handcuffed by a police officer from two different perspectives. In one of his inner seeings, he was seeing himself make a silly face as if indicating to anyone seeing him be handcuffed that he did not know what the police were doing. Devon’s inner seeing of himself may have conveyed a notion of being concerned about what others would think of him. There were also several instances when Devon was seeing himself and was worried that he might be sweating through his shirt, including beep 6.5 discussed below in the Inner Seeing of Words section.

Inner Seeing of Words

Devon had seven (21%) inner seeings that involved innerly seeing words. The following provides an example of this phenomenon.

Sample 4.2: Devon was looking at himself in the mirror and fixing his hair line. At the moment of the beep, Devon was comparing his hair line to Drake's, a musician, hair line. Devon was innerly seeing himself from the chest up with a front profile. He was also seeing Drake behind him with his hands up as if pointing to his hair line. The image of Drake was flat, not 3-dimensional, whereas the Seen-Devon was 3-dimensional. While the Seen-Devon was in front of Drake, the Seen-Devon was not blocking the view of Drake. Behind Seen-Devon and Drake was a black background with waves of various colors moving in beat with Drake's song, "They Know." Devon was also innerly hearing the song, "They Know." Devon was mostly hearing the beat of "They Know" with occasionally the words "they know, they know, they know." Devon was also seeing many phrases of words in white, typed lettering. He was also reading and innerly speaking these words. The words, "If my hair line ever recedes, he should donate me some of his hair line" were present at the moment of the beep. Devon also was seeing flashes of Drake interviewing people who were seeking hair-line donations.

In this sample, Devon was seeing many phrases of words. Most prominent among the words he was seeing were the words, "If my hair line ever recedes, he should donate me some of his hair line." In addition to seeing these words, Devon was reading and innerly speaking them at the same time that he was seeing them. The following provides another example of Devon innerly seeing words.

Sample 2.2: Devon was driving to the store. At the moment of the beep, he was innerly saying, "driving" in a low voice with dramatic emphasis. He believes he

was innerly saying “driving” as opposed to innerly hearing “driving”; however, he said that it was difficult to make that distinction because he believes he was both saying and hearing it. Simultaneously, he was innerly seeing “driving” in white letters written similar to the words in *Tales From The Crypt*. The letters appeared one at a time in sync with his pronunciation of the letters in his innerly saying “driving.” Once the letters were all present, the letters in the word moved up and down independently. He was seeing the word “driving” in front of his as part of what he was actually seeing (e.g., the road, cars). His innerly seeing “driving” appeared like subtitles, towards the bottom left of his visual field but in larger letters than what is typically used in subtitles. The word “driving” appeared near the windshield in proximity to him.

In this sample, Devon was innerly seeing the word “driving.” The letters in the word appeared one at a time then they moved up and down independently once all the letters were present. The letters appeared in sync with him innerly speaking them. In this sample, his inner seeing of a word was imposed onto what he was actually seeing.

Devon also had some samples that involved innerly seeing words with unusual characteristics.

Sample 6.5: Devon was taking a walk. At the moment of the beep, he was innerly saying to himself, “man it’s hot” He was also innerly seeing himself walking although the seen walking was not in sync with the actual walking. The seen-Devon’s face was sweaty with sweat squirting horizontally off his face in a clearly exaggerated manner, but this didn’t strike Devon as exaggerated in his seeing. The Seen-Devon’s face also had an exaggerated way-too-hot expression.

Behind the Seen-Devon were big, tall trees with “man it’s hot” written across the canopy of the trees. The words were in block white letters and were backwards and upside down. Devon felt the heat to be coming from the words or at least the direction of the letters. Devon was also thinking/feeling concerned about whether he was sweating through his shirt – that the dark sweat could be seen in his chest and armpits – and if he was, it would be embarrassing. This concern was at least partially a feeling.

In this sample, Devon was innerly seeing the words “man it’s hot” and these words were written across a canopy of trees, backwards, and upside down. His inner seeing of the words was very detailed and complex. Devon was experiencing the heat as radiating down from the words, “man it’s hot.” This sample also provides an example of another incident in which Devon was concerned about what he looked like to other people and involved exaggerations of the seen-Devon’s facial features.

Incomplete or Uncoordinated Inner Seeing

Devon had ten (30%) sampled moments that involved inner seeing that in some way seemed compromised or incomplete. For example, he had inner seeings that were dissolved, blurry, incompletely articulated, or foggy. Several of these samples have been discussed previously. Namely, Sample 6.1 was discussed in the Distorted Physical Shape and Exaggerated Inner Seeing subsection. In this sample, Devon was innerly seeing himself sitting in his car. However, Devon could see from his mouth up (could not see his chin or neck) but could see his shoulders even though physically this would be impossible. This sample seemed in some way incompletely articulated.

Devon also had two samples that involved him seeing aspects of his inner seeing in 2-dimension and other aspects of his inner seeing in 3-dimension. One of these samples, Sample 4.2, was discussed previously in the Inner Seeing of Words subsection. In this sampled moment, Devon was innerly seeing a flat, not-3-dimensional image of Drake, a musician. Simultaneously, he was innerly seeing a 3-dimensional version of himself. This sample also seemed in some way incompletely articulated in that his two inner seeing were not consistently seen in the same dimension. Sample 3.4 also involved inconsistent dimensional inner seeing. This sample was discussed in the Preoccupation with Facial Expressions and Eyes subsection. In this sample, Devon was innerly seeing two images of Michael Jackson one of which was 2-dimensional and the other was 3-dimensional. The two images were uncoordinated or one of which may have been incomplete such that a few seconds later both images could have been 3-dimensional.

The following provides another example of a sample that involved inner seeing that seemed incompletely articulated. .

Sample 5.1: At the moment of the beep, Devon was thinking about studying, which involved partially or entirely innerly seeing a book tilted away from him. The book was an unknown, hardback book. It was five or six inches thick and had a vintage brown leather cover. The book had white pages and a ribbon sticking out of the middle of the book marking a page. Devon's inner seeing was foggy/see-through/intangible. The book fluctuated between being foggy/see-through/intangible to being solid-looking. The word "study" was also somehow present. It was not written or spoken; Devon felt the word in some way he could not specify, but he seemed confident that the word "study" itself was somehow

present—that is, it was not merely the idea of study that was present. Devon was also feeling a physical sensation associated with a sense of urgency to study. His heart was racing and his legs were moving or squirmy. Devon was also feeling physical sensations he associated with feeling tired/fatigued. His eyes felt heavy; he had a slight headache between his eyes; his throat felt dry; and he had heartburn.

In this sample, Devon's inner seeing fluctuated between being foggy/see-through/intangible to being solid-looking. This inner seeing could have been incompletely articulated for various reasons. For one, it may be that a few seconds after the beep the entire aspect of his inner seeing would be more clearly articulated such that the moment of the beep caught the inner seeing in the process of forming or coming together. Alternatively, it is possible that the inner seeing was incompletely articulated intentionally in the same way that when we talk we sometimes abbreviate language to articulate what we want without fully forming the words/phrases. The following is another example of an inner seeing that seemed transparent.

Sample 4.3: Devon was driving. At the moment of the beep, he was innerly seeing his girlfriend in the sky. She was transparent and see-through. He was seeing her from the chest up and she had her arms crossed across her chest. She also had an angry/pouty face. Her hair was moving in the wind. He was also thinking, *the weather is just like my girl's mood, it keeps changing*. He was unsure if this thought was present in words. He was also physically feeling hot and cold which he described as uncomfortable. His hands/feet felt cold and his chest/neck felt hot. He also was irritated regarding his physical discomfort. He

described his irritation as itching on his neck, genital area, and areas in which his clothes were tight on his body. He also was fidgety, which may have been part of the irritation.

In this sample, his inner seeing was transparent and see-through. There could be several reasons why his inner seeing was incompletely articulated. First, his inner seeing being incompletely articulated could be intentional. For example, it could be his girlfriend being transparent could be related to the inner seeing of her being imposed on the sky and his real world. It could also be a creative or artistic aspect of his inner experience. Second, the incompleteness of his inner seeing could be related to how his inner seeings are constructed. Similar to what was discussed in the Elaborate and Incongruous Background section, it could be indicative that aspects of his inner seeings are being constructed by separate processes and those processes do not always coordinate congruently.

Divided Self

Devon had two (6%) samples that involved experiencing two origins or locations of experience. In these samples, Devon was innerly seeing himself. Devon's inner experience consisted of his experience of something (e.g., innerly seeing himself) and an experience that seemed to originate at his inner seeing of himself (e.g., the seen-Devon felt a sensation). These experiences are more than him just innerly seeing himself; rather they involve the seen-Devon having experiences of his own.

Sample 4.4: Devon was pushing his car because it does not go into reverse and he needed to get out of a parking space. At the moment of the beep, he was innerly seeing three things. First, he was innerly seeing himself pushing his car up a hill

(in reality, Devon was not pushing his car up a hill). He was also seeing the seen-Devon's legs shake as he tried to push the car (in reality, Devon's legs were not shaking). He also saw the words, "*You are not worthy*" in big, solid, strong, weathered white letters. He emphasized that these seen words were known to be very strong and that they meant he is only a watered-down version of his pop (father). The second thing he was innerly seeing was his father pushing a large car from the end of the vehicle. (He wasn't sure if it was the front or the back end.) Devon was seeing his father from the perspective of a young boy watching his father push the car. He could see trees in the background and he knew what he was seeing was in Philadelphia. His father was seen to be easily pushing the car (in distinct contrast to the difficulty Seen-Devon was having). The third thing Devon saw was from the perspective of the seen-Devon's (from the first inner seeing) thoughts. The Seen-Devon was innerly seeing Devon's father standing with his arms crossed on a hill. He also saw the words "*You are not worthy*" with this inner seeing. The words were not big, solid, strong, and weathered like in the first inner seeing. They were white letters but did not have any depth or mass to them.

In this sample, Devon's experiences contained two origins of experience: Actual-Devon and the Seen-Devon. Actual-Devon was innerly seeing two things and the Seen-Devon was innerly seeing something as well. We call this phenomenon divided self. This sample also provides another example of Devon innerly seeing words and those words having unusual characteristics (i.e., strong, weathered). The following is the other sample Devon had that involved a divided self experience.

Sample 3.2: Devon was washing the dishes. At the moment of the beep, he was innerly seeing himself sitting in a chair in a room that was dimly lit. He was seeing himself from an upper right angle. His forehead and eyes were distorted to look larger than they actually are. His mouth/chin looked slightly smaller than normal. His inner seeing was slightly shaking in a similar manner of watching something filmed by a nervous/shaking cameraman. Devon was also innerly singing along to the Bruno Mars song, *The Lazy Song*. He innerly heard the actual song sung by Bruno Mars as well as himself singing the same song in a monotone voice and Seen-Devon singing the song in a somewhat less monotone, more on key voice. The three versions of the song he was hearing were in sync with each other.

This sample is less clearly an example of divided self. However, it is possible that there are also two origins of experience: Actual-Devon and Seen-Devon. Devon was singing along to the song as was Seen-Devon.

Preoccupation of Bodily Functions

Seven (21%) of Devon's samples involved some focus on bodily functions (e.g., sweat). Five of the seven samples focused on his bodily functions, whereas, two of the seven samples were focused on someone else's bodily functions. We have already discussed three of these samples. Samples 6.5 discussed under the Inner Seeing of Words subsection and Sample 8.3 described in the Distorted Physical Shape and Size and Exaggerated Inner Seeing subsection involved a concern over the presence of sweat. Sample 5.3 also described in the Inner Seeing section involved Devon innerly seeing his

stomach and experiencing symptoms of a stomach ache. The following sample provides another example of Devon's preoccupation with bodily functions.

Sample 2.1: Devon said that he has been having problems with allergies and had just sneezed before the beep. At the moment of the beep, he was innerly seeing himself in the middle of sneezing. He saw himself in third person as if he was standing towards the right side of himself. He could see his arms stretched out, his face in a "sneeze" face, and wet sneeze particles flying through the air. He could also see a downtown neighborhood behind him. He believes this neighborhood is a street by his house. Devon's inner seeing was in high definition, it appeared clearer and more vibrant than what he typically sees. Also in his experience, but less salient, was a physical sensation of having to/preparing to sneeze.

In this sample, Devon was innerly seeing himself sneeze and with wet sneeze particles flying through the air. Consistent with what was discussed previously, Devon's inner seeing seemed to involve a component of being concerned about what he looks like to others.

Experience of Music

Two (6%) of Devon's 33 samples involved the experience of music. These experiences are more than just hearing or listening to music; rather he was experiencing the music visually and auditorily.

Sample 2.6: At the moment of the beep, Devon was innerly hearing an orchestrated song. He was also innerly seeing a foggy black color that had some movements to it (like ambient wave). When the melody played, Devon innerly

saw white/gray spots appear on the black background. He described the spots as being similar to when you touch a plasma TV screen and one's finger leaves an indentation and changes the color of the background briefly. The white/gray spots would appear, spread out/grow (similar to ripples in a body of water when something drops into the water), and disappear. The white/gray spots appeared in sync with the melody. They did not appear in a linear fashion, but seemed to be on a path. Devon didn't know what that path was. Devon was also gesturing his finger in sync with the melody of the music. He was experiencing the physical movement of his finger and was also experiencing a finger moving in the same pace/manner in his mind. Devon's inner seeing appeared to be vintage or fuzzy. He described this as him not using his inner eyes as much than he was paying attention more to what he was hearing than what he was seeing.

In this sample Devon was innerly hearing an orchestrated song and was innerly seeing something unique and synchronized with the music.

Sample 7.1: Devon was playing a song he was remembering on the piano. At the moment of the beep, Devon was innerly seeing/hearing the song he was remembering. He saw the song as a transparent green space, like a green window. The green was a shade slightly lighter than the color of grass. In front of the green space, Devon saw two palm trees one on either side. Behind the green space, Devon saw evergreen trees which were the same shade as the green space making them unclear. There were dots a darker shade of green popping up on the green space in sync with pitches/notes of the song as they were played by the xylophone. These dots appeared right to left as the song progressed and

corresponded to hearing the xylophone notes/sounds. The dots appeared from right to left on the green space. Devon was also innerly hearing the song. The song had a vocal to it, but Devon was more focused on the melody. He was playing the piano to match the song. He was also feeling physical weakness in his fingers, specifically his right hand pinky and 4th finger. He was also feeling frustrated which he felt manifest in his chest and forearms. He was also feeling physically hot; he was unsure if that was related to feeling frustrated. [In the retelling, it seemed strange to him that there would be palm trees and evergreen trees, but that strangeness was not part of the experience at the moment of the beep.]

In this sample, Devon was playing a song on the piano, innerly hearing that song, and innerly seeing that song. His experience of the song was visual, detailed, and complex. In both samples. Devon's experience of the music went beyond just hearing or listening to it. Rather, his experience of music was manifested visually in a very detailed and complex manner.

Sensory Awareness

Sensory awareness occurred often in Devon's samples. Devon's sensory awarenesses encompassed a variety of sensory modalities. None of Devon's sensory awareness experiences appeared to be the salient feature of his experience; rather they all seemed to be less salient than inner seeing facets. In fact, many of them were embedded within his inner seeing. The following is an example of one of Devon's sensory awareness experiences.

Sample 8.5: At the moment of the beep, Devon was feeling anxious/excited about his upcoming insurance exam. He was experiencing anxiousness/excitedness physically in his chest. He was also innerly seeing himself sitting at a desk taking the exam. He saw himself from a right, profile perspective. The Seen-Devon had his right hand on the computer mouse and his left hand resting on the table. The Seen-Devon was wearing a black shirt and dark blue jeans. The Seen-Devon had a slight smile on his face. Devon was also smelling the air conditioning in the testing room and experiencing the pleasant temperature of the testing room. The Seen-Devon may have felt nervous, although it was unclear if feeling nervous was a part of the Seen-Devon's experience or if Devon knew that the Seen-Devon was nervous. Devon was also seeing another image of himself sitting on a bus (a replica of what he was actually doing). The Seen-Devon-2 was looking out the window of the bus. The Seen-Devon-2 was like Devon was in reality, except his head did not look like it was attached to his neck, but to his shoulders instead.

In this sample, Devon was drawn to the smell of the air conditioning and the feel of the pleasant temperature of the testing room. This aspect of his experience was purely sensory in that he was engrossed in the sensory aspects and was not aware of the any meaning or interpretation regarding the sensory experience.

Many other samples discussed previously had involved sensory awarenesses. The following are a few examples: Sample 2.1 discussed under the subsection Preoccupation with Bodily Functions contained a sensory focus on his seen-self making a sneeze face and flying sneeze particles, sample 4.2 discussed under the subsection of Inner Seeing of Words contained a sensory focus on his seen-self and Drake's hair line, and Sample 6.5

discussed under the subsection of Inner Seeing of Words involved a sensory focus of sweat on his seen-self and feeling heat.

Feelings

Devon had one (3%) sampled moment that involved a feeling. He had several other sampled moments that involved experiences that may or may not have represented feelings. These experiences were difficult to understand for a few reasons. First, they were usually less salient in his experience as compared to his inner seeing. Second, they were frequently associated with multiple bodily sensations which were seemingly disconnected and experienced as separate strands of experience. In those samples, it was unclear if Devon was experiencing an emotional experience or rather if it was an experience of physical sensations that he may have labeled with an emotional word.

The sampled moment that clearly involved an emotional experience was Sample 8.5 discussed in the Sensory Awareness section. In this sampled moment, Devon was feeling anxious/excited about his upcoming insurance exam. He experienced the anxiousness/excitedness physically in his chest. In this sample, Devon was also innerly seeing himself. The Seen-Devon also may have had an emotional experience of nervousness.

The following is example of a sampled moment that involved a complex experience which may or may not have involved a feeling.

Sample 6.3: Devon was looking for a pen. At the moment of the beep, he was feeling frustrated/annoyed/upset which he described as an “are you serious?” feeling. Part but not all of his feeling of frustration involved feeling itchy all over his body, especially on his face and head and hot. He described the itch feeling as

if spikes were coming out of his body and scratching his skin from the inside. Devon also felt hot all over his body, especially in his lower back. Devon also felt sweat building at his temples and armpits. Devon was innerly seeing himself look for a pen. His inner seeing was exactly of what he was doing in real life. He was seeing himself from the upper, right perspective. Devon saw his whole body. He also occasionally saw his face close up, but that was not present at the moment of the beep.

In this sample, Devon may have felt frustrated/annoyed/upset which was associated with complex and hyper clear bodily sensations (e.g., itchy as if spike were coming out of his body). His experience did not involve a singular bodily sensation, rather it involved multiple, seemingly disconnected bodily sensations. This particular sample is typical of Devon's samples which suggest the presence of a possible emotional experience. This sample may have involved an emotional experience associated with multiple, hyper-clear bodily sensations, or it may have involved multiple, hyper-clear bodily sensations that he labeled as "frustrated/annoyed/upset." It also possible that this may be an entirely distinct phenomenon of experience.

Inner Speaking and Inner Hearing

Five (15%) of Devon's samples contained inner speaking. Four of the inner speaking samples involved both the experience of innerly speaking and innerly seeing of the same words. Dave experienced inner hearing in six (18%) of his samples. Five of the six inner hearing samples involved innerly hearing music.

Many of Devon's samples that involved inner speaking have been discussed previously. For example, sample 2.2 discussed in the Inner Seeing of Words subsection

involved innerly saying “*driving*” in a low voice with dramatic emphasis. He was also seeing the word “*driving*” written in white letters in a font similar to the words in *Tales From The Crypt*.

Devon had two samples that included both inner speaking and inner hearing. One of these samples, Sample 3.1, was discussed in the Preoccupation with Facial Expressions and Eyes subsection. In this sample, Devon was innerly seeing himself. The Seen-Devon was innerly saying, “Do I really look like that fool?” The Actual-Devon was both experiencing the Seen-Devon innerly speaking and was simultaneously innerly hearing the Seen-Devon.

Another sample that involved both inner speaking and inner hearing was sample 3.2. This sample was described in the Divided Self subsection. In this sample, Devon was innerly seeing himself. He was also innerly singing along to Bruno Mars song, *The Lazy Song*. He was also innerly hearing three things: the actual song sung by Bruno Mars, himself singing the same song in a monotone voice, and the seen-Devon singing the song in a somewhat less monotone, more on key voice. All versions of the song were in sync with each other.

Many of Devon’s samples that involved inner hearing have been described previously. For example, Samples 2.6 and 7.1 were described in the Experience of Music subsection. In Sample 2.6, Devon was innerly hearing an orchestrated song and in Sample 7.1, Devon was innerly hearing a song he remembered on the piano.

Worded Thinking

Devon had three (9%) samples that involved the experience of worded thinking. Worded thinking involves thinking in particular distinct words without having those

words being experienced as spoken, heard or seen (Hurlburt & Heavey, 2006). One example of this phenomenon was Sample 5.1 discussed in the Incomplete or Uncoordinated Inner Seeing subsection. In this sample, Devon somehow experienced the word “study” as being present. However, it was neither written nor spoken. Devon felt the word in some way he could not specify, but he was confident that the word was somehow present.

Discussion

Devon was a motivated participant who displayed an unusually high degree of consistency in his sampled moments across sampling days. Devon’s inner experience involved very rich, complex, and detailed inner seeings. The degree of richness and complexity observed in Devon’s inner seeings was not typical of other individuals who have participated in DES sampling. Devon’s experience of inner seeing was also distinct from most people’s inner seeing in that it often involved the presence of two or more images at a given moment. At times, the multiple inner seeing involved seeing the same event from different perspectives; other times the multiple inner seeings were of seemingly unrelated events. Devon’s inner seeing also often involved frequent distortions and exaggerations of facial features and perceptual properties and contained unnecessarily elaborate detailed backgrounds and borders. The majority of Devon’s samples that involved some distortion or exaggeration of a person and made that person look cartoon-like or unusual in some way. Finally, Devon’s inner seeing often incorporated seeing words which sometimes involved unusual characteristics such as being strong or emitting heat. Despite the complexity of his inner seeing, Devon was convincing and consistent in his accounts of his inner seeings.

Devon also often, and perhaps always, was innerly seeing himself. Sometimes he was monitoring himself, seeing him do whatever he was actually doing in reality. Other times, he was innerly seeing a distorted, cartoon-like version of himself. Lastly, his inner seeing of himself sometimes involved a preoccupation with how he looked to others. Such inner seeing usually involved distortions or exaggerations making himself look worse than he actually does. Towards the end of his sampling, Devon mentioned that he always was innerly seeing himself and stated that he sometimes did not describe that inner seeing because he did not realize that it was important or that it was secondary to the other things he was experiencing during those sampled moments.

Devon also had a couple of samples during which he seemed to have two, separate, distinct origins of experience, a phenomenon called divided self. In these samples, Devon was innerly seeing himself and both Devon and the Seen-Devon were having distinct inner experiences. This is a rare phenomenon of experience.

Other noteworthy characteristics of Devon's experience include him frequently focusing on bodily functions and sometimes experiencing music visually. His experience of music was also more detailed than just listening to or paying attention to music. Both Devon's experience of bodily functions and music were rich and complex. For example, his attention to bodily functions sometimes evolved and changed to match what he was physically feeling. They also seemed visually exaggerated and more detailed, almost as if they were in high definition. Similarly, Devon's experience of music went beyond just hearing or listening to it. Rather, it was manifested visually in a very detailed and involved manner. Finally, Devon experienced sensory awareness often, typically with them being embedded in his inner seeing. Devon had one sampled moment that clearly

involved a feeling. He had other sampled moments that were suggestive of a feeling; however, they were problematic in that the experience mostly involved multiple and seemingly disconnected complex bodily sensations which may or may not have been related to a feeling.

Throughout all of his samples, regardless of the phenomenon of inner experience, Devon displayed highly complex and detailed inner experiences. The only phenomenon of inner experience that seemed similar to most DES participants (i.e., less complex and detailed) was his experience of sensory awareness. However, while his sensory awareness seemed like most DES participants' sensory awareness, he also simultaneously experienced inner seeing during those sampled moments that were complex and detailed, which, as noted, is not at all like the majority of DES participants. The significance of Devon's vivid inner seeing and rich inner experience is unclear. Such detailed and rich inner experiences may be advantageous to Devon. For example, one may speculate that his ability to visually and auditorily experience music may enhance his ability to make music (e.g., play the piano, produce music). Conversely, such detailed and rich inner experience may be a distraction at times, perhaps using up mental resources that could be applied productively to other aspects of functioning.

CHAPTER 7

IDIOPHGRAPHIC DESCRIPTION OF ROBIN'S EXPERIENCE

Robin is a 50-year old Caucasian female who sampled with us from June to July 2012. Robin met criteria for major depressive disorder as measured by the SCID-I (First, Gibbon, Spitzer, & Williams, 1997). She received a CES-D (Radloff, 1977) of 36, suggesting a clinically significant level of depressive symptoms. She received a Global Severity Index score of 2.67 on the SCL-90-R (Derogatis, Lipman, & Covi, 1973; Derogatis, 1994), suggesting the presence of psychological difficulties. Robin was taking the following medications at the time of sampling: Xanax .30mg, Lisinpril 20mg, Neurontin 600mg, Imuran 50mg, Plaquenil 400mg, Nexium 40mg, Cymbalta 60mg, and Vesicare 5mg.

Robin sampled on eight separate occasions, collecting a total of 42 sampled moments. Six of these sampled moments occurred during the first day of sampling, which is generally considered a training day and subsequently will not be discussed. After discarding the samples from the first day of sampling, we were left with 36 moments of experience.

Overview of Robin's Sampling

Robin had considerable difficulty in capturing and conveying her inner experience. She often had difficulty identifying the moment of the beep. For example, she sometimes described a sequence of events that occurred across five to ten seconds and she struggled to identify when specifically the beep occurred within that span of time. She also often described her behaviors rather than experience at the moment of the beep. Both of these are common for participants on the first day of sampling; however,

most participants improve over subsequent interview days. Robin did not improve. In fact, we had less confidence in Robin's ability to apprehend her inner experience as sampling continued.

Concomitantly, Robin seemed highly suggestible in the interviews as evidenced by what seemed to be her changing her reports about her experience or agreeing to the presence of things only after it was asked about by the interviewers. For example, during one of the interviews, Robin was describing a sampled moment in which she was thinking about moving to Florida. After an interviewer asked how that thought was present to her and gave some possible ideas including her innerly seeing a map of Florida, Robin stated that she was in fact innerly seeing a map of Florida. It is possible that Robin was in fact innerly seeing a map of Florida at the moment of the beep and coincidentally one of the interviewers used that as an example. Conversely, this could be an example of Robin's suggestibility.

She also used more subjunctifications when discussing her experience than other participants. Subjunctifications include tentative and unsure language (e.g., "maybe", "sort of") and changes in bodily language (e.g., gestures that indicate being uncertain). Subjectionifications can indicate that the participant is having difficulty describing her experience or that her experience not fully being understood by the interviewers. Robin seemed to use subjunctifications the most when discussing emotional experiences.

In contrast, Robin had some instances of inner seeing where the interviewers felt confident that Robin was honestly and accurately describing her pristine experience. In these samples, she seemed to be less suggestible and used less subjunctifications.

Robin's difficulties in capturing moments of experience did not appear to derive from her lack of motivation as she continued to work hard to pinpoint the moment of the beep and report on her inner experience as completely as possible. Robin's lack of inner experience and/or her difficulty apprehending it make it impossible to be confident about the salient characteristics of her inner experience, to the extent she has any. Overall, there are reasons to accept Robin's descriptions as being faithful to her experience, and there are reasons to be skeptical, and we were unable definitively to sort that out. The following provides a description of Robin's sampling and experience in light of our skepticism of her inner experience.

Minimal Inner Experience and Just Doing

Perhaps not surprisingly based on the discussion above, the most common feature of Robin's inner experience appeared to be little or nothing present at the moment of the beep. Thirteen samples (36%) of Robin's moments involved nothing or very little in her inner experience. Three of these samples involved nothing in Robin's experience. Seven of these samples involved a hint of some experience but were mostly blank or unclear experiences. Three of these samples involved Robin being absorbed in watching television with nothing else in her experience. The following two samples provide examples of moments in which Robin's inner experience was blank.

Sample 2.5: Robin was on her way to put money on her laundry card. At the moment of the beep there was nothing in her experience.

Sample 3.2: Robin was on the computer. At the moment of the beep, there was nothing in her experience. She described the nothingness as *staring into space* and a *foggy* sensation, but as best we could determine there was nothing in her

experience; that is, there was no experiential presence of fogginess or anything else.

Here are two examples of the seven samples that seemed to be mostly blank but may have involved a hint of experience present

Sample 7.4: At the moment of the beep, Robin was putting the big plate in the dishwasher. It was unclear if there was nothing in Robin's experience and she was putting the dish in the dishwasher as if on autopilot, or if she was attending/paying attention/actively putting the dish in the dishwasher. We could not be confident about what if anything was in her experience.

Robin had several samples similar to this in which it was difficult to discern to what degree something was in Robin's direct experience at the moment of the beep.

Sample 8.4: Robin was cleaning the coffee maker. At the moment of the beep, she may have been experiencing some jumbled thoughts about making coffee every day and the coffee not getting drunk. She was not confident that these thoughts were present at the moment of the beep. Cleaning the coffee maker did not seem to be in her experience.

In this sample, Robin was not clear as to what was in her experience. There may have been hints of jumbled thoughts about making coffee but Robin did not think they were present at the moment of the beep. Both of these samples come from late in Robin's sampling, days 7 and 8, respectively. Most participants are able to confidently apprehend what is in their experience at the moment of the beep well before their seventh day of sampling, even if there is nothing in experience.

The following provides an example of a moment in which Robin was absorbed in watching television. Robin had three samples that involved her being carried away with what she was watching on TV.

Sample 4.2: Robin was watching the *Big Bang Theory* on TV. At the moment of the beep, she was being carried along by the show. She was not paying attention to anything in particular.

In this section, we've discussed three related types of experience: little to nothing present in her experience, moments in which there may be a hint of inner experience, and moments when she was watching television with no particular experience. In all of these experiences, Robin's inner experience was mostly blank. Robin had a very high frequency of these moments of experience; in fact, they were her most frequently occurring phenomenon. It is possible that Robin does not have much occurring in her inner experience, which is reflected in the high frequency of these mostly blank moments. This theory would also be consistent with her difficulties at capturing her inner experience as was discussed at the opening of this chapter. Robin sometimes had more coherent inner experiences, which will be discussed below. These coherent inner experiences, however, occurred less frequently than her blank or mostly blank moments of inner experience.

Feelings

In seven (19%) of Robin's samples, it seemed as if she experienced a feeling. Three additional samples may have also included a feeling, although it was unclear if a feeling was present at the moment of the beep. In total, 28% of Robin's samples may have involved a feeling. In terms of valence, Robin experienced more negative emotions

(seven samples) than positive emotions (three samples). Six of Robin's emotional experiences were accompanied by bodily sensations. However, Robin appeared to have more difficulty than most participants in describing her bodily sensations. The following is an example of a sample that included a feeling associated with bodily sensations.

Sample 2.2: At the moment of the beep, Robin was nervous, which she experienced as a football-sized area of tenseness/discomfort in her stomach area and a shaky feeling throughout her body. Although she said her nervousness was about having to give blood, this was not in her experience at the moment of the beep. She was playing solitaire on her computer, but this also was not in her experience at the moment of the beep.

This sample was unusual for Robin in that she clearly described her experience of the bodily sensation. The following sample provides another example of a feeling associated with a bodily sensation. In this sample, Robin had difficulties describing her experience of the bodily sensation.

Sample 6.3: Robin had been speaking with her husband about her friend Mary switching her phone service to T Mobile, which cut Mary's cell phone bill in half. At the moment of the beep, Robin was feeling excited for Mary. This feeling seemed to be located throughout her body and was associated with a physical sensation that Robin could not describe. "Lightness" was the word we could find to most closely describe the physical sensation, but Robin was resistant to using that term to describe her sensation.

In this sample, Robin was confident that she was experiencing excitement physically throughout her body; however, she was unable to articulate that experience of excitement.

This sample is more typical of Robin's samples that involve feelings and is consistent with Robin's general difficulties in describing her experiences.

The following sample provides another example of Robin's difficulties in describing an emotional experience.

Sample 7.2: Robin had been watching TV and had been watching her cats, Ms. Muffet and Opal, fight. At the moment of the beep, she was watching to make sure Ms. Muffet did not pick on Opal too badly. As best we could determine Robin was paying attention to the cats and was worried. This worry seemed to be experienced throughout her body, but did not involve any physical sensations or specific localization. This experience was more of a feeling than a thought, although that was not entirely clear in the interview. Robin began talking about this experience as if it were a thought, but asserted that it was more of a feeling after the interviewer asked if it was a feeling. Robin was also hearing the TV as background noise. She was not paying attention to the content of what was being said.

In this sample, Robin had begun talking about her experience of worrying as a thought. However, after an interviewer asked if it was a feeling, she began discussing the experience as if it was a feeling. At the conclusion of the discussion of this beep, the interviewers were left wondering if worrying was in her experience at the moment of the beep and if it was, did it seem cognitive in nature, emotional, both, or something completely different.

Overall, feelings were Robin's most commonly occurring phenomenon of experience besides her high frequency of blank or mostly blank moments of inner

experience. While she had a few incidents of feelings that seemed consistent with other DES participants in clarity, the majority of her experience of feelings seemed less precise and convincing than those described by other participants. Her frequent use of subjunctifications and her difficulty articulating her bodily sensations are consistent with the notion that Robin often has minimally developed inner experience. It is also possible that there is something unique about Robin's inner experience that made it difficult for her to verbalize it in an interview.

Unsymbolized Thinking

Robin had eight samples (22%) that involved unsymbolized thinking. Three of these samples involved Robin experiencing the unsymbolized thought as being physically located somewhere in her head. The following provides a few examples of Robin's unsymbolized thinking.

Sample 2.4: At the moment of the beep, Robin was wondering why her doctor wants to call/knowing there was something wrong/thinking doctors don't call if there is nothing wrong. This was a cognitive/thinking experience rather than a feeling, and it was multifaceted with multiple aspects or themes.

Sample 3.3: Robin was talking on the phone. At the moment of the beep, Robin was telling her friend about the fact that she (Robin) had given up her relationship with her brothers because they did not support her. Robin was experientially controlling/driving the words she was saying. A notion of, "If you know you're right, why do you care what other people think?" was also present to Robin. This notion was an experienced thought, but was not experienced in words or images.

Robin seemed confident that this experience was located in the back of her head. She was also experiencing comfortableness throughout her entire body.

Sample 4.5: Robin was about to tell her husband that she had lost ½ lb. At the moment of the beep, she was thinking about having come home from the doctor's office and that she lost ½ lb. This thought was not experienced in words or images.

In each of these samples, Robin was experiencing a coherent thought that was not represented in any experiential details (e.g., words, images). Sample 3.3 is an example of an unsymbolized thought that Robin experienced as being physically located at the back of her head. Despite at times having difficulties describing her experience, Robin was convincingly confident that these experiences were not represented experientially. Her confidence in the lack of experiential details present during these sampled moments is in direct contrast to other sampled moments in which she appeared suggestible and easily led as was discussed at the opening of this chapter.

Happening of Speech

Robin had three samples (8%) that involved her saying something out loud that was not experienced by her. Rather, it was like the words were just rolling out of her instead of being created by her. This phenomenon is called the happening of speech. All three samples also involved her simultaneously experiencing unsymbolized thinking that was different from what she was simultaneously speaking out loud. In each of these samples, her experience was focused on what she was thinking not what she was speaking out loud. The following is an example of the phenomenon.

Sample 5.2: Robin was in her house talking to a neighbor from her window. At the moment of the beep, Robin was talking out loud to her neighbor asking, *How is your back doing?* Robin was not confident that those were the exact words present, but was sure that she was asking him about his back. Robin experienced her speaking as if the words were just rolling out of her, that she was not carefully attending to the specific words she was speaking. At the same time, she was thinking of suggestions for his back/how she could help him feel better. It was unclear if Robin was thinking of specific suggestions for his back such as, don't lay down but sit up more, or if she was thinking generally about suggestions for his back. This thinking was not experienced in words or images, but Robin experienced it as being located physically in her head. Experientially, Robin's thinking about suggestions for his back was more central in her experience than was talking out loud (perhaps 60%, 40% respectively).

In this sample, Robin was thinking about what her neighbor could do for his back. Robin had difficulties narrowing down the specific details of her thoughts. Experientially, thinking globally of suggestions for how she could help someone verses thinking of specific suggestions for someone is very different. However, Robin could not specify which of those, both, or neither were in her experience at the moment of the beep. This thought seemed to be unsymbolized and was experienced as being physically located in her head. She was also simultaneously speaking out loud to her neighbor; however, what she was saying out loud was not in her experience. The following is another example of the happening of speech phenomenon.

Sample 4.4: Robin was in the bathroom peeing and yelling at her husband to get into the shower. At the moment of the beep, she was thinking that he didn't shower the day before and he should get into the shower. This thought was not experienced in words or images. This thought was related to what she was yelling out to her husband, but was not specifically what she was yelling. Although they were occurring at the moment of the beep, Robin's peeing and yelling out loud were not in her experience.

In this sample, Robin was experiencing an unsymbolized thought about how her husband had not showered the day before. At the same time, she was speaking out loud.

However, what she was speaking out loud was different than what she was thinking and was not directly in experience. She experienced it as if the words were just occurring at the moment of the beep.

Inner Seeing

Seven (19%) of Robin's samples involved inner seeing. Three of Robin's samples involved her innerly seeing words, which is generally a rare experience. Two of her samples involved seeing something she had seen previously. For one of her inner seeing experiences, Robin experienced her inner seeing as if it was physically located in her head, a similar phenomenon to what was discussed previously under unsymbolized thinking. The following sample provides an example of one of Robin's inner seeing samples.

Sample 4.1: Robin was making spaghetti sauce. At the moment of the beep, she was innerly seeing the word "OREGANO" written on a list of the spices she needed to add to the sauce. Oregano was the only word she could read on the list,

but she could see that there were other spice names below it. **OREGANO** was written in black, computer-printed bold upper-case letters near the top of a white, rectangular (taller than wider) piece of paper. The word **OREGANO** was approximately twice as large as the other spices listed below it.

Robin had two other samples that involved innerly seeing words, both of which involved lists of things for her to do. The following provides another example of one of Robin's inner seeing samples. In this sample, Robin was seeing something she had seen previously.

Sample 6.2: Robin had been watching the *Big Bang Theory* on TV; it showed a ball-pit play area like they used to have at McDonalds. Robin had also just finished speaking to her husband. At the moment of the beep, she was innerly seeing a square, tan/black, drained ball pit from the perspective of standing near the rim of the pit looking down at it. The ball pit had an inch of urine on the floor of the ball pit, three or four diapers, and a few syringes with orange tops. There may have been something else in the left corner of the ball pit, but it was unclear as Robin was not seeing that area clearly. Robin was also feeling grossed out/repulsed. This feeling seemed mental and had no physical location or sensations associated with it. Robin's inner seeing was a recreation of a drained ball pit she saw on the news. However, in Robin's experience, she was not seeing the TV/news displaying the pit; rather she was seeing the pit as if she were standing at the rim of it.

Finally, Robin had one sample that involved an inner seeing that seemed to be physically located in her head.

Sample 3.5: At the moment of the beep, Robin was feeling relief/glad that Mary is going to be okay. This feeling was experienced physically in her body as comfortableness. She was also innerly seeing an airplane ticket. The airplane ticket was rectangular, black and white, with squared edges. Information was written on the ticket, but Robin could not see the specifics. The airline ticket she was seeing was located in the front of her head, around her forehead. She was seeing it as if she were looking from the back of her head. Robin had been thinking that Mary was getting a ticket to fly home from Florida rather than having to take the bus, which had been very traumatic on her way to Florida.

In this sample, Robin was innerly seeing an airplane ticket. Some of the details, such as the information written on the ticket, were not clear to Robin. Her inner seeing was located in the front of her head. This is consistent with Robin experiencing some unsymbolized thoughts as being physically located in her head.

Overall, Robin experienced inner seeing in approximately 20% of her sampled moments. Slightly less than half of her inner seeing samples involved innerly seeing words, a relatively rare phenomenon. Robin also had a few inner seeing samples that involved recreating something she had seen before. Lastly, Robin had one inner seeing sample which she experienced as being physically located in her head. Robin's inner seeing samples seemed to be her clearest moments of inner experience.

Discussion

Robin was a motivated participant who seemed to feel that she was doing a good job of capturing and conveying her inner experience. However, we had some concerns regarding Robin's ability to capture and convey her experience. Robin often appeared to

have considerable difficulty in identifying what was ongoing in her experience at the onset of the beep. Her reports of experience often involved a sequence of events and she struggled to identify at what point in the sequence of events the beep sounded. It was also our observation that Robin seemed highly suggestible throughout her interviews as it appeared she changed her reports of her experience or agreed to the presence of things only after it was asked about by the interviewers. Robin did not seem to improve across sampling days in her ability to capture and convey her experience. She also did not become more believable with regards to the accuracy of her reports. In fact, we developed less confidence in Robin's ability to apprehend her inner experience as sampling continued.

Robin experienced many samples that were mostly blank. She had several samples in which there was nothing in her experience or slight hints of experience. She also had some samples that involved her being carried away with a television program she was watching without anything else in her experience. Robin experienced a few incidents of feelings (28%), unsymbolized thinking (22%), and inner seeing (19%). However, many of these samples seemed to contain various subjunctifications which led us to be cautious not to assume that Robin's description accurately conveyed her inner experience. In addition, many of these samples contained inconsistencies that resulted in us questioning aspects of her report.

Robin occasionally had samples in which she was both innerly thinking something and speaking out loud. In these samples, what Robin was innerly thinking, usually in the form of unsymbolized thinking, was different than what she was saying out loud. Furthermore, her experience of speaking out loud was automatic as if she were

speaking on auto pilot. In comparison to other DES participants, Robin had below-average frequencies of sensory awareness (5%) and inner speaking (0%).

Although there is no way to know for sure, her difficulties in capturing her experience may be related to her having less in experience to access at a given time than most people. Robin had some incidents of inner experience that seemed clearly apprehended, particularly her experiences of inner seeing. This suggests that Robin can have clear inner experience and was capable of describing those experiences in an interview. This also suggests that Robin's difficulties in describing her experience in other sampled moments was a result of her not having much to report about or having unclear inner experiences rather than language difficulties or other procedural issues. It is also possible that she needed further practice at refining her skills. Lastly, it is possible that Robin's inner experience and her ability to capture her inner experience were impacted by the various medications she takes daily or some other factor.

CHAPTER 8

IDIOPHIC DESCRIPTION OF ANDREA'S EXPERIENCES

Andrea is a 23-year old Hispanic female who sampled with us from December 2011 to March 2012. Andrea met criteria for major depressive disorder as measured by the SCID-I (First, Gibbon, Spitzer, & Williams, 1997). Andrea received a CES-D (Radloff, 1977) score of 54, suggesting a clinically significant presence of depressive symptoms. She received a Global Severity Index score of 3.06 on the SCL-90-R (Derogatis, Lipman, & Covi, 1973; Derogatis, 1994), suggesting the presence of significant psychological difficulties. Andrea was not receiving any treatment for depression at the time of sampling.

Andrea sampled on four separate occasions, collecting a total of 24 sampled moments. Six of these moments occurred during the first day of sampling, which is generally considered a training day and subsequently will not be discussed. After discarding the samples from the first day of sampling, we were left with 18 moments of experience.

All participants were invited to participate in eight sampling days. Andrea ended her participation with this study prematurely after completing four sampling days. She indicated that she could not participate in further sampling because she did not have time in her schedule, but we don't know whether her premature termination might have been related to the relative unclarity of her experience or something else related to her sampling. Andrea also told us that she did not wear the ear piece that is attached to the beeper on sampling days one, two, and three. It is our experience that wearing the ear piece assists participants to identify the precise onset of the beep and thus makes it easier

for them to apprehend their ongoing inner experience. It is unclear if her not wearing the ear piece affected her ability to capture her experience at the moment of the beep.

We identified the following salient characteristics of Andrea's inner experience, though they should be interpreted tentatively as no confident conclusions could be drawn about Andrea's inner experience.

Sensory Awareness

The most common feature of Andrea's inner experience was sensory awareness, which occurred in 7 (39%) of her samples. Six of the seven sensory awarenesses were bodily (e.g., a tingle or pain). The following is an example of Andrea's sensory awareness:

Sample: 4.6: Andrea was taking a shower. At the moment of the beep, she was paying attention to the feeling of soap between her fingers on both hands. She was also paying attention to the feeling of warm water hitting her upper back. Lastly, she was feeling refreshed which had a relief component to it. We were unable to determine whether feeling refreshed was an emotion or a physical sensation or both a feeling and a sensation.

In this sample, Andrea was paying particular attention to a specific, bodily sensory aspect (pain and soap/water/relief, respectively). Her sensory experience was differentiated such that she was simultaneously able to pay attention to the sensory aspect of soap between her fingers on both hands as well as the feeling of the warm water hitting her upper back. Both seemed to be equally in her experience at the moment of the beep.

In another incident of sensory awareness, Andrea was texting on her phone. In her experience were the physical sensations of texting. Her experience did not include

any aspects of the meaning of what she was texting even when we would expect that content to be in her experience. In this sample, she was experiencing two sensory awarenesses: the feeling of her thumbs moving and the feeling of the buttons of the phone on her fingertips.

Sample 2.5: Andrea was answering a text message. At the moment of the beep, she was feeling the muscles of her thumbs moving (as the thumbs were moving on the phone to create a text message). She was also feeling the buttons of the phone on her fingertips. The content of the text message or the person it was intended for was not in her experience at the moment of the beep.

Andrea had three additional samples that contained two sensory awarenesses. One of these samples was discussed previously, Sample 4.6. Three of these samples involved more than one differentiated bodily sensory awareness. The other sample contained a visual sensory awareness and an auditory sensory awareness. The following provides two examples, each of which involved two sensory awarenesses.

Sample 3.3: Andrea was being poked with a needle in her third finger of her left hand by another student as part of practicing how to draw blood. At the moment of the beep, she felt pain in her middle finger [the one in which she was poked]. The pain was felt equally throughout her entire middle finger [note: Andrea was poked on the top, side end of her finger] and internally, not on the surface of her finger. That is, the pain was not felt where the poke had occurred – in fact, she had no experienced sensation of the direct poke. Instead, the pain was experienced throughout her finger. Andrea also felt a tingling sensation from the bottom of her middle finger to her elbow. The tingling sensation was strongest

near her finger and lessened in intensity toward her elbow. The tingling sensation was experienced internally, not on the surface of the arm. Andrea was also feeling scared. There were no bodily sensations associated with her feeling scared. Less saliently in her experience, Andrea could see the other student's hand on her finger and she could see the needle poking into her finger.

Sample 4.3: Andrea was cutting an apple. At the moment of the beep, she was focused on the sound made as the knife cut through the apple and also on the juice droplets spraying out of the apple as she cut it.

In both of these samples, Andrea was drawn to sensory qualities (i.e., bodily, auditory, and visual sensations). The multiple sensory awarenesses seemed to be equally present to her at the moment of these beeps. For example, pain internally on her middle finger is different than a tingling sensation from the bottom of her middle finger to her elbow, but yet both were present to her at the moment of the beep. The first example is also notable in that her experience of pain extended beyond the actual physical sensation. She was poked on the top, side end of her finger, yet her experience of the pain was throughout her entire middle finger and internally. In fact, she experienced no pain where the poke occurred.

Overall, sensory awareness was Andrea's most frequent form of experience across samples. In fact, she experienced sensory awareness even when verbal awareness might have been expected. For example, when texting someone, Andrea's inner experience involved the sensory aspect of texting, whereas most would assume her experience would be on the content of the message that she was texting. Andrea also displayed highly differentiated sensory awareness. For example, in Sample 2.5 described

previously, she was simultaneously experiencing the movements of her muscles and the feel of the keys. Finally, Andrea's sensory awareness sometimes extended beyond the actual physical sense. For example, she was feeling pain from a needle poke not where she was actually being poked by a needle.

Feelings

The next most prominent aspect of Andrea's inner experience was feelings. Six (33%) of Andrea's 18 samples involved a feeling. In addition, one (6%) sample involved a thought/feeling. In total, 39% of Andrea's samples involved some aspect of an emotional experience.

In terms of valence, Andrea experienced four negative feelings and two positive feelings. Three of Andrea's feelings did not involve bodily sensations, and three did involve bodily sensations. Both of Andrea's positive feelings were associated with bodily sensations. The following sample provides an example of one of Andrea's feeling that did not involve any bodily sensations:

Sample 3.2: Andrea was poking a fellow student's finger in order to draw blood.

At the moment of the beep, she felt nervous and hurried which she experienced as two distinct and separate, yet equally salient, feelings. The nervous feeling was mental, meaning it had no other experiential characteristics. Feeling hurried involved somehow knowing that there were a few things that she needed to complete quickly after poking the person's finger. The specific things that she needed to complete (e.g., throw away the needle, wipe blood) were not present to her at the moment of the beep, rather at the moment of the beep, she knew that there were things that she needed to do quickly.

In the samples that involved feelings associated with bodily sensations, it was unclear if her experience was of an emotional experience associated with bodily sensations, or if her experience was of bodily sensations that she labeled as an emotion.

Sample 2.6: Andrea was hugging her son and was feeling happy. She experienced the feeling of happiness as a very cold feeling (although not ice cold) deep in her upper chest [she originally called this feeling “blood flow,” but that was a presupposition about the underlying physiology, not a description of experience]. She also was feeling heat on her cheek from where her son’s cheek touched her cheek.

It was unclear during the interview if Andrea’s experience was focused on the very cold feeling deep in her upper chest, which she labeled as happiness. It is also possible she was feeling happy which manifested itself as a very cold feeling deep in her upper chest. It was difficult for the interviewers to discern whether the feeling of happiness was clearly apprehended.

The following sample provides another example of the possibility of integration or separation of feelings and bodily sensations.

Sample 4.1: Andrea was driving and another car had almost hit her car. At the moment of the beep, Andrea was feeling scared and feeling her heart racing. Feeling scared and her heart racing seemed to go together somehow but it was difficult for us to determine whether she understood the heart racing as being part of the emotion or whether that question made sense to her.

It is possible that feeling scared and feeling her heart race were two separate and simultaneously occurring experiences. It is also possible that Andrea was feeling scared

which was associated with her heart racing. Lastly, it could be possible that Andrea was experiencing her heart racing and labeled that bodily sensation as her feeling scared.

Andrea had one sample in which she experienced a thought/feeling. This experience included both an emotional and cognitive/thinking process. The emotional and cognitive processes were intertwined to such a degree that they could not be separated into two distinct, separate experiences. Rather, the experience was both emotional and cognitive.

Sample 2.3: Andrea was doing a homework problem which asked her to find an example of a normal value. At the moment of the beep, she was thinking/feeling that the problem was difficult/frustrating. She could not disentangle the thinking from the feeling – it seemed to be one experience that could be called a thinking experience or could be called a feeling. She experienced the thought/feeling in her head and it was not accompanied by any sensation. After the beep, she noticed a sensation of pressure in her head that she reported was related to the frustration, but that was not part of her experience at the moment of the beep.

Overall, Andrea experienced feelings in 39% of her samples. Her experience of feelings varied and included both positively and negatively valenced feelings, some feelings being associated with bodily sensations, some feelings not associated with bodily sensations, and one incident of a feeling intertwined with a cognitive experience. Sometimes with Andrea's experience the interviewers were not confident about whether a feeling was present at the moment of the beep and if it was present, how Andrea experienced it. For example, it was unclear what the relationship was between Andrea's feelings and associated bodily sensations. It was difficult to discern if her experience was

of an emotional experience associated with a bodily sensation or perhaps a bodily sensation that she labeled as an emotion (e.g., my heart is racing therefore I must be scared).

Inner Speaking and Inner Hearing

Inner speaking was present in 1 (6%) of Andrea's samples. Inner hearing was present in 2 (12%) of Andrea's samples.

Sample 3.5: Andrea was speaking with a fellow student, Shatoya. At the moment of the beep, she was telling Shatoya: "Squeeze the finger to where it turns red, kind of purplish, so you have a lot of blood when you poke it." Simultaneously, Andrea was innerly saying to herself, "The finger has to turn reddish or purplish for blood to gather up." Andrea was focused on what she was innerly saying more than what she was saying out-loud. She was innerly saying it to herself in her own voice, as if the words were somehow supplied to her.

In this sample, Andrea's experience was on her inner speaking rather than what she was saying out-loud to her classmate. At this moment, Andrea was simultaneously speaking two distinctly different sentences, one aloud and one innerly, but understood herself to be the agent of neither. The aloud words were happening, coming out of her, without her attending to them. She was attending to the inner words, but it was not merely that she was recalling what she had read earlier; it was as if what she had read earlier was being played back through her own inner speaking.

The following two samples involved inner hearing.

Sample 4.4: At the moment of the beep, Andrea was innerly hearing "oh gosh" said in an irritated tone in her own voice. She understood that "oh gosh"

represented one thought: “I don’t really have any knowledge of the candidates running; I need to do my research.” However, this thought was not directly or explicitly present at the moment of the beep. Andrea was of the impression that she had explicitly thought the complete thought some seconds before the beep, and that the “oh gosh” remained from that prior thinking.

Sample 4.5: Andrea was reading on the Internet that people with thyroid problems have to take pills for the rest of their lives. At the moment of the beep, she was somehow thinking that she might have to take pills for the rest of her life. She was innerly hearing, “I might have to take pills the rest of my life.” This was said really quickly, perhaps twice the normal rate, in her own voice. She was also feeling frustrated, dead-end like. This frustration did not involve any physical sensations or location. Reading was not in her experience at the moment of the beep.

In these two samples, Andrea was experiencing inner hearing. In Sample 4.5, there was some ambiguity in her experience such that she initially said that no words were present, but later stated that she was innerly hearing the statement. The ambiguity may represent a lack of clarity in her inner experience. It may also represent the difficulty in verbalizing one’s inner experience, especially an inner experience which many people do not anticipate. In both of these examples, Andrea was clear that the experience was not inner speaking; she did not experience herself as innerly saying or producing the words. Rather, her experience was of innerly hearing the words. In the first sample, what she heard was said in an irritated tone. In the second sample, what she heard was said really,

quickly perhaps twice the normal rate. In both samples, what she heard was in her own voice.

Unsymbolized Thinking

Andrea had one experience (6%) that involved thinking a clear and specific thought without the content being represented in words, images, or other symbols.

Sample 3.6: Andrea was cleaning and was looking for something. She could not remember specifically what she was looking for, although she thought that she was looking for tubes to collect blood. At the moment of the beep, Andrea was wondering where they [which she thinks was the tubes] were. It was difficult to determine how she experienced the wondering; at one point she described it as a sense of herself being lost, but she also said that her experience was more aimed at the missing tubes than at herself as lost. She was also physically experiencing herself opening a cabinet. She remembers that her hands were on the handles of the cabinet, but she was unsure what aspect of opening the cabinet was directly in her experience.

While Andrea had difficulty determining how she experienced the wondering and the specific content of the wondering (e.g., her being lost or the tubes being lost), she was consistent that her wondering was experienced without words or other symbols present. We have counted this as an instance of unsymbolized thinking, but it is not as clear or specific as is unsymbolized thinking typically. Specifically, it is somewhat unusual for the target (in this sample, what she was looking for) of an unsymbolized thought to be ambiguous.

Inner Seeing

Andrea had one experience (6%) that involved inner seeing, seeing something that is known to be not actually present.

Sample 2.4: At the moment of the beep, Andrea was feeling tired and was thinking maybe she should take a nap. Her thought that maybe she should take a nap involved (and may have been entirely) innerly seeing a round/oval, gray/white rock sleeping with a pastel purple blanket over it. She was seeing the rock from a side perspective with its head to the right. The rock had two dots for eyes and a line for a smile. She did not see anything around the rock [Andrea identified the rock as the one from a Zolofit depression commercial, but believed that the rock and blanket that she was innerly seeing was altered from what she saw on the commercial]. Her tired feeling was mostly or entirely in her eye lids feeling heavy.

In this sample, Andrea was experiencing inner seeing and less saliently in her experience, feeling tired which was associated with her eye lids feeling heavy. Andrea's inner seeing also may have involved a sensory awareness with regards to her attending to the sensory qualities of the rock she was innerly seeing. Her description of the rock (i.e., round/oval, gray/white rock with a pastel purple blanket) and her high frequency of sensory awarenesses led the interviewers to consider her as being drawn to the visual qualities of what she was innerly seeing.

Just Doing and Nothing in Experience

Andrea had two samples (11%) in which she was “just doing,” she was just engaged in some activity with no awareness of it (Hurlburt & Heavey, 2006). She also had one sample (6%) in which there was nothing or very little in experience.

Sample 2.1: Andrea was driving and had to make a left turn to get to where she was going. At the moment of the beep, she may have been thinking that she needed to turn left or she may have been simply proceeding without any thought present. If a thought was present, it was dim and without words or images.

In this sample, Andrea’s experience was mostly of the task that she was doing. There also may have been a dim, unsymbolized thought present at the moment of the beep, but it was difficult to discern.

Sample 3.4: Andrea was outside walking back to her class. At the moment of the beep, Andrea was visually seeing the building where her class was located. The building she was seeing was, or at least may have been, dimly in her experience.

Discussion

Andrea participated in four days of sampling rather than the eight days of sampling intended for this study. The aforementioned salient characteristics of experience emerged across the four days of sampling; however, it is uncertain if these salient characteristics would have continued to be present in additional sampling days. Andrea’s descriptions of her inner experience were sometimes unclear. Her description of sensory awarenesses seemed to be mostly clear; however, her description of other experiences seemed less clearly apprehended. It is possible that her inner experiences were clear, but she struggled to verbalize her inner experiences. It is also possible that

her experience of phenomenon besides sensory awareness were less clear, resulting in difficulties apprehending those experiences. While she somewhat improved in her ability to capture and describe her experiences over the four days of sampling, it is difficult to determine if she would have continued to improve in her skill to apprehend and describe her experiences if she continued sampling. Also, Andrea disclosed to us that she did not use the ear piece on the beeper to hear the beeps. Rather, the beeps came out of the speaker. Not using the ear piece on the beeper could have hindered Andrea's ability to identify the precise moment of the beep and subsequently made it more difficult for her to capture her experience occurring the brief moment before the beep alerted. In sum, there are no confident conclusions that can be drawn about Andrea's inner experiences. The salient characteristics identified and the following discussion of Andrea's inner experiences should be taken as tentative profile of Andrea's experience.

Andrea's most frequently occurring phenomenon of experience was sensory awareness (39%). Her description of her sensory awarenesses were clearer than her description of other experiences. Andrea's sensory awarenesses were atypical in a few ways. She experienced sensory awareness even when verbal awareness might have been expected. She also had some sampled moments in which she was experiencing more than one sensory awareness, and those awarenesses were very differentiated and equally salient in her experience. Finally, Andrea had one sampled moment that involved a sensory awareness that extended beyond the actual physical sense. That sample involved her being poked by a needle but she felt pain in other areas of the finger being poked, but not at the actual site where the needle penetrated her skin.

Andrea also had a few sampled moments that involved feelings (39%) and inner hearing (11%). She had below-average frequencies of inner speaking (6%), unsymbolized thinking (6%), and inner seeing (6%). Andrea's experience of these phenomenon seemed to be less clearly apprehended as compared to her experience of sensory awareness.

CHAPTER 9

IDIOPHIC DESCRIPTION OF TYLER'S EXPERIENCES

Tyler is a 56-year old, Caucasian, male who sampled with us from June to July 2012. Tyler met criteria for bipolar disorder as measured by the SCID-I (First et al., 1997). Tyler received a CES-D (Radloff, 1977) score of 18, suggesting the presence of some depressive symptoms. He received a Global Severity Index Score of 1.5 on the SCL-90-R (SCL-90-R; Derogatis, Lipman, & Covi, 1973; Derogatis, 1994), suggesting the presence of psychological difficulties. Tyler does not work because he is on mental disability. Tyler was receiving psychological treatment for his bipolar disorder at the time of sampling which included meeting regularly with a psychologist and a psychiatrist. Tyler was taking the following medications at the time of sampling: Lexapro (10 mg), Lithium (300 mg), Seroquel (600 mg), and Hydrocodone (10 mg).

Tyler sampled on six separate occasions, collecting a total of 36 sampled moments. Tyler was unable to complete the intended eight days of sampling because he moved away from the area. Six of Tyler's samples occurred during the first day of sampling and will subsequently not be discussed. After discarding the sampled from the first day of sampling, we were left with 30 moments of experience.

Overall, Tyler's inner experience was consistent in that he experienced sensory awarenesses in the over 80% of his sampled moments. He also seemed to experienced a high frequency of thoughts, however his thoughts were problematic in that they were often unclear, vague, and perhaps more affective or sensory in nature. Tyler also had a difficult time apprehending whether the thought was present precisely at the moment of the beep. In contrast, his experiences of sensory awareness were clearly apprehended.

The following provides a description of the salient characteristics of Tyler's inner experience.

Sensory Awareness

Sensory awareness occurred in 25 (83%) of Tyler's 30 samples. Tyler experienced visual sensory awarenesses the most often (in 23 sampled moments). He also had two sampled moments with tactile sensory awarenesses, one sampled moment with olfactory sensory awareness, and one sampled moment with auditory sensory awareness. Tyler had two additional samples that seemed to involve perceptual awareness, although in these sampled moments, it was difficult to rule out the presence of a sensory awareness. If we include these samples, Tyler may have experienced sensory awareness in 90% of his sampled moments.

Tyler's visual sensory awarenesses varied greatly. Sometimes he was focused on aspects of objects in his environment (e.g., dirt on the sidewalk) and other times he focused on characteristics of people around him (e.g., noticing the coloring of a man's hair). The following sample provides an example of one of Tyler's visual sensory awarenesses.

Sample 3.1: Tyler was at the dog park. He was reaching into a box to get a plastic bag for dog waste. At the moment of the beep, he was visually absorbed in the shiny, brown cleanness of the bag.

In this sample, Tyler was absorbed in the visual qualities (i.e., shiny, brown cleanness) of the plastic bag. This experience was purely sensory in that he was engrossed in the sensory aspects and was not aware of any meaning or interpretation regarding the object.

In 5 of Tyler's 23 visual sensory awarenesses, Tyler was absorbed in the coloring of objects.

Sample 6.1: Tyler was drinking ruby red juice. At the moment of the beep, he was noticing the white color of the ice cubes in contrast to the red/pink color of the juice. He may have been thinking, do I need to put more ice cubes in my drink. He was not sure if this thought was present to him at the moment of the beep.

In this sample, Tyler was drawn to the color contrast of the red/pink color of his juice to the white color of the ice cubes.

Tyler had two samples which involved a tactile sensory awareness. The following is an example of one of Tyler's tactile sensory awarenesses.

Sample 2.2: Tyler was running his tongue along the bottoms of his teeth. A split second before the moment of the beep, his teeth were feeling his tongue; now, at the moment of the beep, he was no longer feeling his teeth (his tongue had arrived at the place where he is missing 3 teeth). Somehow, in a way that was not entirely clear, he was aware of the absence of the sensation, or the absence of the teeth as if physical gritty/roughness somehow remained but at the moment of the beep as a just-passed sensation.

In this sample, Tyler had been feeling the physical gritty/roughness of his teeth. At the moment of the beep, he was somehow aware of the absence of that sensation.

Tyler had one sample which involved an olfactory sensory awareness. In this sample, Tyler was absorbed in smelling a good smell coming from the kitchen, which was the smell of soup cooking.

Sample 3.6: At the moment of the beep, Tyler was purposefully sniffing the good smell coming from the kitchen. He may have been wondering what the smell was, trying to figure out what was cooking, but he was unsure if the wondering occurred before or after the moment of the beep.

Tyler also had one auditory sensory awareness which involved him paying attention to the sound of paper being cut by a box cutter.

Sample 6.2: Tyler was ripping paper with a box cutter. At the moment of the beep, he was noticing the sound of the paper being cut by the box cutter. He was also seeing the paper cut by the knife; we understood this seeing as being somewhat less salient than the sound. He was not paying attention to the doing of the cutting, which seemed on autopilot. There was some discussion of the fact that the sound meant that the cutting was clean, that this was the sound that he expected/wanted to hear, but it was not clear whether this was or was not in his experience at the moment of the beep.

Tyler also had five sensory awareness samples in which Tyler was purposefully creating a sensory experience to be aware of, which we call the *doing* of sensory awareness. In these samples, Tyler was not just noticing some sensory aspect; instead he was purposefully creating a sensory experience (e.g., purposefully smelling something) to be aware of (e.g., noticing the qualities of the smell). One example of Tyler's doing of sensory awareness has been discussed previously. In Sample 3.6, Tyler was sniffing the good smell coming from the kitchen and at the moment of the beep, he was noticing the smell. In this sample, Tyler was actively sniffing the smell in order to pay attention to

the qualities of the smell. The following sample is another example of Tyler doing of sensory awareness.

Sample 3.5: Tyler was wiggling his toes in his socks. At the moment of the beep, he was visually paying attention to his toes moving his socks. He may have also been wondering why he was wearing black socks, but he was unsure if that wondering occurred before or after the moment of the beep.

In this sample, Tyler was wiggling his toes in his socks purposefully to create the sensory experience (i.e., visually seeing his toes moving his socks) that he was noticing at the moment of the beep.

Overall, sensory awareness was very salient in Tyler's inner experience, occurring in the large majority of his sampled moments. While Tyler experienced sensory awareness of all senses, he most frequently experienced visual sensory awareness. Tyler also sometimes purposefully created the sensory experiences on which he was focused.

Unsymbolized Thinking

Two (6%) of Tyler's samples involved unsymbolized thinking. Both these unsymbolized thoughts were related to a sensory awareness he was also experiencing at the moment of the beep. The following sample provides an example of one of Tyler's unsymbolized thinking experiences.

Sample 2.4: Tyler was on a bus and a seemingly homeless man came onto the bus and sat next to Tyler. At the moment of the beep, Tyler was noticing the man's wild, gray hair. He was also innerly thinking, this guy is old/the gray hair is old/his hair is gray.. This thought was not experienced in words or images. Tyler

first noticed the hair and then experienced the thought, but both were present in experience at the moment of the beep.

In this sample, Tyler's thought, "this guy is old/the gray hair is old/his hair is gray" is unsymbolized as it was not experienced symbolically (i.e., words, images). This thought was also related to Tyler's sensory awareness of noticing the man's wild, gray hair. The following provides another example of Tyler experiencing an unsymbolized thought.

Sample 5.5: Tyler was looking at a plant in his house. At the moment of the beep, Tyler was noticing how the plant's leaves looked burnt on the bottom. He was also thinking something like, "How come I didn't see it before/how did this happen?" This thinking was not experienced in words or images.

In this sample, Tyler's thought, "How come I didn't see it before/how did this happen?" is another example of unsymbolized thinking. The thought was not experienced in words or images, but Tyler was confident that the idea was present at the moment of the beep. In this sample, Tyler's unsymbolized thought was related to his sensory awareness of the plant looking burnt on the bottom.

Hints of Thoughts

An additional 14 (47%) of Tyler's samples involved what he described as a thought. In some of these sampled moments, it seemed like there were hints of thoughts present. Other times, it seemed like there were thoughts that were close to but not exactly present at the onset of the beep. Other times, it was difficult to discern if what he was describing was a thinking (cognitive) experience or some experience that was possibly more sensory or affective in nature. If the thoughts were present at the moment of the beep, they seemed to be low in saliency in comparison to other aspects of his experience

and to be not fully formed. Several of those examples were presented previously (Samples 3.5, 3.6, and 6.1). The following sample is another example of a sample in which we were unclear regarding the presence of a thought at the moment of the beep.

Sample 4.4: At the moment of the beep, Tyler was looking at the basket-weave bark on a date palm tree. He may have also been thinking that all the bark doesn't look good on a date palm tree/the tree would look better without the bark. But, it is unclear if he was thinking that at the moment of the beep.

In this sample, it was unclear if the thought about the bark not looking good on the palm/tree was present at the moment of the beep. The following provides another example of this phenomenon.

Sample 5.3: At the moment of the beep, Tyler was noticing the moustache hair above his son's lip. There may have been a hint of a thought about the fact that he is starting to grow a moustache or the fact that he will need to shave soon, but we could not be sure.

This sample is similar to Sample 4.4 in that it was difficult to discern whether the thought about his son growing a moustache was present at the moment of the beep. If it was present at the moment of the beep, it was less salient than Tyler's sensory awareness of his son's moustache hair and was generally vague or not fully formed.

Tyler also had sampled moments in which it was difficult to discern if his experience was a thinking experience or whether it was more sensory or affective in nature.

Sample 2.5: Tyler was having an argument with his 13-year old son. At the moment of the beep, Tyler was thinking, why does this boy care about adult

affairs/matters? This thought was not experienced in words or images. This thinking may have included or otherwise reflected some degree of consternation or frustration with why his son was worried about adult things, but we could not be sure.

What Tyler called “thinking” in Sample 2.5 did not seem to be the same type of experience that Tyler called “thinking” in a Sample 2.4 when he was thinking, this guy is old/the gray hair is old/his hair is gray (discussed previously under the Unsymbolized Thinking section). We could not be confident how the two experiences were different. It seemed that Sample 2.4 was at least possibly more sensory than cognitive, and Sample 2.5 seemed at least possible more affective than cognitive. Whether there was anything cognitive in either is not known; whether there was any experienced emotion in either is also not known.

Overall, Tyler experienced distinct, unsymbolized thoughts or hints of thoughts in approximately 50% of his samples. His thoughts were usually pertaining to his sensory awareness experience at the moment of the beep. Tyler had several samples that involved vague hints of thinking processes when it was difficult to discern whether or not they were present at the moment of the beep.

Preoccupation with Eyes

Tyler had three (10%) samples in which he was focused on eyes. Two of these samples were focused on dogs’ eyes and one sample was focused on a woman’s eyes. This is a rare phenomenon and appeared to have significance for Tyler.

Sample 2.3: Tyler was taking his dog for a walk and saw a woman walking towards him walking two Pit Bulls. At the moment of the beep, Tyler was

looking at the two Pit Bulls' heads and was focused in on their eyes. He was slightly more focused on the dog on the left. Tyler was looking at the Pit Bulls' heads to determine if they were aggressive dogs, though it was not clear if this was directly experienced beyond seeing their eyes and heads.

In this sample, Tyler was focused on the Pit Bull's eyes. Focusing on their eyes may have been the way that Tyler was trying to discern if the dogs were aggressive. In the following sample, Tyler was focused on the coloring of a woman's eyes.

Sample 3.3: At the moment of the beep, Tyler was paying attention to the very black on very whiteness of a woman's eyes. It was a stark contrast of striking blackness and whiteness that had captured his attention. He may have also been recognizing her eyes or wondering if they were really black, but he was unsure if the thinking occurred before or after the moment of the beep. His description of seeing the woman's eyes was very compelling, whereas the discussion of the possible thinking was much less so.

Tyler was focused on the woman's eyes, specifically the contrast between the blackness and whiteness of her eyes.

Inner Seeing

Tyler reported inner seeing in one (3%) of his samples. Despite not experiencing inner seeing often, Tyler was confident and believable in his description of his inner seeing experience.

Sample 3.2: Tyler was walking and a cool breeze had come up. At the moment of the beep, he was feeling the cool breeze on his face. Tyler had closed his eyes when the breeze started and at the moment of the beep he was actively,

intentionally feeling the sensation of the cool breeze on his face. He was also innerly seeing an Asian peasant, who, like all the other peasants, whenever a breeze came across the hot paddy, broke off from planting and stood to face the breeze full on. Tyler saw the man clearly, straight-on, saw his smiling face and blowing hair, and saw also other details, for example, the field rising up like steps to the right and left. This inner seeing was a partial recreation of a scene from a movie Tyler had seen, although some details were different than the movie. In the movie, there were two or three men in the field, but Tyler was only seeing one. In this sample, Tyler was creating a sensory awareness of feeling the breeze on his face. At the same time, he was innerly seeing a partial recreation of a scene from a movie he had seen.

Inner Speaking

One (3%) of Tyler's samples involved the experience of inner speaking. Tyler was confident and believable in his description of this experience despite not experiencing inner speaking during any other sample.

Sample 4.6: At the moment of the beep, Tyler was innerly saying to himself, "12," the sum of the first two digits (9 and 3) of the serial number of the \$10 bill he was looking at. He innerly said 12 in his own voice. He was also looking at the numbers 9 and 3 on the \$10.00 bill.

This sample showed that Tyler was able to apprehend inner speaking when it occurred.

Feelings

Tyler had one (3%) sample that may have involved a feeling although it was difficult to discern whether a feeling was actually present. This sample (Sample 2.4) was

discussed previously under the Hints of Thoughts Section. In this sample, Tyler may have been experiencing some degree of frustration or consternation regarding why his son was worried about adult things. With no other samples containing feelings, it is possible that this experience was more cognitive than affective.

Discussion

Tyler inner experience overwhelmingly involved sensory awarenesses. Over eighty percent of his sampled moments included sensory awareness, which is well above the frequency of sensory awareness for most participants. He experienced sensory awarenesses with all senses except taste. Visual sensory awarenesses occurred most frequently, occurring in 23 of his 30 sampled moments. Tyler also had samples in which he was actively creating sensory experiences to focus on, which we called the doing of sensory awareness. For example, he noticed that a breeze was occurring and he shut his eyes and paid attention to the sensory aspect of the breeze hitting his face. Another time, he was sniffing to purposefully smell the scent of soup cooking in the kitchen.

Tyler had very few other clear experiences beyond sensory awareness. He occasionally experienced unsymbolized thinking (6% of his sampled moments) and hints of thoughts (47% of his sampled moments). However, the majority of his thoughts were related to aspects of his sensory awarenesses, and were less salient than other aspects of his experience and vague or not well formed. Furthermore, Tyler's hints of thoughts involved ambiguity regarding whether they were present at the moment of the beep. Tyler only experienced one clear experience of inner speaking and one clear experience of inner seeing. He also had one experience which may have involved a feeling. Overall, Tyler's inner experiences seem to be predominantly characterized by sensory

awarenesses with a few unclear occurrences of other forms of experience (i.e., unsymbolized thinking, inner speaking, and inner seeing). The fact that Tyler did report rare instances of inner speaking, inner seeing and perhaps a feeling indicated that he was able to recognize and describe these types of experiences when they were present. This lends further support to the proposition that the predominate feature of Tyler's pristine inner experience was sensory awareness. Lastly, at the time of sampling, Tyler disclosed that he was prescribed and taking several mood altering medications. It is unclear what effect, if any, the medication may have had on his inner experience.

CHAPTER 10

IDIOPHIC DESCRIPTION OF DANIEL'S EXPERIENCE

Chapters 6 through 11 provide idiographic descriptions of each participant's inner experience. These chapters are divided into sections based on the salient characteristics that emerged across the participant's sampled moments. Following these six idiographic profiles, Chapter 12 reviews the commonalities and differences of inner experience across all six participants. Chapter 13 provides a discussion of the results and implications for future research.

Daniel is a 49-year old, Caucasian, gay male who sampled with us from April to June 2012. Daniel met criteria for bipolar disorder as measured by the SCID-I (First, Gibbon, Spitzer, & Williams, 1997). Daniel received a CES-D (Radloff, 1977) score of 23, suggesting a clinically significant level of depressive symptoms. He received a Global Severity Index score of 0.78 on the SCL-90-R (Derogatis, Lipman, & Covi, 1973; Derogatis, 1994), suggesting the presence of psychological difficulties. Daniel was not receiving any treatment for bipolar disorder at the time of sampling.

Daniel sampled on eight separate occasions, collecting a total of 43 sampled moments. Five of these sampled moments occurred during the first day of sampling, which is generally considered a training day and subsequently will not be discussed. After discarding the samples from the first day of sampling, we were left with 38 moments of experience. The following salient characteristics of Daniel's inner experience were identified.

Daniel sometimes had considerable difficulty conveying his inner experiences to us during the interviews despite being quite clear and believable in his descriptions of his

experiences once he was able to articulate them. At times he was also observably cautious, struggling to provide high fidelity reports of his experience. That is, we understood him to have substantially high fidelity apprehensions of his experience but difficulty describing them. It is our understanding that Daniel's difficulties in describing his inner experience were in part caused by the complexity of his inner experiences.

Feelings

Nine (24%) out of Daniel's 38 samples involved a feeling. Furthermore, seven additional samples involved a thought/feeling, or an emotional experience that is so entwined with a cognitive/thinking process that it is impossible to label the experience as either just feeling or just thinking; rather the experience is a combination of both. Thus in total, 42% of Daniel's samples involved some aspect of an emotional experience.

In terms of valence, Daniel experienced almost an equal number of positive and negative feelings. Three of the emotional experiences involved a recreation or re-experiencing of a past experience. Six of Daniel's emotional experiences were accompanied by bodily sensations.

Daniel experienced an almost equal number of positive valence and negative valence feelings associated with bodily sensations. All of the bodily sensations associated with feelings were experienced in some aspect of his core (e.g., torso, stomach, chest). The following is an example of a sample with a feeling associated with bodily sensations.

Sample 3.3: Daniel had just finished a phone conversation that involved a heated discussion. At the moment of the beep, he was feeling angry. His anger was decreasing as he felt angrier before the moment of the beep. His anger involved tension/tightness in his chest and upper abdomen muscles. He was also thinking

that he is in control now of his emotions/that it'll be okay. His thinking was growing, getting stronger in his experience. His thinking was not experienced in words.

This sample also reflects something seen in a number of other samples, namely the direct experience of the changing or shifting intensity of aspects of his experience. In this case Daniel experiences both his feeling decreasing in intensity and his thinking increasing in intensity or salience. This is unusual as most subjects find the “slice” of experience captured through sampling to be fixed in intensity within the moment of the beep.

Daniel had three samples in which he experienced a feeling that was a recreation or a re-experiencing of a past emotional experience. The following sample provides an example of this type of phenomenon.

Sample 4.1: Daniel was watching a commercial about a video game on TV. At the moment of the beep, Daniel was attending to the commercial and re-experiencing excitement/anxiousness similar to what he had felt when he played these video games as a child. He was experiencing the excitement/anxiousness in his chest, part of which was the sensation of his heart racing and him taking deeper breaths. He was also somehow explicitly considering or knowing that his excitement/anxiousness was related to his past, that he was re-experiencing those feelings.

The following sample provides another example of an emotional experience which involved a re-experiencing of a past experience. In this sample, Daniel was re-experiencing a sense of shock he felt when he saw the barracks where he would be staying while serving in the military.

Sample 6.6: At the moment of the beep, Daniel was re-experiencing being in open barracks in Hawaii. He was innerly seeing, from first-person perspective as if he was standing in the middle of the barrack, two very long rows of bunk beds. The barrack had green tile floors. The barrack he was innerly seeing was the actual barrack to which he had been assigned when he was stationed in Hawaii. He also was re-experiencing being there and had a feeling of negative shock about what he had gotten himself into/that it wasn't what he expected.

Daniel had six samples that involved a thought/feeling. These experiences included both an emotional and a cognitive/thinking process. The emotional and cognitive processes were intertwined to such a degree that they could not be separated into two distinct, separate experiences. Rather, the experience was both emotional and cognitive.

Sample 8.3: Daniel was on the computer looking at a job opening for prosthetics. At the moment of the beep, he was feeling regretful/somber and inseparably thinking several things, Why didn't I apply for it in the past; I did make orthotic supports for shoes before; I let myself down.. The feeling would not exist without the thoughts and the thoughts would not exist without the feeling. The experience did not have a location, but somehow involved a felt emptiness/missing something. The three thoughts were distinct, clear, and equally present.

The following sample provides another example of a thought/feeling experience. In this sample, Daniel had been watching a TV program about Dick Clark passing away and was experiencing a feeling/thought about Dick Clark's death.

Sample 3.1: At the moment of the beep, Daniel was somber, which for him seemed to be primarily or entirely cognitive experience involving the realization that Dick Clark will not be there anymore/that we won't see him anymore/if he saw him on TV from now on, it would be recordings of him. This realization did not involve any words or sensations. Daniel was also paying attention to the TV show, though this was somewhat less salient than his somberness/realization that Dick Clark is gone.

In sum, feelings occurred in slightly less than half of Daniel's samples and were his most dominant form of experience across samples. His experience of feelings varied substantially including re-experiencing past emotional experiences, complex bodily sensations, and experiences that involved both feeling and cognitive/thinking processes.

Meta-Awareness

Meta-awareness was present in 10 (26%) of Daniel's 38 samples. This is an extremely high frequency of meta-awareness (Heavey & Hurlburt, 2008). Meta-awareness refers to an experience in which a person was monitoring or noticing his mental processes or experiences as they occurred. For example:

Sample 5.1, Daniel was in his backyard cleaning his pool. At the moment of the beep, he was noticing the bright, clean greenness of the plants in his backyard. He was also experiencing calmness, and (separately and simultaneously) noticing this psychological calmness. This was related to not having anything to worry about and being done for the day.

The portion of Daniel's experience that was experiencing and (separately and simultaneously) noticing his psychological calmness is an example of meta-awareness.

Meta-awareness generally involves two levels of experience, first the experience and second the active, ongoing monitoring or noticing of that experience. In this sample, Daniel was experiencing psychological calmness and was also separately noticing that he was experiencing psychological calmness.

Four (40%) of the ten meta-awareness samples involved meta-awareness of a feeling. Two of these meta-awarenesses regarding feelings involved Daniel monitoring his feelings and noticing how they related to past feelings. One of these samples was Sample 4.1, described previously, where Daniel was explicitly aware that his excitement/anxiousness was a re-experiencing similar to what he had felt when he played video games as a child. He was aware that his excitement/anxiousness was related to the past, that he was re-experiencing those feelings. The following sample provides another example.

Sample 5.2: Daniel was working in his backyard. At the moment of the beep, he was feeling the heat radiating off the rocks. He was also recognizing that he was relaxed earlier and that he was not currently relaxed. He was also feeling frustrated which he experienced as tenseness/uncomfortable in his chest.

Simultaneously he was recognizing that he had been relaxed earlier but that he was not currently relaxed. This was a meta-awareness because not only was he feeling frustrated, he was also explicitly comparing this frustration to a recalled relaxation.

In both of these samples, Daniel was experiencing an emotion (excitement/anxiousness and frustrated, respectively) and monitoring or noticing the relation of that emotional

experience to a past emotional experience (how he felt when he played video games as a child and how he felt earlier that day, respectively).

The remainder of Daniel's meta-awareness experiences involved his noticing aspects of what he was doing.

Sample 7.4: Daniel was walking into the kitchen, coming in from outside and headed toward the living room. At the moment of the beep, Daniel was hearing a commercial about the dangers of texting and driving that was playing on the TV in the living room. In addition to listening to what they were saying, which was the primary salience of his experience, he was simultaneously thinking in a non-specific, incipient way about the dangers of texting and driving and also simultaneously was noticing that he was speeding up to get into the other room to see what they were showing. His thinking did not have any words or other symbols nor was it more specific than about the dangers of texting and driving, but it seemed to have implied within it or in some context way present his history of catastrophic traffic scenes he had witnessed in his time as an EMT. His hurrying was experienced as him quickly moving through space to get to where he could see the TV, and he was also noticing that he was starting to step faster in order to get to the TV.

In this sample, Daniel's noticing that he was walking more quickly in order to see what was happening on TV is an example of meta-awareness.

Doing Experience

Daniel had four (11%) samples that involved him attempting to control or alter or manipulate emotional or thinking experiences. This has been called the "doing" of

experience (Hurlburt 1993; Hurlburt & Raymond, 2011). In the following sample, Daniel attempted to control the intensity of the emotion that he was experiencing.

Sample 4.4: Daniel was watching the *Price is Right* on TV. They were playing a game where the contestant tries to guess each digit in the price of a car. For each guess, the contestant has to pay a dollar for every number she is away from the correct value of the digit. If the contestant runs out of money, she does not get the car. Daniel had been silently playing along, guessing the required digits. At the moment of the beep, Daniel was feeling euphoria/high/excitement regarding the fact that he had guessed the right number, and that he would be being closer to winning the car if he were the contestant. He was also simultaneously feeling bad/sad for the contestant who picked the wrong number and was further away from winning the car. Neither emotion was accompanied by physical sensations or any bodily or other experiential aspect. Those are two simultaneous feelings, neither of which qualifies as a meta-awareness. However, at the same moment he was also aware of both feelings in a self-reflective and self-monitoring way: he was actively balancing the feelings in the active attempt to be neither too euphoric/high/excited nor too sad. The two feelings, euphoria/high/excitement and bad/sad existed simultaneously for Daniel. He understood himself to be switching, at will, his attention/involvement/experience back and forth between ongoing and known-to-be-ongoing, feelings. At the moment of the beep, he was more into the euphoria/high/excitement, which was intensifying. However, his simultaneous self-monitoring process detected that this intensification was problematic (the contestant is losing, so I shouldn't be too happy), so he was

simultaneously purposefully aiming his attention at the sad-for-contestant feeling as a way of reining in his euphoria/high/excitement. Daniel said that this process was “like his brain was spinning” but we did not adequately explore what he meant by that.

In this experience, Daniel was not only having two simultaneous feelings (euphoria/high/excited and bad/sad), but he was also simultaneously explicitly monitoring those feelings. Furthermore, using that monitoring of his feeling, Daniel was actively and purposefully adjusting his attention to the separate feelings to balance their relative intensity. Hurlburt (Hurlburt 1993; Hurlburt & Raymond, 2011) has called the attempt to control or alter or manipulate emotional or thinking experiences the “doing” of experience. For Daniel this occurred frequently as part of his meta-awareness.

Daniel had three additional samples similar to Sample 4.4 that included “doing experience.” One of these samples, Sample 3.3, was discussed in the previous Feelings subsection. In that sample, Daniel was feeling angry and was trying to control his emotional experience. Another example of doing of experience was in Sample 7.4 discussed in the Meta Awareness subsection. In that sample, Daniel was starting to and noticing that he was stepping faster in order to get to the TV. Overall, the doing of experience was observed most frequently with Daniel’s emotional experiences.

Sensory Awareness

Sensory awareness occurred in 11 (29%) of Daniel’s samples. Sensory awareness refers to an experience in which one pays attention to a specific sensory aspect of something within one’s environment (Hurlburt & Heavey, 2002; Hurlburt, Heavey, &

Bensaheb, 2009). Sensory awareness may be bodily (e.g, an itch, tingle, pain) or external (e.g., noting the color of grass).

Daniel's sensory awarenesses encompassed a variety of sensory modalities, with four (37% of his sensory experiences) instances focused on visual aspects, three (27%) samples focused on textural characteristics, two (18%) focused on auditory aspects, one (9%) instance focused on taste, and one (9%) sample with multiple, different sensory aspects (visual and textural). The following is an example of one of Daniel's visual sensory awareness experiences.

Sample 5.1: Daniel was in his backyard cleaning his pool. At the moment of the beep, Daniel was noticing the bright, clean greenness of the plants in his backyard. He was also experiencing/noticing his psychological calmness. This was related to not having anything to worry about and being done for the day. The calmness was not experienced physically.

In this example, Daniel was drawn to the bright, clean greenness of the plants. This aspect of his experience was purely sensory in that he was engrossed in the sensory aspects (bright, clean, greenness) of the grass and was not aware of any meaning or interpretation regarding the grass. This is also another instance of meta-awareness.

Sample 5.4 provides an example of one of Daniel's sensory awareness experiences focused on textural aspects. In this sample, Daniel was experiencing two sensory awarenesses with both experiences aimed at textural sensations.

Sample 5.4: Daniel was doing dishes, specifically scrubbing a dish with a sponge. He was holding the sponge with the palm and fingers of his left hand, so that as he scrubbed, the side of his hand actually extended a bit past the leading edge of the

sponge. At the moment of the beep, he was noticing the texture of rough bread crumbs along with the sensation of the water. He was feeling the rough bread crumbs and the water with the side of his left hand above his pinky.

This sample is a purely sensory experience in that Daniel was drawn to the sensory aspects of the textual sensations (texture of rough bread crumbs and sensation of water) and was not aware of anything else at the moment.

Two of Daniel's samples that included sensory awarenesses occurred while he was engrossed in some task. In both of these experiences, the physical *doing* of the task was not in his experience, but rather his experience was aimed at the sensory *aspects* of the doing. For example, in Sample 4.3, Daniel was ironing his shirt. Rather than being focused on the *doing* of ironing his shirt (i.e., focused on moving the iron), Daniel's experience was focused on the sensory *results* of his ironing (i.e., adequate creases in his shirt and no burns).

Sample 4.3: Daniel was ironing his work shirt. At the moment of the beep, he was intently seeing the crease he was ironing in front of the iron (with the intention of making a good crease) and the shirt as it emerged from the back of the iron (with the intention of checking to see that it had not been burned or otherwise marked in the ironing process). That is, his experience was seeing the shirt. He also was aware that others would see the shirt and check it out for creases and burn marks (so he had the intention of not creating some). He was not thinking of anyone in particular, but others in general.

In this example, Daniel was noticing the sensory aspects of his ironed shirt. His experience did not include the physical doing of the task. Similarly, the following sample

provides another example of a sensory awareness that occurred while Daniel was focused on doing something. In this sample, Daniel was wrapping his foot with an Ace bandage. His experience was focused on the sensory aspects associated with the bandage being wrapped on his foot. His experience did not include an experience of him actively wrapping the bandage on his foot.

Sample 6.4: Daniel was sitting on the couch wrapping his leg in an ace bandage.

At the moment of the beep, he was engaged in the task visually and sensorially.

He was visually attending to the wrapping of the bandage, trying not to make it too tight and not making wrinkles, wrapping it correctly. He was also with his foot feeling the tightness of the bandage and with his fingers the tension with which he was pulling the bandage as he wrapped.

In two of Daniel's samples, the majority of Daniel's experience was blank but he was still experiencing a minimally salient sensory awareness. For example, in Sample 7.6, Daniel was eating a salami and cheese sandwich. He tasted the elements of the sandwich, but estimated that the tasting encompassed less than 10% of his experience and the remainder of his experience was empty. Daniel was confident that the majority of his experience was blank and that there was still a less salient experience of sensory awareness present.

Discoordinated Experiences

Daniel had several experiences in which it appeared that the threads of his experience may be uniquely intertwined and controlled. Specifically, Daniel separated and decreased/increased the saliency of the threads of his experience.

For example, in Sample 2.1, Daniel had been watching television. At the moment of the beep, he was hearing the noise from the television. He was not understanding the meaning of what was being said on the television, rather he was hearing the sound from the television. That is Daniel was hearing the sounds of speech on the television without extracting the meaning of speech.

Similarly, in Sample 2.4, Daniel was playing a game of Bejeweled on his iPhone. He was simultaneously innerly seeing a different and distinct game of Bejeweled. With regards to the coloring of the game, Daniel's inner seeing was different than the actual game he was playing in that his inner seeing included black and white shapes that were not present in the actual game. It was unknown if Daniel was seeing the shapes in his inner seeing as black and white or if the shapes in his inner seeing were not seen in color. It is also possible that the sensory aspect of this experience was not articulated or focused on, whereas the meaning of the game was expressed. Daniel may have the ability to separate threads of experience that are usually integrated and then choose what threads to hone in on. Alternately, the typical automatic "coordination" of different threads of experience may not always occur in Daniel's experience.

Undifferentiated Threads

Daniel had several experiences where he experienced integrated threads of experience that merged to create distinct, blended forms of experience. For example, as discussed previously under the Feelings subsection, Daniel had six samples that involved a thought/feeling. These experiences were a blend of emotions and cognitions intertwined to such a degree that they could not be separated into two distinct, separate experiences.

Daniel also may have had a sample that contained an integrated experience of sensory awareness and emotion. In Sample 6.5, Daniel was watching TV. At the moment of the beep, he was listening to the relaxing/soothing sounds of an older song a woman was singing. Daniel may have also felt relaxed. In this experience the sensory aspects of listening to the relaxing/soothing sounds of the songs and feeling relaxed appeared to be blended or intertwined into a distinct experience that was not a purely sensory awareness nor a purely emotional experience, but he was not sure. That is, Daniel could not (or at least did not) experientially distinguish between the recognition of a song's being relaxing and the feeling of relaxation.

Another phenomenon that emerged from Daniel's samples is the presence of incipient thinking, thinking processes that are not fully coalesced. It is possible that these experiences are incidents of undifferentiated threads of experience similar to the examples described above. Daniel had three samples that involved incipient thinking.

Sample 7.1: At the moment of the beep, Daniel was watching *Southpark* on TV, but he was barely attending to it, perhaps 5% of his experience. His experience was mostly involved with the words "Japan," "electronics," and "technology." These three words were somehow present to Daniel, perhaps heard or perhaps just the idea of the words with no directly experienced words present in any form. All three words/ideas were present at the same time. Daniel did seem fairly confident that it was the words that were present, not merely the ideas of concepts that the words connoted. He was not at all confident about the manner in which the words presented themselves. Daniel believes the words were or at least might have been the beginnings of some not yet directly experienced thinking, as if the words

would have sometime later coalesced into an explicit thought about something like how Japan produces a lot of electronics and technology.

In this example, Daniel was experiencing what might be the beginnings of a thought that was not yet fully developed or coherently put together into a clear idea. Daniel had two other samples containing an incipient experience.

Sample 7.4: Daniel was walking into the kitchen, coming in from outside and headed toward the living room. At the moment of the beep, Daniel was hearing a commercial about the dangers of texting and driving that was playing on the TV in the living room. In addition to listening to what they were saying, which was the primary salience of his experience, he was simultaneously thinking in a non-specific, incipient way about the dangers of texting and driving and also simultaneously was noticing that he was speeding up to get into the other room to see what they were showing. His thinking did not have any words or other symbols nor was it more specific than about the dangers of texting and driving, but it seemed to have implied within it or in some context way present his history of catastrophic traffic scenes he had witnessed in his time as an EMT. His hurrying was experienced as him quickly moving through space to get to where he could see the TV, and he was also noticing that he was starting to step faster in order to get to the TV.

In this sample, Daniel was thinking in a non-specific, incipient way about the dangers of texting and driving. The experience of incipient thinking is a rare phenomenon. Typically people either have a thought present or do not. The hint of the beginnings of thoughts is not a frequently occurring phenomenon.

Overall, incipient thinking and undifferentiated threads of experience are relatively rare phenomenon. Most people who have participated in DES either have a thought present or do not. The hint of the beginnings of a thought or unclear boundaries between processes of experience is not common.

Nothing in Experience

Daniel also frequently experienced moments in which there was nothing or very little present in experience. Nine (24%) of Daniel's 38 beeps are best characterized as having nothing in experience. Daniel consistently experienced moments in which there was nothing in his experience across every sampling day. The following are a few examples of moments in which there was nothing in his experience:

Sample 4.5: Daniel was walking from his kitchen to his living room holding a cup of coffee. At the moment of the beep, nothing was in his experience.

Sample 4.6: Daniel was sitting on the couch drinking a cup of coffee. The TV was on, and his eyes were aimed at it, but at the moment of the beep, nothing was in his experience.

Sample 7.5: Daniel was folding towels. Nothing was in his experience - not that task, not the feeling of the towel, not the seeing of the towel.

Daniel also had a three moments of experience in which the majority of the experience could be characterized as blank, but that there was still a presence or hint of a sensory awareness. For example, in Sample 4.2, Daniel was watching TV and his experience was mostly blank. However, there was a small (5-10% of his potential experience) visual experience of the commercial on the TV, specifically the lion in the commercial.

Inner Seeing

Daniel reported inner seeing in six (16%) of his 38 samples. Inner seeing refers to an experience of seeing something that is known to be not actually present (Hurlburt & Heavey, 1999). Daniel did not have samples containing inner seeing on every sampling day. He did not experience any inner seeing on the third, fourth, fifth, and seventh day of sampling. However, he experienced one inner seeing on the second day of sampling, two inner seeing on the sixth day of sampling, and three inner seeing on the eighth and final day of sampling. Despite not experiencing inner seeing every sampling day, Daniel was confident and believable in his description of his inner seeing experiences.

We have already discussed one of these samples previously, Sample 6.6 under the Feelings subsection. In that sample, Daniel was innerly seeing from first-person perspective as if he was standing in the middle of the open barrack, two very long rows of bunk beds. This was a re-experiencing of Daniel being in the open barracks in Hawaii. This inner seeing was related to a re-experiencing of an emotional experience, a feeling of negative shock.

The remaining five instances of inner seeing were all compelling from various standpoints, including multiple and complex inner seeing and inner seeings which appeared to have a reality on their own. The following is an example of one of Daniel's inner seeing experiences:

Sample 8.6: Daniel had been watching the newer version of *Planet of the Apes*. At the moment of the beep, he was innerly seeing a scene from the 1970s version of *Planet of the Apes*. He was seeing Charlton Heston walking on a beach with the head of the Statue of Liberty lying on the sand. Daniel was seeing Charlton

Heston from the perspective of looking down at the front of Charlton Heston, as if Daniel was standing on some nearby cliffs and Charlton Heston was walking towards him. The statue's head was on the left of Charlton Heston. Daniel could not detect movement in what he was seeing; he was unsure if he was seeing a fixed scene, possibly from the movie poster, or a portion of the movie, but one where there was little or no movement. Although most of his attention was involved in the inner seeing, perhaps 70%, Daniel also experientially knew that his inner seeing was of a movie and that it was not reality. This knowing was explicit and distinct, perhaps 30% of his ongoing experience.

In this example, Daniel was experiencing both an inner seeing and less saliently in his experience, a meta-awareness regarding the reality of his inner seeing.

One of Daniel's inner seeing involved two separate and distinct inner seeings that were present simultaneously at the moment of the beep. These inner seeings also appeared to have a reality on their own such that even when not in "view" they still existed:

Sample 6.1: Daniel was watching Cold Case on TV. The characters on the show were looking at a very bloody homicide victim who had been stabbed repeatedly. At the moment of the beep, Daniel was innerly seeing a series of scenes, two of which were present, that were recreations of things he experienced earlier in his life when he was a paramedic. These scenes were side-by-side and moving right to left with one going out of his view as the other was entering, but both were visible at the moment of the beep. The inner seeing that was primarily in his view was a bush with a couple of feet of human intestines coming out of the left side of

the bush and another couple of feet of human intestines coming out of the right side of the bush. He was seeing this from a first person perspective, looking up at the bush with the bush approximately 2 or 3 feet from him. This seemed like an accurate re-seeing of what he had seen when he responded as a paramedic to a plane crash. This inner seeing was more vivid to him than the second inner seeing because he was he was more focused on it. The second inner seeing was of a human leg lying on the ground. This was something he had seen when he responded to a bad car crash. Daniel was seeing the leg from ankle to below the knee. He could not tell from what he was seeing if the leg was attached to a body. The seeings moved from right to left, fairly quickly but not rushed (perhaps 2 seconds to make the transit). As they moved into the center of his field they became more vivid and as they moved left out of the center they became less vivid; that is, the intestine bush seeing was more vivid than the leg seeing. Both (all) of these seeings occupied the full vertical extent of his visual field - that is, they were big, and it was like he was seeing the bush from up close, not seeing a picture of the bush from up close.

Another one of Daniel's inner seeing experiences seemed to have a reality on its own such that it was changing without Daniel's conscious effort or control. This was also unusual as Daniel was physically playing a game on his iPhone, Bejeweled, and was innerly seeing a separate and distinct game of Bejeweled.

Sample 2.4: Daniel was on his cell phone playing the game Bejeweled. At the moment of the beep, he was playing the game on his phone and was innerly seeing a different game of Bejeweled from the one on his phone. The game he

was innerly seeing had a different pattern of shapes/colors. The game he was innerly seeing also included black and white shapes, which the real game on his phone did not. The interviewers of this sample were unsure if the shapes were black and white or if they were shapes not seen in color. The game he was innerly seeing was perhaps ten feet across, or perhaps size didn't actually matter as it filled his entire visual field, and they were not as clear as the real game on his phone. The pieces on the game he was innerly seeing appeared to be moving on their own in a rapid and more or less random pace. Daniel was also recognizing the difference between the game on his phone and the game he was innerly seeing.

In this example, Daniel was both playing the game on his phone and innerly seeing a different version of the same game essentially playing itself. With regards to the coloring of the game, Daniel's inner seeing was different than the actual game he was playing in that his inner seeing included black and white shapes that were not present in the actual game. It was unclear if Daniel was seeing the shapes in his inner seeing as black and white or if the shapes in his inner seeing were not seen in color (i.e., the colors may not have been completely articulated).

A final example of Daniel's inner seeing example involves a transparent inner seeing in which he saw reality through what he was innerly seeing:

Sample 8.2: Daniel was outside his house smoking a cigarette. At the moment of the beep, he was innerly seeing his imagined college diploma (which he had just earned). The diploma was partially transparent. He was seeing it about 15-20 feet out in front of him. He saw his actual neighborhood behind and somewhat

through the diploma. The diploma took up much of his visual field even though it was 15 or so feet from him. The diploma had black lettering, but the lettering and the diploma was not very clear. Daniel saw the borders of the diploma distinguishing the semi-transparent diploma from the rest of his seeing. Daniel was more focused on the diploma than seeing the neighborhood behind and around it.

This inner seeing was different from his other inner seeing samples in that his inner seeing appeared transparent and out in front of him, allowing him to see “reality” (his neighborhood) through his inner seeing (the diploma).

Overall, Daniel’s inner seeings included experiencing multiple inner seeings simultaneously, complex and detailed inner seeings, and inner seeings that seemed to have a reality of their own.

Unsymbolized Thinking

Unsymbolized thinking refers to the experience of thinking a clear and specific thought without the content being represented in words, images, or other symbols (Hurlburt & Akhter, 2006). Daniel had one experience (3% of his sampled moments) containing unsymbolized thinking.

Sample 5.5: Daniel was out front of his house smoking a cigarette when a car just drove by. At the moment of the beep, he was thinking that the car was not from his neighborhood. This thought was not experienced in words or images.

In this sample, Daniel was confident that the wondering was directly experienced without words or other symbols present. The thought content about the car not being from his

neighborhood was clear and differentiated. This sample is similar to unsymbolized thoughts described by other participants.

Inner Speaking

Daniel did not experience inner speaking in any of his samples. Inner speaking refers to an experience of speaking words in one's own voice without the presence of external sound. Previous DES studies have found inner speaking with a frequency of approximately 25% across participants, though approximately 17% of participants had no instances of inner speaking (Heavey & Hurlburt, 2008).

Discussion

Daniel was a motivated participant who observably worked to capture and provide high fidelity reports of his experience. Daniel often struggled to describe his experiences, although that struggle appeared to lessen as sampling continued. Although there is no way to know for sure, his difficulties in describing his experience may have been related to the complexity of his inner experiences or it may have been due to his concern about giving accurate descriptions of his experience. It may also have been due to something about his actual experience, though it did seem he was eventually able to provide clear, believable descriptions of most moments of his experience.

Daniel experienced some aspect of feelings in almost half of his sampled moments, which is well above the frequency of feelings for most subjects. Other commonly occurring phenomena of experience for Daniel included sensory awareness (29%), meta-awareness (26%), and blank moments (24%) which occurred in approximately one-fourth of his samples. Although having sensory awareness present in 29% of samples is common, the frequency of meta-awareness and blank moments in

Daniel's experience were far above what is typical. Daniel had below-average frequencies of unsymbolized thinking (3%) and inner speaking (0%). These two phenomena can be considered directly experienced cognition. In other words, Daniel did not experience much cognition. Rather, his thinking processes were best described as either incipient or not coalesced thoughts, or cognitive processes enmeshed with emotional experiences.

Another finding of Daniel's inner experiences was the presence of oddly intertwined threads of experience, sometimes seeming to be uncoordinated. Daniel appeared capable of separating, coalescing, and decreasing/increasing the saliency of specific threads of his ongoing experience. Similarly, Daniel often was "doing" experience, that is actively monitoring and adjusting or manipulating his emotional or thinking experiences.

CHAPTER 11

IDIOPHIC DESCRIPTION OF JANE'S EXPERIENCES

Jane is a 41-year old, Caucasian female who sampled with us from May to July 2012. Jane met criteria for bipolar disorder as measured by the SCID-I (First, Gibbon, Spitzer, & Williams, 1997). Jane received a CES-D (Radloff, 1977) score of 34, suggesting a clinically significant level of depressive symptoms. She received a Global Severity Index score of 1.49 on the SCL-90-R (Derogatis, Lipman, & Covi, 1973; Derogatis, 1994), suggesting the presence of psychological difficulties. Jane was taking the following medications at the time of sampling: Geodon, Buspirone, and Ambien.

Jane sampled on ten separate occasions, collecting a total of 43 sampled moments. Three of these moments occurred during the first day of sampling, which is generally considered a training day and subsequently will not be discussed. After discarding the samples from the first day of sampling, we were left with 40 moments of experience.

Jane experienced more difficulties working the beeper than most DES participants. For example, on the third day of sampling Jane must have missed a beep which resulted in the beeper going into "chirp mode" where it emitted continuous distinct chirps close together in time. The "chirp mode" sounds distinctly different than when the beeper is emitting beeps in its usual continuous beep. When most participants experience the "chirp mode" they either turn off the beeper to reset it or call the researchers for help with the beeper. Jane did not notice that the beep sounded different and tried to keep responding to each chirp in the same way that she was instructed to respond to each beep. Because of her difficulties, we disregarded sampled moments that were collected from the chirps. Jane had other beeper difficulties as well including not collecting six samples

each day because for some reason all six beeps did not occur. The cause of her beeper difficulties was unclear. The researchers could not find anything wrong with her actual beeper.

Overall, Jane seemed to have more difficulties with the DES task than do most participants. Specifically, Jane struggled to identify what was in her experience at the moment of the beep. Most of her descriptions seemed to involve a rudimentary noticing of her environment and/or her behaviors. She had a few glimpses of coherent inner experience, but even these experiences seemed more vague and unclear than the inner experiences of most DES participants. As a result, it was difficult to be confident regarding the characteristics of Jane's inner experience. The following sections provide an overview of Jane's sampling.

Little or Nothing in Experience

Jane seemed mostly to describe what she was doing at the moment of the beep rather than describing what was in her experience at the moment of the beep. DES participants commonly comment on behaviors on the first day of sampling but improve in their skill of paying attention to their inner experience on subsequent days of sampling. Jane did not improve in her ability to apprehend her inner experience, perhaps because she had little or no inner experience much of the time.

Jane had six sampled moments (15%) that we are fairly confident that there was nothing in Jane's experience. The following provides a few examples of sampled moments in which it seemed like there was nothing in Jane's experience.

Sample 2.5: Jane was tired of listening to music and was getting up to check on her kittens. At the moment of the beep, there was nothing in her experience.

Sample 4.5: Jane had just finished reading an article on her iPhone about Fergie and how there was a rumor on Twitter that Fergie had died. At the moment of the beep, there was nothing in Jane's experience.

Sample 9.4: Jane had been getting in position to pee (she was in the desert and was going to pee beside a truck). At the moment of the beep, she was adjusting her shorts so she did not pee on them. To our knowledge, this was a physical, just doing experience. She was not paying attention to any particular aspect of moving the shorts or the notion that she needed to move them. She was just adjusting them.

In each of these three samples, Jane did not seem to have anything in her experience.

The comparison between samples 2.5 and 9.4 demonstrates how Jane had sampled moments in which there seemed to be nothing in her experience across sampling days.

Jane had 23 sampled moments (58%) that involved her attending to something within her environment with it being difficult to determine whether she was describing an experience or was simply describing events in her environment. Seven of these sampled moments involved her describing herself as listening or hearing, but it was difficult to discern whether she was describing an experience or was simply describing ongoing auditory events in the environment. The following sample provides an example of this phenomenon.

Sample 2.3: Jane was listening to Simply Red on her iPod and was about to switch to a new song. At the moment of the beep, she may have felt bored because the song wasn't interesting, though it was difficult to determine with confidence if there was anything in her experience.

In this sample, it was unclear what Jane was experiencing at the moment of the beep. It is possible that she had nothing or very little in her experience and instead she described what she was doing at the moment of the beep—that Simply Red was playing on her iPod but she was not hearing it or otherwise attending to it. However, it is also possible that she was experientially hearing Simply Red. We were unable to tease apart those possibilities. Similarly, she found the song boring, but we were unable to tease apart the possibilities that boredom was experienced at the moment of the beep or that boring was an after-the-fact characterization of the song. Behaviorally, she was about to switch her iPod to a new song. It is unclear if that behavior was in her experience.

The following provide two additional samples in which we could not discern whether she was experientially listening to or hearing auditory stimuli or whether auditory stimuli was simply occurring in the environment at the moment of the beep.

Sample 6.2: Jane was lying on her bed. At the moment of the beep, she was moving her sheet and was hearing her kittens play. She was not orienting herself to what she was hearing, but was passively listening. The hearing of her kittens was more salient than moving the sheet, but neither was very salient in her experience.

Sample 10.6: Jane was in the process of climbing into the truck. At the moment of the beep, she was hearing various sounds: fireworks, firecrackers, bottle rockets, and ATVs. She was not paying attention to any one specific sound and was not focused the auditory aspects of the sound; she was just hearing them all at the same time. She was also using her left hand to help herself climb into the truck. Although it was difficult to feel confident about this, she said this was in

her experience but that she was not paying attention to anything specific about getting herself into the truck, that it was more of a global, physical experience. In each of these samples, we could not confidently conclude whether the listening or hearing (i.e., passively listening to her kittens play, hearing the sounds of fireworks, firecrackers, bottle rockets, and ATVs) were actually in her experience or if she was describing ongoing auditory events in the environment. Behaviorally, Jane was confident that these various sounds were happening. However, Jane had a difficult time clarifying what aspect of these things was in her experience, if any at all.

Jane had five samples that involved her describing herself as watching or seeing, but again it was difficult to discern whether she was describing an experience or was simply describing ongoing visual events in the environment. The following were examples of this type of sample.

Sample 2.1: Jane was watching a music video for the new Men in Black movie on her iPod. At the moment of the beep, she was paying attention to the music video. She was more focused on the visual aspect of the music video, but was also listening to the song. There may have also been some experience of trying to get a sense of the music video as a whole/trying to figure out how it related to the movie.

Sample 9.2: Jane was still riding in the backseat of a truck. At the moment of the beep, she was looking out the front windshield. She was seeing the roadway in front of them and was not paying attention to anything in particular. She was also adjusting in her seat to look out the window but to the best we could understand, this was minimally, if at all, in her experience, perhaps 5-10%.

In both of these samples, Jane was confident that she was watching or seeing something, but we could not determine to what degree if any those things in her experience at the moment of the beep. For example, in Sample 9.2, Jane was looking out the front windshield and seeing the roadway in front of her. It is possible that seeing the roadway was in her experience at the moment of the beep. It is also possible that the roadway was in her visual field, but was not actually experienced at the moment of the beep.

Jane also had 11 sampled moments that involved her describing herself as doing something, but we could not be confident that what she was doing was an experience or was simply what she in the act of doing. The following provides an example of these sampled moments.

Sample 3.1: Jane was in the process of turning her sock from inside-out. At the moment of the beep, she was focused on fixing her sock. As best we could determine she was simply attending to what she was doing without any additional experience, but it was difficult to be confident of our understanding of this moment. This may have been due to the fact that the second beep came before she could write notes about her first beep.

In this sample, Jane was in the act of turning her sock from inside-out. We could not be confident that this was in her experience (e.g., experiencing herself as turning the sock from inside-out) or if this is what she was doing and there was nothing in her experience about what she was doing. The following is another example of these types of samples.

Sample 8.5: Jane was driving and had been talking to Christina about Jane wanting to start working out. At the moment of the beep, Jane was talking out

loud to Christina about maybe taking spinning classes at the gym. She could not say more about how talking was in her experience.

In Sample 8.5, Jane described herself as talking out loud at the moment of the beep. But, we could not determine to what degree, if at all, talking was in her experience. For example, it is possible that experientially, she may have been paying attention to what she was saying. She also may have been attending to how it felt to be talking (e.g., their mouths were moving). However, Jane could not describe how, if at all, she experienced herself as talking.

These three types of experiences (i.e., describing hearing/listening, describing watching/seeing, and describing doing without being able to differentiate if anything was in experience) seem related. It is possible that Jane does not have much in terms of inner experience and as a result, she instead after the moment of the beep takes a quick noticing of her environment and reports what's concurrently happening. In contrast, it is possible that these events are actually in her experience – to what degree is unknown. She could have been fully, experientially attending to these events and may have experienced difficulties in articulating how they were in her experience. Our frequent difficulty being confident about Jane's ongoing experience at the moment of the beep left us unable to confidently disentangle these two possibilities.

Jane had two samples (6%) that involved her describing what seemed to be an experience, but we could not be confident if it was in her experience and if it was, what specifically was experienced. The following provides an example of one of these samples.

Sample 5.4: At the moment of the beep, Jane was reading the title of a book she was looking at, *Lords of Deliverance*. It seemed as if her experience of reading it was of innerly saying the title, though we could not be confident this was in her experience and if it was, what were the characteristics of the experience. She also was experiencing a hint of a thought or an idea, but it was so vague or indistinct that she could not say what the thought or idea was. She was also listening to a song by Ellie Goldberg, *Lights*, though this was much less salient at the moment of the beep than reading the title of the book, perhaps 15% or so of her experience. A moment before and a moment after the beep, the song had been more salient than the title of the book.

In this sample, Jane's description of reading the title of the book at the moment of the beep seemed to suggest the presence of an inner experience. However, her inability to apprehend the details of that experience makes the presence of this experience questionable. For example, most participants would probably be able to describe how the voice was present to them (e.g., innerly saying it in their own voice, seeing a mental image of the book's title). Jane was not confident that it was present exactly at the onset of the moment of the beep and could not provide many experiential details regarding her inner experience. Consistent with the samples discussed above, to what degree listening to the song was in her experience at the moment of the beep could not be discerned.

Jane also had one sample (3%) which seemed to involve a thinking experience, but we could not be confident about what if any experiential details were present.

Sample 6.1: Jane was lying down on her bed. At the moment of the beep, she was thinking about moving (to Florida). It was unclear if "to Florida" was explicitly

present of if it was just implied because that is the only place she might move to, thus “moving” implies “moving to Florida.” This thinking was not likely in words or images nor was there any more specific content/detail/focus. For example, as best Jane could apprehend, the thinking did not involve the actual act of moving or living in Florida or when she might move or whether or not it was a good idea to move or anything more specific than “moving (to Florida).” Jane was also paying attention to her kittens playing by her feet. She could hear them and (to a lesser degree) feel them on her legs. She was not paying attention to any specific details of their playing.

In this sample, Jane was convincing that somehow moving, possibly to Florida, was in her experience at the moment of the beep. However, she could not elaborate regarding how something about moving was in her experience. Based upon her description of the experience, it seemed to be more cognitive than affective in nature, although we were not very confident about that either. Overall, this experience seemed to involve little or no detail, little or no content, and little or no specificity.

Glimpse of Inner Experience

Jane had four samples (10% of her sampled moments) which appeared to involve clearer inner experience as compared to her other sampled moments. Two of these samples involved an inner seeing.

Sample 5.1 - Jane’s cat Pooh, had just knocked over a Green Lantern plastic cup and was attempting to climb on it. At the moment of the beep, Jane was saying aloud, “It’s a round cup [beep] ...” At the same time she was innerly seeing written words that said approximately the same thing, something like, “It’s a

round cup, you can't climb on it." These words were seen as a complete sentence, with perhaps each individual word not being distinct. This seen sentence was written in black, typed words on a creme colored background. She was also seeing her cat reaching for the cup, though the reaching for it was not significantly in her experience. She was also monitoring, with perhaps 20% or so of her attention, the phone ringing as she had just dialed to call the doctor to make an appointment.

In this sample, Jane experienced a coherent inner experience that was more involved than just monitoring the environment as was described in the previous section. However, Jane's description of her experience in this sample was not completely clear and it was difficult to discern the specifics about her experience. For example, Jane had difficulty telling us if she said aloud, "It's a round cup ..." or just "Round." Most participants in DES, especially on the fifth day of sampling, could make a clear distinction about what was said aloud at the moment of the beep.

Sample 4.3: At the moment of the beep, Jane was reading an article on her iPhone about an actor who had gone missing but was actually in rehab and she was simultaneously innerly seeing the words she was reading. She saw each word as she read them looking the same as they did on her iPhone, typed in black lettering on a white/cream background. The words were present one at a time, but they were appearing so quickly in sync with her reading that she could not say which word was present at the moment of the beep. Jane experienced the seen words as being towards the front of her head by her forehead. Jane was mostly focused on

the words she was reading on her iPhone rather than reading the words she innerly saw.

This sample is similar to sample 5.1 in that Jane described an inner experience that involved innerly seeing words. Also, Jane's description of this experience was neither as clear nor as confident as most DES participants are when they describe inner experiences from the fourth day of sampling.

Jane also had a sample that involved a possible inner speaking experience, although her account of the experience was vague and unclear.

Sample 6.1: Jane was on her iPhone logging into her Facebook account. At the moment of the beep, she was focused on typing "yahoo" the domain of her email address. We could not determine with confidence how this was in her experience, or even if it was in her experience. As best she could determine, she was focused visually on the screen (not the keyboard) and on the movements of her fingers, but even these statements were highly subjunctified. She may have been innerly spelling out "yahoo" as she typed the letters, but she could not provide details regarding any of the characteristics of the inner speaking. She did not know if it sounded like her own external voice, or even if it was a male or female voice. She said it was the voice she usually hears, which left us wondering if she ever has clear experiences of inner speaking.

The final sampled moment that seemed to involve an experience was Sample 4.2. In this sample, Jane seemed to experience a sensory awareness.

Sample 4.2: Jane was getting into bed and was pulling a blanket over her. At the moment of the beep, the primary focus of her experience was feeling the warmth

of her blanket on her right leg and feeling the smooth, hard feeling of the blanket with her thumb, index, and middle fingers on her right hand. She was also listening to and watching her kittens play. This was mostly auditory, hearing the kittens meow. She was also seeing them in her peripheral vision. She was also hearing music playing, but this was minimal in her experience.

In this sample, Jane was experiencing a sensory awareness of feeling the warmth of her blanket and the smooth and hard feeling of the blanket on her hands. It was difficult to discern whether the other aspects of the sample (i.e., listening/watching her kittens play) were in her experience at the moment of the beep.

In these four samples, Jane showed an ability to create inner experience beyond just monitoring her environment and behavior; however, her inner experiences in general appeared less developed and less clear than most DES participants.

Attempts to Control her Experience

There were two sampling days (day 6 and 7) when Jane stated that she was tired and actively trying to sleep while she collected her moments. However, she was not actually sleeping in any of her sampled moment. For each of these beeps, it seemed as if there was little or no experience present. The following are examples from those days.

Sample 6.3: At the moment of the beep, Jane was petting her cat, Faith. She was not paying attention to anything including any specific aspect of petting the cat. That is, she was petting the cat as a description of behavior. What if anything should count as experience is not known, probably little or nothing.

Sample 7.1: Jane was lying on her bed trying to take a nap. At the moment of the beep, she was paying attention to/talking to/petting Pooh/watching her move

around while she petted her. Jane said she was feeling Pooh's fur as she petted her (but this was not particularly convincing). She also said that she was speaking to her cat (which her report of this seemed believable as a state of nature but uncertain as a fact of experience; for example, she could not remember exactly what she was saying). She also said that she was watching how Pooh does not sit still when being petted. As best Jane could apprehend, all of these things were in her experience, though it was difficult to be confident that any of this was clearly present. She was also listening to a Shakira song although that was less in her experience.

In both of these samples, Jane was not asleep and there was little experience present. These samples are similar to the type of samples mentioned in the first section in that Jane seemed to be noticing her environment or behavior with little else in her experience.

There was also a sample that involved Jane attempting to create or change her experience because she experienced boredom. This sample (Sample 2.3) was discussed previously. Usually, Jane seemed to be going along with her environment or noticing something within her environment. She generally seemed to not actively engage her surroundings, instead being a passive observer. However, these few moments of experience suggest that Jane sometimes tries to control or shift her experience, perhaps unsuccessfully.

Discussion

Jane appeared to be a motivated participant who worked to capture and convey her inner experiences. However, Jane struggled more than any other participant in this study to capture and convey her experience. Overall, Jane sometimes had sampled

moments in which it seemed relatively clear that nothing was in her experience at the moment of the beep. Most of the time, however, it was difficult to be confident whether or not there was anything in her experience. In these sampled moments, she often described her behaviors (e.g., switching songs on her iPhone) or her environment. Her description of the environment usually did not rise to the level of sensory awareness, where someone is actively paying attention to something within the environment (e.g., noticing the red color of a truck). Rather, it seemed like Jane was usually noticing her environment in a passive, not focused, non-active way. In these sampled moments, it was difficult to discern if anything was present at the moment of the beep. There were a few times when we were confident about her having experience.

Jane did not improve in her ability to capture and convey her inner experience across sampling days. Jane collected sampled moments and engaged in an expositional interview ten times with the researchers, more than any other participant in this study. However, Jane's final sample of inner experience collected on the tenth day was as vague and unclear as her first sample of inner experience collected on the first day of sampling.

Jane's difficulty with this task could be a result of various things. First, Jane could not have much actual inner experience. We speculate that inner experience is created by individuals as they process the welter of inner and outer happenings into something coherent. The lack of improvement in her ability to capture her inner experience across sampling days is consistent with the theory that she may not have much inner experience beyond perhaps a rudimentary noticing of her surroundings. Also, Jane had four sampled moments in which she seemed to have somewhat more developed inner experiences. This undermines the possibility that it was something about Jane's inability

or unwillingness to convey her experiences that led to us being unable to determine what was present in Jane's inner experience during most sampled moments.

Another possibility is that Jane has inner experiences, but she was not focused on them or did not attend to them. Although it is difficult to rule this out, the fact that several samples contained more of what we consider experience also argues against this theory. Furthermore, the fact that Jane worked hard at the task, stuck with it for ten full sampling days, and that her reports changed little or not at all over these sampling days all undermine this theory.

Another possibility is that she has inner experience but struggles to describe those experiences to the interviewers. It is possible that she has phenomena of inner experience that we have not encountered before. As a result, our questions aimed at trying to help Jane articulate her experience might actually dilute her experience and further complicate her ability to convey her experience to us. With this possibility, Jane could capture her experience, but struggled to verbalize what those experiences were. Although we cannot rule out this theory, nothing in our interactions with Jane led us to believe it accounts for her difficulties apprehending clear inner experience. Considering the results of our sampling with Jane in total leads us to believe that the first theory, that Jane has little in the way of coherent inner experience, is the most plausible explanation for her sampling results.

CHAPTER 12

ACROSS-PARTICIPANT RESULTS AND DISCUSSION

Chapters 6 through 11 provided idiographic descriptions of the inner experience of the six participants separately. In this chapter, we examine shared features and similarities, if any, of inner experience among these participants. Three participants were selected because they met diagnostic criteria for major depressive disorder (MDD) and three participants were selected because they met criteria for bipolar disorder (BD). Thus these participants can be conceived of as both a group of six mood disordered individuals and two smaller subgroups suffering from specific mood disorders, MDD and BD. Although with such a small sample all speculations and observations must be viewed as highly tentative, shared features of experience may be related to or indicative of the inner experience of individuals with these distinct psychiatric disorders or, to the extent that the similarities span both groups, of individuals with a mood disorder in general, or as evidence that the categorizations are imperfect. What follows are our observations about the themes and shared features observable among these participants.

Difficulty with the DES Task

Five of the six participants (all but Devon) struggled with the DES task. More often and more persistently than is typical, these five participants had difficulties capturing and conveying their inner experience. They often struggled to identify the moment of the beep and sometimes even had difficulty operating the random beeper. There was variability with regard to the confidence the interviewers had regarding participants' ability to capture and convey inner experience. The one participant who did not appear to have difficulty with the DES task, Devon, was perceived as being very

believable in his accounts of inner experience and generally skilled in his ability to capture and convey his inner experiences. All of the other participants were either judged to be not highly credible reporters or struggled at times to capture and convey their experience.

Robin and Jane had the most difficulty with the DES task. Both participants seemed to have considerable difficulty identifying what was ongoing in experience at the onset of the beep. We at times struggled to discern whether anything was actually present in experience at the moment of the beep; this was especially true for Jane. In fact, as best we could determine, approximately one-quarter of Robin and Jane's sampled moments were mostly blank. Robin and Jane's descriptions of what was ongoing in experience at the moment of the beep were mostly unclear. For example, Robin often described a sequence of events and she struggled to identify at what point in the sequence of events the beep sounded. Finally, Robin and Jane did not seem to improve much across sampling days in their ability to capture and convey their inner experience. The lack of improvement across sampling days is rare for DES participants. Robin was diagnosed with MDD and Jane was diagnosed with BD, so this characteristic did not seem to be unique to one specific mood disorder.

Andrea, diagnosed with MDD, also struggled to describe her inner experience. Andrea only completed four days of sampling, whereas all of the other participants completed at least eight days of sampling, so we have fewer sampled moments from which to draw conclusions about her inner experience. She also shared with us that she did not wear the ear piece on the first three sampling days, which could have negatively impacted her ability to pinpoint the moment of the beep. Overall, her descriptions of her

inner experience were sometimes unclear, particularly experiences that were not sensory awarenesses. She did not seem to have as many mostly blank moments as did Robin and Jane; rather she seemed to have more inner experience but struggled to describe those experiences. It is difficult to determine if she would have continued to improve in her skill to apprehend and describe her experiences if she had continued sampling.

The other three participants (Daniel, Tyler, and Devon) seemed to be able to capture and convey their inner experience better than did Robin, Jane, and Andrea. However, Daniel and Tyler, both of whom were diagnosed with BD, still struggled with aspects of their experience. For example, Daniel sometimes had considerable difficulty conveying his inner experiences to us during the interviews despite being quite clear and believable in his descriptions of his experience once he was able to articulate them. Tyler had very few clear experiences except for those involving sensory awareness. For example, he had many sampled moments that involved hints of thought with ambiguity regarding whether the thoughts were present at the moment of the beep.

There are broadly two possible explanations for a participant's difficulty in performing the DES task: the task itself is not understood or difficult; or the inner experience is difficult. It is possible to tease these apart to some degree, but not entirely. For example, if a participant is fluent in verbal interchange in all areas *except* the description of sampled experience, then we can rule out language deficiency as a cause. In fact, all of our participants were able to report sensory awareness with clarity, which suggests that when experience is clear they can report it. Three skilled interviewers spent four to eight hours with each of our participants trying to discern the origin of the difficulty; we reached that the difficulties our participants' had in capturing and

conveying their inner experience may have been related to underdeveloped or absent inner experience. It is possible that this was a characteristic of some of these participants, perhaps related to their diagnosis of a mood disorder. In fact, one diagnostic criterion for a depressive episode is diminished ability to think or concentrate, or indecisiveness, nearly every day (APA, 2000). Diminished ability to think or concentrate could be impacting our participant's inner experience or their ability to report their inner experience. All of our participants endorsed elevated levels of depression on the CES-D (Radloff, 1977) at the onset of their participation in the study. If we conceive of inner experience as something that must be skillfully created (Hurlburt, 2011), then there could be a connection between what is considered a difficulty thinking and concentrating, the widely observed symptoms of depression, and difficulty forming coherent inner experience as we observed in these five participants.

The idiographic chapters were organized in order of increasing scores on the CES-D (Radloff, 1977). There was a corresponding trend between endorsed depressive symptoms on the CES-D (Radloff, 1977) and degree of difficulty with the DES task. For example, among the participants with BD, Tyler endorsed the fewest depressive symptoms and seemed to have less difficulty with the DES task compared to Jane, who endorsed the most depressive symptoms and seemed to have the most difficulty with the DES task. The corresponding trend between depressive symptoms endorsed and difficulty with the DES task for the participants with MDD was less clear. Devon endorsed the fewest depressive symptoms, followed by Ruth, and finally Andrea. While Devon had the fewest difficulties with the DES task as compared to the other two, Robin

seemed to have more difficulties than Andrea. However, we know the least about Andrea's inner experience as she participated in the fewest sampling days.

Our final participant, Devon, seemed to have little to no difficulties describing his inner experience. Devon's skill in being able to apprehend his inner experience was also notable in our sample because Devon had the most complex inner experience. It is possible that rather than having the underdeveloped inner experience that we observed in other participants, Devon actually has overdeveloped inner experience such that he puts substantial effort into constructing rich and detailed inner experience. Devon also had moments of inner experience that involved inner seeing that seemed incomplete or inner seeing that involved aspects that were not integrating. For example, he had sampled moments that involved flowey, vibraty, trasparency inner seeing. He also had inner seeings that involved elaborate and incongruous aspects. The occasional incompleteness of Devon's inner seeing may reflect a different kind of underdeveloped inner experience. The overdeveloped and sometimes not integrating inner experience observed with Devon may reduce his ability to think or concentrate on things besides his rich and complex inner experiences.

Additional research is needed to substantiate whether these are typical characteristic of the experience of people with mood disorders. For example, these could be stable characteristics of the inner experience of people who are at risk develop mood disorders. In contrast, these could be characteristics that only emerge for people when they begin to experience mood disorders. It should be noted that even if the association between lack of clarity or the existence of inner experience and mood disorders were

establish to be reliable, we still would not know which direction the causality runs, or whether it is related to some other causal factor.

The difficulties most of our participants experienced in apprehending their experience is consistent with previous DES studies that examined the inner experience of individuals with mood disorders. For example, Hurlburt (1993) found that participants in a depressed mood had more difficulties observing and articulating the characteristic of their experience as compared to when they were not in a depressed mood - it is possible that the two participants (Jane and Robin) who experienced the most difficulty with the DES task could have been experiencing a more severe episode of depression as compared to the other participants. We did not track depressive symptoms across sampling days to compare the presence or severity of depressive symptoms with characteristics of inner experience; however, such a study would be advantageous to understand the impact of depression on inner experience.

Also, Hurlburt (1993) observed that one participant who had hypomania experienced inner seeing in 95% of his sampled moments and that inner seeing were characterized by clarity, color, rich visual details, movement within the inner seeing, and differences in the clarity of the inner seeing between the periphery and the central aspect of the inner experience. The description of this particular participant's inner experience sounds very similar to the characteristics of Devon's inner experiences. Devon did not meet criteria for BD; rather he met criteria for MDD. However, BD can be misdiagnosed as MDD particularly for someone who has yet to experience a manic or hypomanic episode but as a history of depressive episodes (Angst et al., 2011). The participant discussed in Hurlburt (1993) had changes in his inner experience dependent on his mood.

For example, during his period of fatigue, his inner experience was dominated by inner seeing with abrupt edges, lacking motion, and with visual details indeterminate. Devon also had sampled moments that involved inner seeing aspects that were disintegrated and incongruous. We speculate that Devon's rich and complex inner seeing may vanish or be impacted by his mood just in the same way that the participant's inner seeing in Hurlburt (1993) was impacted by changes in his mood. It would be advantageous to sample with individuals with mood disorders for a longer period of time being better able to describe the relationship between mood and inner experience.

Another DES study examined the inner experience of older individuals who had cognitive impairment (Siebert, 2009). Participants with cognitive impairment experienced substantial difficulty with the DES. However, their difficulties seemed more pervasive than the difficulties demonstrated by our sample. For example, each of our participants had moments of experience characterized with clear inner experience, suggesting that they are able to report experience if present.

As we said at the onset, another possible explanation is that our participants did have clear inner experience but we just did not understand their experience. They may have had new distinct forms of inner experience that we did not know how to ask about in the expositional interview. It is also possible that they just struggled with communicating about their inner experience, though the fact that almost all of them were sometimes able to describe a few clear moments of inner experience argues against this possibility.

Sensory Awareness

The exception to the lack of clarity of inner experience among all of the participants except Devon was when they experienced sensory awareness. Those moments of experience were mostly clear and believable. There was variability among participants with regards to the frequency of sensory awareness experienced. One participant (Tyler) experienced sensory awareness in over 80% of his sampled moments. Three participants (Andrea, Devon, and Daniel) experienced sensory awareness in more than one-quarter of their sampled moments. Two participants (Jane and Robin) had a few sampled moments that involved sensory awareness. Among the five “unclear” participants (Tyler, Andrea, Daniel, Jane, and Robin), their experience of sensory awareness was markedly clearer and more believable than their other forms of experience. This was striking given the previously discussed difficulties these participants had in capturing and conveying their inner experience. For Devon, inner seeing was the most clear and prominent phenomenon of inner experience he had.

In examining the types of sensory awareness experienced by the participants, three participants had a distinct dominant sensory modality to their sensory awarenesses. Two participants (Andrea and Devon), both of whom met criteria for MDD, experienced tactile sensory awarenesses in more than 75% of their sensory awareness experiences. Another participant (Tyler), who met criteria for BD, and one participant (Devon), who met criteria for MDD, experienced visual sensory awarenesses in the majority of their sensory awareness experiences. One participant (Daniel), who experienced sensory awareness often, did not seem to have a dominant sensory modality, although he

experienced slightly more visual sensory awarenesses (37% of the time) than other sensory awarenesses.

There were also differences in the saliency of sensory awarenesses in participants' experiences. For example, the majority of Tyler's sampled moments involved a sensory awareness, and in those moments, the sensory awareness was the most salient feature in his experience. In fact, for Tyler most other experiences besides sensory awareness were unclear and difficult to be confident whether they were present at the moment of the beep. In contrast, Devon experienced sensory awareness frequently in his sampled moments; however, none of Devon's sensory awarenesses appeared to be the most salient feature of his experience; rather they all seemed to be less salient and embedded within his inner seeing experiences (his most dominant phenomenon of experience).

The frequency and clarity of sensory awareness for this sample is consistent with other DES studies conducted with participants who were depressed (Perlotto, 2001; Cavenagh, 2003; Gunter, 2007). Perlotto (2001) and Cavenagh (2003) found that participants with depressed had more sensory awarenesses as compared to participants who were not depressed. Similarly, Gunter (2007) noted that participants with depression had more negative physical sensations as compared to participants without depression. He also found that those negative physical sensations were frequently coupled with an affective experience. Gunter's (2007) finding is particularly consistent with the experience of Andrea and Devon, both of whom met criteria for MDD. They experienced tactile sensory awarenesses in more than 75% of their sampled moments.

It is unclear how the high prevalence of sensory awareness may relate to the participants' diagnoses of either BD or MDD as neither disorder includes any sensory

awareness features in its diagnostic criteria or the extant literature. It is also unclear why many participants had clear experiences of sensory awareness, but not other clear phenomenon of experience. It is possible that sensory awareness is a more basic form of experience, such that when individuals do not have more developed or complex experiences, they may still experience some sensory awarenesses. These sensory awarenesses may take less mental energy or skill to create. This may be consistent with and related to the diminished ability to think or concentrate diagnostic criteria (APA, 2000) of depressive episodes. It is also plausible that the tactile sensory awarenesses may relate to the catatonic subtype of MDD (APA, 2000). This subtype is related to motor behavior disturbances including motoric immobility, excessive motor activities, extreme negativism or mutism, peculiarities of voluntary movement, or echolalia or echopraxia (APA, 2000). None of our participants evidenced symptoms of MDD with catatonic features; however, MDD could involve a milder focus or attention on bodily sensations.

Few Clear Thoughts

Overall, the participants in this study seemed to struggle with the experience of thinking, some to a greater extent than others. For five of our participants, the experience of thinking was absent, diffuse or inextricably intertwined with feelings, or at a very low level of saliency to the point of not being confident that it was at all present. For example, these five participants had moments of experience that involved a hint of a thought, or a thought intertwined with another experience (i.e., thought/feeling). In general, the presence of directly experienced cognition, which typically in comes in the form of inner speaking, unsymbolized thinking, or inner seeing, is common in other DES studies. The pattern of fewer distinct moments containing the experience of thinking, and

many incidents of unclear or undifferentiated thinking, seems characteristic of this sample of individuals with a mood disorder. This finding is also consistent with other DES studies of individuals with depression (Cavenagh, 2003; Hurlburt, 2001; Perlotto, 2001). In these studies, the participants with depression had infrequent inner seeing and inner speaking experiences (Cavenagh, 2003; Hurlburt, 2001; Perlotto, 2001). However, the present study was unique in that our participants also had few incidents of unsymbolized thinking.

As mentioned previously, the diagnostic criteria for a depressive episode and a manic episode include diminished ability to think or concentrate (APA, 2000). The problematic and infrequently occurring experience of thinking among these participants could be related to this particular depressive symptom. Additional research is needed to substantiate whether this is a typical characteristic of all or some individuals suffering from mood disorders.

Few Feelings

Feelings also occurred infrequently within our sample except for Andrea, who sampled the least (4 days). Often, we had little confidence regarding the fidelity of Andrea's reports of inner experience. For all of our participants, the apprehension of feelings was not clear or intertwined with other experiences. For example, two of our participants (Andrea and Daniel) often experienced incidents of thought/feelings. These participants were unable to understand or differentiate the emotional and the cognitive aspect of their experience, something that is relatively clear to most other participants.

Similarly, two participants (Robin and Tyler) had moments of experience that appeared to be emotional; however, it was difficult to discern whether a feeling was

present at the moment of the beep and, if there was one present, whether it was associated with any experiential details (e.g., bodily sensations). As best we determined, Jane did not have any sampled moments that involved a clear feeling. Finally, Devon had only one sampled moment in which we could be certain a feeling was present. However, he had several sampled moments that involved complex, hyper-clear bodily sensations which may or may not have been associated with a feeling.

In terms of frequency of feelings, we had three participants (Robin, Andrea, and Daniel) who had feelings nearly as frequently as what has been noted in previous studies with participants not selected based on the presence of a psychiatric disorder (Heavey & Hurlburt, 2008). Two of those participants (Robin and Andrea) were diagnosed with MDD and one (Daniel) was diagnosed with BD. Three participants (Devon, Tyler, and Jane) had very few clear incidents of feelings. Two of those participants (Tyler and Jane) were diagnosed with BD and one (Devon) was diagnosed with MDD. In contrast to our DES findings, the participants in this study endorsed experiencing more feelings on self-report measures, such as the CES-D (Padloff, 1977), as compared to non-depressed individuals. There seems to be a disconnect between the experience of feelings as reported on a questionnaire and experience as captured by the DES method.

The findings in this study regarding the frequency and clarity of feelings are consistent with previous DES studies conducted with participants with depression (Hurlburt, 1993). Hurlburt (1993) also found that participants experiencing depression evidenced few incidents of feelings and had a difficult time observing and communicating the characteristics of their experience.

The diagnostic criteria for depression include symptoms such as feeling sad or empty and feelings of worthlessness or excessive or inappropriate guilty (APA, 2000). However, our sample of individuals with MDD did not experience a higher frequency of feelings than what Heavey and Hurlburt (2008) observed in a stratified sample of college students. In fact, the participants in this study experienced fewer feelings than the participants studied by Heavey and Hurlburt (2008). Our participants did not feel worthless or guilty in any of their sampled moments. These findings are important to the mood disorder literature because of the hallmark symptoms of depression include negative affect (APA, 2000). Perhaps there is something else impacting participants' subjective reports of experience on such measures as the CES-D and subsequently as represented in the MDD literature at large. It is also possible that our participants may have experienced clear feelings, but they may have had difficulties verbalizing their experience of the feeling or perhaps we struggled in apprehending their experience. However, the participants were able to describe experience when it occurred, such as sensory awareness, suggesting that they would likely be able to verbalize their experience of feelings as well. However, it seems unlikely that their difficulty with apprehending feelings is somehow different than their overall deficit of clear experience. It is likely that the low incidence of feeling was a result of our participants having less in their inner experience overall. Additional research is needed to understand the frequency and characteristics of feelings for individuals diagnosed with mood disorders, especially given the importance of feelings on diagnostic criteria.

Doing of Experience

The three participants (Daniel, Tyler, and Jane) who met criteria for BD each had moments of experience that involved the “doing” of experience. Doing of experience is where a participant attempts to control, alter, or manipulate one’s inner experience (Hurlburt, 1993; Hurlburt & Raymond, 2011). For example, in one of his sampled moments, Daniel was experiencing two feelings simultaneously (euphoria/high/excited and bad/sad) and he was simultaneously explicitly monitoring those feelings. Specifically, he was actively and purposefully adjusting his attention to the separate feelings to balance their relative intensity. Daniel and Tyler both appeared to be somewhat skilled or successful in their attempts to create or manipulate their experiences. Tyler purposefully created sensory experiences to be aware of. For example, in one sampled moment Tyler was actively sniffing the good smell coming from the kitchen in order to pay attention to the qualities of the smell. In another he was wiggling his toes in his socks to create the visual experience in which he was absorbed.

The other participant, Jane, did not appear skillful or successful in her attempts to create or manipulate her experience. On two sampling days, Jane told the interviewers that throughout the collection of her moments of experience, she was trying to take a nap or sleep. However, no sampled moment involved her being asleep or close to being asleep. In general, Jane had little to no inner experience in the majority of her sampled moments. Her lack of success at altering her experience may be impacted by her general lack of inner experience. Nonetheless, Jane seemed to have some incidents where she was trying to impact her experience.

It is unclear what the significance of this phenomenon is for the sample of participants with BD. None of the participants who met criteria for MDD exhibited this phenomenon. Further studies are needed to evaluate if this is indeed a feature of the experience of individuals with BD.

Conclusions

Although there were no clear, consistent patterns of inner experience that emerged either within the MDD or BD subgroups, or across the two groups of mood disordered individuals, there were features of experience that were shared among most of the six participants. Devon was an outlier, with extremely detailed and creative inner seeings in all of his sampled moments.

Five of our participants (Jane, Robin, Andrea, Tyler, and Daniel) seemed to all have a deficit of clear experience, particularly thinking and feelings. They had few clear inner seeings, feelings, unsymbolized thinking and almost no inner speaking. The exception seemed to be sensory awareneses, perhaps as it represents a more rudimentary form of experience. There were individual differences with regard to how pronounced the deficit of clear experience was and what phenomenon of inner experience it impacted. However, overall there seemed to be a broad theme of a lack of clear inner experiences. This theme was present for our participants with MDD and BD and may be a characteristic of individuals with a mood disturbance. It is also possible that our participants did in fact have more clear inner experiences but that we just did not know how to access it or that they were unable to articulate those experiences. This observation is speculative and further research is needed to determine the reliability of this pattern.

The exception to this pattern of experience in our sample was Devon. Devon had inner seeing in 100% of his sampled moments. His inner seeing was highly detailed, often involved perceptual distortions or exaggerations, often involved elaborate and incongruous backgrounds, and often (if not always) involved him seeing himself including sometimes reflecting concern regarding how he appeared to others. Consistent with our other participants, however, he also experienced many sensory awarenesses and few incidents of feelings, inner speaking, and unsymbolized thinking. He also had many sampled moments that involved a disintegration of his experiences which seems related to the other participants' deficit of clear experience and consistent with previous DES studies of individuals with mood disorders (Hurlburt, 1993).

The present study's findings have important implications for the diagnostic categories for MDD and BD. For one, we found substantial individual differences among our participants in terms of their inner experience. The diversity in inner experience found in this study suggests that those with these diagnoses may not be homogeneous, at least in terms of inner experience. Furthermore, we did not find clear presence of the type of experiences that the diagnostic criteria suggest would be present. For example, given the diagnostic criteria for MDD, we would expect our participants to have more moments of experience that involved feelings, particularly negative feelings, than participants without MDD. Our sample of participants with MDD did not evidence more feelings as compared to previous samples of participants without a known psychiatric disorder (Heavey & Hurlburt, 2008). This seems like an important discrepancy to highlight, especially given how several therapeutic orientations and techniques are aimed at changing one's inner experience (e.g., content of one's negative feelings and/or

thoughts). Research aimed at understanding the individual differences in inner experience among individuals who share a diagnostic label, especially one with implications pertaining to inner experience, seems imperative. In addition, it is important that future research focuses on clarifying and, if confirmed, understanding the discrepancy between diagnostic criteria of mental disorders and characteristics of inner experience observed in this study. Overall, the findings in the study highlight the importance of increasing efforts to explore the inner experience of individuals, specifically those with diagnosed mental illnesses. This study also demonstrates the utility of the DES method for exploring inner experience. Inner experience can be captured and described. Moreover, DES may provide valuable insights pertaining to the inner experience of individuals suffering from mental illnesses.

Limitations and Suggestions for Future Research

The present study had a number of limitations. A major limitation was the small sample size. Our limited sample size provided a lower than ideal situation for identifying relationships and differences among our participants. DES is a very labor and time intensive method, making it difficult to collect larger samples. For example, this study took approximately 8-months to collect data with three DES researchers involved with the collection of the data. On average, Dr. Heavey, Dr. Hurlburt and I spent approximately 9 hours with each participant collecting the data and about 5-10 hours per participant in writing beep descriptions and understanding the nature of his or her inner experiences. We included three researchers on each interview whenever possible and in the discussion of our participants' inner experience in order to minimize the likelihood

that our own biases distorted what we found. This often included re-watching videotapes of our interviews and looking at this data in various ways.

Another limitation of our study was that we did not control for other variables that may impact our participants' experiences. For example, many of our participants take medication daily to control their mood disorders. However, it was impossible in this study to understand and identify the impact of those medications on our participants' inner experience. Similarly, our participants may have been using other substances (e.g., alcohol) that may have affected their inner experience. Additional research is needed in this area to explore the ways in which substances can impact a person's inner experience.

Another variable we did not control that may impact inner experience was when and how the participants collected moments of experience. Participants were free to collect their moments in their own natural environments at a time of their choosing, increasing ecological validity. However, it is possible that the varying conditions under which the participants collected their moments of experience may have impacted the observed inner experiences.

Finally, another limitation of the present study is the reliance on participants' self-report of their experience. The DES method tries to circumvent some of the limitations associated with self-report in various ways. DES is an iterative procedure (Hurlburt, 2009; Hurlburt & Akhter, 2006) as most participants are not skilled observers of their inner experience during the first sampling day. We expect participants to become more skilled at apprehending their inner experience overtime. DES also rules out anything that is outside of a participant's current awareness (Hurlburt & Akhter, 2006) and thus

participant's explanations, interpretations, "unconscious" processes, and events occurring before or after the beep are avoided.

One issue related to relying on self-reports is constructive memory. To minimize constructive memory effects, the expositional interviews take place within 24-hours of the collection of sampled moments. Participants are also told that they can choose to not discuss any particular sampled moment with the researchers. Such sampled moments may include moments participants may feel uncomfortable or be embarrassed to discuss with the researchers or moments in which participants were not able to attend to their inner experience. Giving participants this option reduces the chance that participants may feel the need to change their report of their inner experience due to discomfort. Finally, during the interview the researchers strive to remain non-leading in the questioning such that participants can describe their inner experience without researchers' influences. We are unable to estimate how effective we are at reducing constructive memory, although we believe this method limits those effects as much or more than other methods.

Based on our findings, we believe that future research designed to further explore the inner experiences of individuals with BD, MDD, as well as other psychiatric disorders, would be advantageous in further our understanding the nature of inner experience and mental illness. Such research would benefit from sampling with participants over a more extended period of time. Additional DES studies may want to examine the inner experience of people with MDD and BD when they are and are not experiencing specific mood episodes (e.g., major depressive episode, manic episode) to explore how their inner experiences may be impacted by the mood episodes.

Furthermore, research aimed at understanding the significant individual differences we found in this study, as well as other DES studies, would be useful.

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CURRICULUM VITA

Janell M. Mihelic, M.A.

EDUCATION

Ph.D., Clinical Psychology Anticipated 2013
University of Nevada, Las Vegas

Dissertation Title: *Examining the Inner Experience of Individuals with Major Depressive Disorder and Individuals with Bipolar Disorder*

M.A., Clinical Psychology 2010
University of Nevada, Las Vegas

Thesis Title: *Exploring the Phenomena of Inner Experience with Descriptive Experience Sampling*

B.S., Psychology, High Distinctions 2005
Nevada State College

CLINICAL EXPERIENCE

APA Accredited Internship 2012 – Present
Pre-Doctoral Intern
University Counseling & Testing Center (UCTC)
University of Oregon

- (1) Training and Supervision Concentration
 - a. Supervised doctoral counseling psychology practicum therapists.
 - b. Co-facilitated a practicum seminar for doctoral counseling psychology practicum therapists.
 - c. Co-taught a beginning counseling graduate course for school psychology doctoral students and speech and language pathology master students.
 - d. Participated with the 2013-2014 intern selection committee.
- (2) Intervention and Assessment
 - a. Conducted intake assessments.
 - b. Provided brief and long-term individual psychotherapy to students at the university.
 - c. Provided phone and in person consultation, crisis, and triage services to the campus community.
 - d. Co-facilitated interpersonal process group therapy.
- (3) Assisted with planning multicultural professional development activities for counseling and testing center faculty and staff.
- (4) Outreach Services
 - a. Planned and facilitated outreach services with various campus agencies.

- b. Planned and implemented a specific consultative project with the Accessible Education Center and the Teaching and Learning Center aimed at reducing test anxiety in college students with disabilities.

Primary Supervisors: Mark Evans, Ph.D. and H. Brooks Morse, Ph.D.

Rawson Neal Inpatient Psychiatric Hospital

2012

Practicum Student

Southern Nevada Adult Mental Health

- Provided psychodiagnostic and malingering assessment to patients in an inpatient hospital.
- Provided individual psychotherapy for individuals with severe and persistent mental illness.
- Participated in an interdisciplinary treatment team comprised of a psychiatrist, psychologist, social workers, nursing staff, and mental health technicians.

Primary Supervisor: Jamie Lee, Psy.D.

Disability Resource Center (DRC) – Psychological Testing

2010 – 2011

Graduate Assistant

University of Nevada, Las Vegas

- Conducted psychoeducational assessment for UNLV students with suspected learning disabilities and ADHD who were seeking disability accommodations through the university's disability resource center.
- Employed a standard but flexible battery of tests including cognitive, academic, and psychological measures.
- Consulted in weekly documentation review meetings with case managers for the purpose of determining eligibility for accommodations and discussing appropriate accommodations given students' psychological disabilities.

Primary Supervisors: Michelle Carro, Ph.D. & Sven Jones, M.A.

College Counseling Center

2010 – 2011

Practicum Student

Counseling and Psychological Services (CAPS)

College of Southern Nevada

- Provided brief individual and couples therapy to students at a community college.
- Facilitated weekly skill-based relaxation group.
- Conducted intakes for psychological services.
- Participated in campus-wide outreach services.

Primary Supervisor: Luis Guevara, Psy.D.

University Counseling Center

2009 – 2010

Practicum Student

Counseling and Psychological Services (CAPS)

University of Nevada, Las Vegas

- Provided brief individual psychotherapy to students at the university.
- Conducted intakes for psychological services.

- Process observed interpersonal group therapy.
Primary Supervisor: Vicky Genia, Psy.D.

Psychology Department Mental Health Clinic 2008 – 2009

Practicum Student and Graduate Assistant

Center for Individual, Couple, and Family Counseling (CICFC)

- Provided long-term individual psychotherapy to adults at a university-housed sliding-scale community mental health clinic.
- Conducted psychological intakes for individuals, couples, and families seeking services.

Primary Supervisor: Marta Meana, Ph.D.

Psychology Department Psychological Assessment Clinic 2008 – 2009

Practicum Student

Psychological Assessment and Testing Clinic

University of Nevada, Las Vegas

- Provided psychological assessment for UNLV campus and community referrals of ADHD, learning disabilities, and other neurodevelopmental or acquired emotional, cognitive and behavioral impairments of children and adults.
- Employed a flexible battery approach to inform test selection and interpretation.

Primary Supervisors: Sylvia Ross, Ph.D. & Michelle Carro, Ph.D.

GROUP THERAPY EXPERIENCE

University Counseling Center 2012 - Present

University Counseling & Testing Center (UCTC)

University of Oregon

- Co-facilitated interpersonal process groups (Understanding Self and Others) for college students with interpersonal and relationship difficulties.

College Counseling Center 2010 - 2010

Counseling and Psychological Services (CAPS)

College of Southern Nevada

- Conducted a skill-based relaxation group therapy for students wanting to improve their relaxation skills. Incorporated cognitive-behavioral and mindfulness principles.

University Counseling Center 2010 - 2011

Counseling and Psychological Services (CAPS)

University of Nevada, Las Vegas

- Processed observed interpersonal process group therapy for students with interpersonal and relationship difficulties.

CLINICAL SUPERVISION PROVISION

University Counseling Center

2012 – Present

University Counseling & Testing Center (UCTC)

University of Oregon

- Provided weekly individual supervision to two counseling psychology doctoral practicum students who were providing individual psychotherapy to students at the university.
- Supervision methods included progress note review, videotape review and individual case discussion.
- Employed a developmental approach to supervision incorporating a multicultural framework.

Psychotherapy Supervisor-in-Training

2011

Center for Individual, Couple, and Family Counseling (CICFC)

University of Nevada, Las Vegas

- Enrolled in “Introduction to Clinical Supervision” seminar which combined didactic and experiential methods of learning.
- Provided weekly individual supervision to a first year clinical doctoral practicum student who was providing individual psychotherapy to 7 long-term clients.
- Supervision methods utilized included progress note review, videotape review and individual case discussion.
- Employed a developmental approach to supervision incorporating Bernard’s Discrimination Model.

TEACHING EXPERIENCE

Co-Instructor – Practicum Seminar

2013

University Counseling & Testing Center (UCTC)

University of Oregon

- Co-facilitated a practicum seminar for doctoral counseling psychology students completing a practicum placement.

Co-Instructor – Beginning Counseling (CDS 610)

2012 – Present

University of Counseling

- Co-taught this graduate course to school psychology doctoral and speech and language pathology master students.
- Topics included basic counseling skills including active listening, developing rapport, reflection of feelings, summarizing, motivational interviewing, and a brief introduction to cognitive-behavioral therapy.

Instructor - Introductory to Psychology (PSY 101)

2011 –2012

University of Nevada, Las Vegas

- Taught 2 sections of Introductory to Psychology distance education using Webcampus Blackboard.

- Topics included physiological psychology, sensation and perception, cognition, memory, learning, personality, development, social psychology, history, psychopathology, and research methods.

Instructor – Research Methods (PSY 240) 2010 - 2010

University of Nevada, Las Vegas

- Taught 2 sections of Research Methods.
- Topics including developing theories and hypotheses, research designs, designing experiments, factorial designs, critically evaluating research, correlations, presenting research, APA-style, conducting library literature searches, research ethics, and plagiarism.

Instructor – Introductory to Psychology (PSY 101) 2009 - 2009

University of Nevada, Las Vegas

- Taught 2 sections of Introductory Psychology.
- Topics included physiological psychology, sensation and perception, cognition, memory, learning, personality, development, social psychology, history, psychopathology, and research methods.

Instructor – ePortfolio 2005 – 2007

Nevada State College

- Taught students how to create and maintain an electronic portfolio based upon the college's core curriculum assessment program.
- ePortfolio instruction was taught in conjunction with students' introduction to college course using Webcampus Blackboard.

ADDITIONAL RELEVANT WORK EXPERIENCE

First Year Program Advisor, Academic Advising 2005 – 2007

Nevada State College

College of Liberal Arts & Sciences

- Advised and counseled current and new students regarding college programs.
- Specialized in advising freshman and first-generation college students.
- Developed an on-line advising system, coordinated placement testing procedures, and coordinated academic tutoring of general education requirements.

Neuropsychologist's Assessment Technician 2004 –2005

Associated Neuro and Psychological Specialties

- Administered and scored neuropsychological testing for a neuropsychologist in private practice.
- Administered a variety of cognitive, neuropsychological, and personality measures.
- Gained some report writing experience.

Assistant Librarian, Student Worker

2003 – 2005

Nevada State College
Academic Affairs

- Assisted with various library functions such as data entry of library statistics, assisted students and faculty with technical and computer related problems, and assisted students with academic library research.

Psychology Tutor

2003 –2004

Nevada State College
College of Liberal Arts & Sciences

- Provided academic support to undergraduate psychology students in both individual and group settings.
- Tutored the following courses: general psychology, undergraduate research, abnormal psychology, human sexuality, and developmental psychology.

RESEARCH EXPERIENCE

Doctoral Dissertation (defense scheduled for May 6th, 2013) 2010 – Present

Examining the Inner Experience of Six Individuals with Major Depressive Disorder

University of Nevada, Las Vegas

- The purpose of this dissertation project is to examine the phenomenology and inner experience of individuals from the greater Las Vegas community who have a diagnosis of major depressive disorder and individuals who have a diagnosis of bipolar disorder.
- Inner experience is examined using the Descriptive Experience Sampling (DES) method. This study includes an initial screening using the Structured Clinical Interview for DSM-IV diagnoses, Center for Epidemiological Studies – Depression Scale (CES-D), and Symptom Checklist-90-Revised and 8 weeks of semi-structured interviews using the DES method.
- DES is an experience-sampling method aimed at obtaining high-fidelity accounts of moments of inner experience.

Master's Thesis

2008 – 2010

Exploring the Phenomena of Inner Experience with Descriptive Experience Sampling

University of Nevada, Las Vegas

- The purpose of this thesis project was to survey the phenomena of normal, everyday inner experience of a sample of college students using the Descriptive Experience Sampling (DES) method.
- This study included an initial screening, administration of several self-report measures, and completion of 4 semi-structured interviews using the DES method.
- The frequency of phenomena experienced was reported and three new dimensions of inner experience were identified.

Inner Experience Training Study

2008 – 2012

University of Nevada, Las Vegas

- Assisted with the research that is aimed at increasing efficacy in conducting expositional interviews as required by the Descriptive Experience Sampling (DES) method.

Methodological Variation Study

2007 – 2009

University of Nevada, Las Vegas

- Analyzed data for a study that evaluated the methodological variations of reporting inner experiences.
- Subjects were asked to report on their inner experience while watching emotionally-evocating film clips in three different reporting conditions: writing about their experience, completing a questionnaire, and engaging in a DES interview.
- The goal of this study was to examine how the reporting conditions influence the nature of the reports of inner experience.

Research Volunteer, Experience Sampling Lab

2006 –2007

University of Nevada, Las Vegas

- Assisted with research that studied the inner experience of individuals with and without alexithymia using the Descriptive Experience Sampling (DES) method.
- Assisted with data entry and transcription.

Research Volunteer, Achievement Center

2004 – 2005

University of Nevada, Las Vegas

- Assisted with research for a NIMH grant that evaluated the effectiveness of Family Behavioral Therapy as compared to the standard treatment for families with a history of presently occurring child neglect.
- Assisted with literature reviews.

PUBLICATIONS AND PRESENTATIONS

Mihelic, J.M. & Aranda, C. (2012). Stress Management. Presentation. University of Oregon.

Mihelic, J.M. (2010). Exploring the Phenomena of Inner Experience with Descriptive Experience Sampling. Unpublished master’s thesis, University of Nevada, Las Vegas.

Mihelic, J. M. & Heavey, C. L. (2010). The Characteristics of Inner Experience. Poster presented at the annual psychology department research conference.

SERVICE AND LEADERSHIP EXPERIENCE

Clinical Student Committee, Co-Chair

2009 –2010

University of Nevada, Las Vegas

- Served as a co-chair for the UNLV Psychology Department’s Clinical Student Committee.

- Was responsible for relaying student concerns to the department, planning and implementing new policies and procedures, fundraising, and event planning.

Outreach Undergraduate Mentoring Program (OUMP) 2008 –2010

University of Nevada, Las Vegas

- Responsible for providing mentorship and support to minority undergraduate students at UNLV who were interested in pursuing a mental health graduate degree.

Incoming Graduate Student Mentor 2008 – 2011

University of Nevada, Las Vegas

- Was responsible for providing mentorship to incoming clinical psychology students through their first year of graduate study at UNLV.

Student Government, Student Body President 2002 - 2004

Nevada State College

- Served as the student body president of Nevada State College.
- Was responsible for relaying student concerns to the college’s faculty and administration, planning and implementing new student policies and procedures, spending and balancing budget of student fees, and representing the college at state board of regent meetings, state legislature meetings, and with the community at large.

Safe Nest, Volunteer 2004 – 2005

- Volunteered at Safe Nest, a shelter for victims of trauma or domestic violence.
- Assisted with serving lunch daily to homeless individuals, sorting and counting donations, and assisting staff with various other tasks.

AWARDS AND HONORS

Graduate Assistant at the University of Nevada, Las Vegas	2007 –Present
Valedictorian, Nevada State College Class of 2005	2005
Nevada Regents Scholar Award	2005
Millennium Scholarship	2002 – 2005
Nevada State Academic Scholarship	2002 – 2004
Lisa Cano Leadership Scholarship	2002 – 2003

Professional Affiliations

American Psychology Association (APA), Student Affiliate	2008 – Present
Nevada State Psychological Association (NSPA), Student Affiliate	2007 – Present
Society for the Teaching of Psychology (STP), Student Affiliate	2009 – Present
National Academic Advising Association (NACADA), Member	2005 – 2007
Psychology Club, Member, Nevada State College	2004 – 2005
Nevada Student Association, Nevada System of Higher Education	2002 – 2004