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# An exploration of attributional style using the Descriptive Experience Sampling method

Nicole A Cavenagh
*University of Nevada, Las Vegas*

# AN EXPLORATION OF ATTRIBUTIONAL STYLE USING THE DESCRIPTIVE EXPERIENCE SAMPLING METHOD

by

Nicole A. Cavenagh

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# ABSTRACT

**An Exploration of Attributional Style using the Descriptive Experience Sampling method**

by

Nicole A. Cavenagh

Dr. Christopher L. Heavey, Examination Committee Chair
Associate Professor of Psychology
University of Nevada, Las Vegas

This study explored the association between cognitive style and depression. Phase I: 195 participants completed questionnaires that assessed cognitive style and psychological distress. Among these participants the expected relationships were found between depression, anxiety, interpersonal sensitivity, attributional style, and rumination.

Phase II: Six participants selected based on their attributional style engaged in Descriptive Experience Sampling, which entails wearing a small device that will beep at random intervals, recording their awareness at the sound of the beep, and being interviewed within twenty-four hours of doing so. The inner experiences revealed by DES did not generally show the patterns suggested by current theories of depression. Two individuals who appeared to be at greatest risk for depression, one of whom was in the low risk group based on the Phase I screening data, did show signs of more negatively valenced inner experience and more thoughts consistent with Beck's cognitive theory of depression.

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# CHAPTER 1

## INTRODUCTION

Depression is often referred to as the "common cold" of mental illness. In the United States alone, more than 15 million people each year meet the diagnostic criteria for depression (Pollack, 1998). Depression is not only a frequently occurring problem for many Americans; it also plagues many of those afflicted for a significant portion of their lifetimes. Depression is usually recurrent and can last for a very long time (Ingram et al., 1999). Major Depressive Disorder can be characterized by frequent Major Depressive Episode relapse and recurrence and also, perhaps, by prolonged lifetime symptomatic chronicity; thus, Major Depressive Disorder is often more similar in terms of lifetime chronicity to hypertension than to more acute episodic diseases (Judd et al., 1998).

Thus, the analogy of depression to the common cold perhaps trivializes the enormous human suffering that accompanies depression. In addition to the psychological anguish of depression and increased risk of suicide (APA, 2000), this illness impacts essentially all facets of the lives of those afflicted, including occupation, education, income, and interpersonal relationships (Coryell et al., 1993). In terms of occupation, individuals with depression have significantly lower income and are less likely to achieve an income increase than those without depression. They have a slightly lower mean education level. In the realm of interpersonal relationships, those who are depressed are half as likely to be married while being twice as likely to divorce. Among those who are

married, individuals who suffer from depression are more likely to rate the quality of their relationship as poor and be dissatisfied with sexual activity. Even married individuals who have recovered from depression reported lower levels of overall satisfaction and were more likely to be sexually inactive and dissatisfied. Additionally, relationships with friends, children, and other important relatives are affected as are recreational activities and overall levels of satisfaction. In sum, individuals suffering from depression report suffering psychological distress and impairment involving spouses, sexual activity, and friends as well as in economic and educational spheres.

These types of negative effects are seen even in those with subsyndromal depression. For example, individuals with subsyndromal depression report suffering from high social irritability, high household strain, high financial strain, restricted activity days due to physical illness, chronic limitation in physical or job functioning, and are likely to self rate their health as poor (Judd et al., 1996). In addition to these direct personal costs, subsyndromal depression is also associated with greater risk for future Major Depression (Broadhead et al., 1990, Howarth et al., 1992). There is now considerable evidence that suggests a continuity of risk between subsyndromal and DSM-IV diagnosable depression such that having some symptoms of depression puts one at risk for experiencing more severe depression (Kendler and Gardner, 1998; Johnson et al., 1992; Judd et al., 1997).

*Risk Factors*

In addition to subsyndromal depression, there are several other risk factors for depression, including age, gender, and family history. However, the best predictor of

future depression is prior depression (Ingram et al., 1999). At least sixty percent of individuals with Major Depressive Disorder, Single Episode will likely have a second episode; those with two episodes have a seventy percent chance of a third and those with three episodes have a ninety percent chance of a fourth (APA, 2000).

Various other mental illnesses are also associated with an increased risk for depression; many of these are found to co-occur with depression frequently. According to Kessler et al. (1997), only approximately twenty-seven percent of those who suffer from depression have "pure" lifetime depressive orders. Pure is defined as depression without the presence of any other NCS/DSM-III-R disorder or addictive disorders. There does, however, seem to be some relationship between *prior* addictive disorders and depression such that individuals with five to six symptoms of Major Depression are likely to have had problems with prior alcohol dependence, whereas those with seven to nine symptoms of Major Depression are likely to have had problems with prior drug dependence. Additionally, prior anxiety disorders are associated with greater risk of both later Minor (Subclinical) Depression and Major Depression (Kessler, Zhao, Blazer, & Swartz, 1997). Finally, frequently occurring comorbid disorders with Major Depressive Disorder include substance-related disorders, panic disorder, obsessive-compulsive disorder, anorexia nervosa, bulimia nervosa, and borderline personality disorder (APA, 2000).

It is noteworthy that women appear to be twice as likely to suffer from depression as men, with lifetime prevalence rates being estimated at 21.3% for women and 12.7% for men (Nolen-Hoeksema, 2001). Until about thirteen years of age girls and boys are

equally likely to experience depression. During this period of early adolescence the rates of depression in boys remain approximately the same or may even decrease. This is not the case for girls, whose rates of depression begin to significantly increase.

Although the reason for these differences is unclear, Nolen-Hoeksema (2001) offers a possible explanation. According to Nolen-Hoeksema (2001), women experience a lack of social power that causes them to be more vulnerable than men to specific major traumas, especially sexual abuse. These traumas may cause women to feel that they are helpless to control their lives, which may directly contribute to depression. Nolen-Hoeksema (2001) expands these stressful life events to include not only victimization, but also chronic strains, such as poverty and being the primary caregiver to children, and the gender intensification that occurs for females during adolescence and results in the narrowing of acceptable behavior.

Furthermore, these traumas may indirectly contribute to depression by increasing a woman's reactivity to stress (Nolen-Hoeksema, 2001). This increased reactivity may be related to biological responses to stress, self-concept, or coping styles. For example, stressful experiences can result in sensitization of biological and psychological systems to future stress. This increases the likelihood that an individual will react with depression. Reactivity to stress is associated with impaired problem solving, and can result in accumulation of new stressors. These new stressors can contribute to more depression, resulting in a positive feedback loop.

Males and females also differ greatly in terms of suicide attempts and completions. Although women are three times more likely to attempt suicide, men are

four times more likely to complete suicide (Pollack, 1998).

Age also plays a significant role in the frequency of depression and suicide. Younger adults are more often depressed than older adults are; the highest rates are among those between 25 and 40 years of age (Ingram et al., 1999). The rate of depression decreases among adults who are over sixty-five years of age (Ingram et al., 1999).

One group in particular seems to have increasing rates of depression. Young men have the most rapidly increasing rate of depression, which may be reducing the gap between male and female rates of depression (Joyce et al., 1990). This subgroup is also at greater risk to complete suicide; young white males (ages 15-24) are five to eight times more likely to complete suicide than females. Additionally, elderly males (age 85+) are ten times more likely to complete suicide than their female counterparts (Pollack, 1998).

Family history also appears to play a role in the occurrence of depression. According to the Diagnostic and Statistical Manual of Mental Disorders (4$^{th}$ edition, TR, APA, 2000), Major Depressive Disorder is 1.5 to 3 times more likely among first degree biological relatives of individuals with Major Depressive Disorder than among the general population.

*Course of Depression*

The first onset of depression most often occurs between the 30s and 40s with fifty percent of those who are depressed having the first onset before age 40. The average number of episodes for people who have had at least one Major Depressive Episode is estimated at five or six while the average length of a Major Depressive Episode is

estimated at six months to a year (Ingram et al., 1999). Ten to twenty percent of those with Major Depression have a chronic course (Ingram et al., 1999). The concept of a chronic course is supported by Judd et al. (1998) in a study that found that Major Depressive Disorder has prolonged chronic symptoms as evidenced by participants in the study being asymptomatic for only 41.5% of weeks during an average of 8.7 years. Furthermore, twenty-three percent of participants who had at least two years of follow-up were never free of depressive symptoms for even a week (Judd et al., 1998). Additionally, the number of symptoms present appears to be on a gradient with the average number of lifetime episodes, the average length of the longest episode, 30-day prevalence, and 12-month prevalence such that a greater number of symptoms is associated with a higher average number of lifetime episodes, a longer average length of the longest episode, as well as higher 30-day and 12-month prevalence rates (Kessler et al.1997).

*Subtypes of Depression*

The Diagnostic and Statistical Manual 4th edition Text Revision (APA, 2000) defines a Major Depressive Episode as five or more of the following symptoms being present during the same 2-week period most of the day, nearly every day:

- Depressed Mood
- Diminished interest or pleasure in all, or almost all activities
- Significant weight loss or gain
- Insomnia or hypersomnia
- Psychomotor agitation or retardation

- Fatigue or energy loss
- Feelings of worthlessness or excessive or inappropriate guilt
- Diminished ability to think or concentrate
- Recurrent thoughts of death or suicidal ideation

These symptoms must indicate a change from previous functioning, and at least one must be either depressed mood or loss of interest or pleasure. Major Depressive Disorder is simply defined as one major depressive episode for the Single Episode type or two or more major depressive episodes for the Recurrent type. The above criteria are currently used to assign a diagnosis of depression.

Although the Diagnostic and Statistical Manual of Mental Disorders (4th edition, TR, APA 2000) defines one disorder as Major Depression, there may be several subtypes. Winokur (1997) conceptualized Major Depressive Disorder as a syndrome rather than a disease. A syndrome can be defined as a group of signs and symptoms that occur together, but may have various etiologies. A disease, however, has a distinct course, specific laboratory findings, and a distinct epidemiology. According to this theory, there are clear data leading to complex classifications of illnesses that all end in a final common pathway of depression; to state more clearly, depression is etiologically heterogeneous. Thus, if depression is etiologically heterogeneous, perhaps it could be diagnostically heterogeneous as well.

*Reactive and Endogenous Depression*

Reactive and endogenous depressions are two of the depressive subtypes proposed by Winokur. Winokur (1997) stated that some causes of depression include stroke, steroid-induced depression, a reactive depression to a major disaster (e.g., a

terrorist attack), a depression superimposed on an ongoing and preexisting psychiatric illness (also called secondary depression), and a depression that originates within the body (also called endogenous). More simply, depression can be generally classified into those that occur in the context of severe emotionally instability, or are reactive, and those that are endogenous.

*Atypical Depression*

Another depressive subtype is depression with atypical features. These features include hypersomnia, hyperphagia, prominent anxiety, and reverse diurnal mood variation (Nemeroff & Schatzberg, 1998). Individuals who have atypical depression tend to have an earlier age of onset and a more chronic course of illness than those with non-atypical depression (Stewart et al., 1993). Additionally, atypical depression is associated with more severe Symptom Checklist-90-R (Derogatis, 1994) scores on every subscale, scores that indicated more severe impairment on three of seven Social Adjustment Self-Report Scale subscales (SAS-SR; Achard et al., 1995), being younger at admission for treatment as well as being more symptomatic and impaired at admission, greater impairments in functioning, and a more injurious course of illness (Agosti & Stewart, 2001). Furthermore, Agosti and Stewart (2001) found that there were a higher percentage of women than men with atypical depression, and that those with atypical depression suffered from more chronic dysphoria and a higher prevalence of bipolar II disorder. Benazzi (2000) and Perugi et al. (1998) also found high rates of bipolar II (hypomania) disorder in those afflicted with atypical depression. Finally, Alper et al. (1997) found that social phobia and avoidant personality disorder were more prevalent in those with atypical depression than in those with non-atypical depression.

*Hopelessness Depression*

Hopelessness depression is characterized by twelve core symptoms. These include retarded initiation of voluntary responses, lack of energy, apathy, psychomotor retardation, sad affect, suicide, brooding, sleep disturbances, difficulty in concentration, and mood-exacerbated negative cognitions. Lowered self-esteem and/or dependency are the final symptom, but are not always present (Abramson et al., 1997). According to Abramson, Alloy, and Hogan (1997) general hopelessness and hopelessness depression result when "negative life events are attributed to stable (enduring) and global (likely to affect many outcomes) causes and viewed as important, likely to lead to other negative consequences or outcomes, and as implying that the person is deficient or unworthy"(p.250). It follows that if hopelessness is seen as a sufficient cause for hopelessness depression, then the duration of an episode of hopelessness depression should be impacted by how long the person has had these hopeless expectations (Abramson et al., 1997). Additionally, the number of episodes should also be influenced by how often a person experiences hopelessness. It is important to note that Abramson, Alloy, and Hogan (1997) have indicated that hopelessness depression does not seem to fit perfectly with any currently diagnosed category of depression, but rather cuts across several categories, including depressed individuals also afflicted with a personality disorder (i.e., borderline personality disorder) and depressed individuals with comorbid anxiety.

*Dependent/Sociotropic Depression*

This type of depression is thought to occur in individuals with great concern about interpersonal relationships. In particular, rejection or abandonment are likely to induce

depression because these individuals rely heavily on others for care, protection, support, admiration, and validation. The symptoms of this subtype include feeling helpless, lonely, weak, and sad (Abramson et al., 1997). This concept was further supported by Blatt (1974) as well as by Blatt and Zuroff (1992).

*Self-Critical/Autonomous Depression*

This type of depression is essentially a direct opposite of Dependent/Sociotropic Depression. Self-Critical/Autonomous Depression is thought to occur primarily in individuals who value self-definition, achievement of personally defined goals, and independence (Abramson et al., 1997). According to this theory, depression results from such things as unattained goals and poor performance compared to others. Blatt (see Blatt, 1974; Blatt and Zuroff, 1992) expanded upon these causes and included experiencing disapproval and criticism from others as possible threats to the individual's self-definition. The symptoms of this depressive subtype are thought to include unrelenting and harsh self-criticism, feelings of inferiority, and guilt (Abramson et al., 1997).

*Depressive Spectrum Disease and Familial Pure Depressive Disease*

These subtypes of depression focus on the relationship between an individual's family history and the individual's experience of depression. Depressive spectrum disorder is defined as "depression in a person who has a family history of alcoholism and/or antisocial personality" (Winokur, 1982; Winokur, 1985). Additionally, there may be a family history of depression, but not mania. Familial pure depressive disorder is considered to be "depression in a person who has a family history of primary depression but no family history of alcoholism, antisocial personality, or mania (Winokur & Coryell,

1992). Essentially, the distinction between these two subtypes of depression rests on the determination of whether a person has a family history of *both* depression and another mental illness (e.g., antisocial personality, alcoholism) versus having a family history of depression only.

Winokur and Coryell (1992) found that individuals with depressive spectrum disorder have more familial anxiety and somatization disorder, higher divorce rates, more suicide attempts, higher numbers of negative life events, and needed more time to recover from the index episode than those with familial pure depressive disease. Furthermore, those with depressive spectrum disease were more likely to develop alcohol and drug abuse during the five-year follow-up period than those with familial pure depressive disease. These data support prior research by Zimmerman et al. (1986), which indicated that depressive spectrum disease is characterized by difficulties in one's personal life, with particular difficulties in the area of marriage. Winokur (1985) also conducted prior research that was supported by these findings. This research indicated that there are higher levels of unstable personality characteristics in those with depressive spectrum disease than in those with familial pure depressive disease. These characteristics included lifelong irritability and anxiety as well as interpersonal problems.

*Depression and Inner Experience*

Each of these subtypes of depression requires an individual to make a statement regarding what his or her inner experience is like. Asking an individual to make such a statement is not uncommon. In fact, this interest in inner experience is pervasive in both professional psychology and everyday interaction. For example, in everyday

interactions, people frequently ask each other questions such as 'how are you?', 'what were you thinking when...?', 'how were you feeling when...?'. All of these questions require people to tap into their inner experience and share it. Professional psychologists ask similar questions, and attempt to explore inner experience further by using questionnaires such as the Symptom Checklist-90-R (Derogatis, 1994) and the Beck Depression Inventory-II (Beck, 1996). Both of these inventories ask individuals to describe their inner experience via rating the frequency and/or intensity of particular constructs. For example, the BDI-II (Beck, 1996) requires someone to choose one answer from the following choices: I do not feel sad, I feel sad much of the time, I am sad all the time, or I am so sad and unhappy that I can't stand it. This question clearly asks an individual to make a statement about his or her inner experience of sadness. The BDI-II contains similar items regarding feelings of guilt, self-criticalness, and irritability.

Despite this pervasive interest in inner experience, there remains important controversy regarding our ability to gain access to inner experience. There are essentially two schools of thought regarding inner experience (Hurlburt & Heavey, 2001). The first, that it is impossible to obtain information about someone's inner experience, can be traced to a debate between the Wurzburg group and Titchener (1910/1980). They engaged in a dispute regarding the existence of imageless thought. Because this dispute remained unresolved, some concluded that the method of introspection was inherently flawed (Hurlburt, 1993). Additionally, a pervasive yet incorrect belief that Skinner (1974) thought that private events were nonexistent or unimportant perpetuated the idea that obtaining information about inner experience was either impossible or simply not worth the effort. However, Skinner did not deny that it was possible to gain access to

inner experience provided three issues are kept in mind (see Hurlburt & Heavey, 2001). First, Skinner (1974) felt that verbal behavior about private events (inner experience) may be limited due to the fact that it is difficult for the verbal community to shape a person's speech about inner experience. Second, Skinner thought that it was impossible for a person to have complete access to his or her thinking in its entirety and, finally, that it is a mistake to give causal significance to mental events.

A final blow to the notion that we can access inner experience came from Nisbett and Wilson (1977), who argued that the accuracy of subjective reports of inner experience is poor. For example, they demonstrated that some behaviors thought by participants to be caused by mental events could actually be shown to be caused by external manipulation. Thus they concluded that the exploration of inner experience was unlikely to yield reliable reports. Nisbett and Wilson did allow that it might be possible to gain accurate descriptions of internal mental processes if one were to interrupt a process as it was occurring, "alerting subjects to pay careful attention to their cognitive processes, coaching them in introspective procedures, and so on." (p. 246). However, they dismissed such a process as being "ecologically meaningless." In fact, such a process can be carried out with substantial ecological validity (Hurlburt, 1997).

To review, the controversy surrounding the existence of imageless thought, the common misunderstanding of Skinner's position regarding inner experience, and the seminal review by Nisbett and Wilson (1977) have led skeptics to believe that exploring inner experience is either impossible or useless. However, Hurlburt (1993) has argued that the ostensive disagreement between the Wurzburg group and Titchener was in fact a disagreement at the level of the interpretation of the observed inner experience rather

than a disagreement regarding the actual nature of the inner experience, and thus should not be understood as discrediting the introspective method in general. Furthermore, Skinner and Nisbet and Wilson's commentaries can be understood as pointing to technical limitations and constraints related to the exploration of inner experience rather than as invalidating the method entirely. Taken together, these critiques can contribute to the development of an effective method for exploring inner experience.

On the other side of this debate about the possibility of exploring inner experience, it has been suggested that exploring inner experience is easy. Cognitive therapy is based on the idea that people can give adequate answers to questions such as "what were you thinking when you...?" or "how do you feel when you...?" (Hurlburt & Heavey, 2001). This indicates a belief that in order to obtain information about a person's inner experience, one must simply ask. However, despite the fact that cognitive therapy tends to exaggerate the ease with which people can accurately report inner experience, it does recognize the importance of such a construct (Hurlburt, Heavey, & Cavenagh, 2002).

Hurlburt and Heavey (2001) maintain that exploring inner experience is, in fact, neither impossible nor trivially easy. Furthermore, Heavey and Hurlburt (2002) go on to suggest five guidelines for conducting a scientific exploration of inner experience. First, one should be skeptical of reports of inner experience. The question at hand is whether reports accurately mirror lived experience. Therefore, this should not be assumed. Additionally, this skepticism cannot be resolved by feelings of certainty or confidence about the information being reported.

The second guideline suggests that the duration of time between the inner

experience and the recording of it should be as short as possible due to the possibility of memory decay (Heavey & Hurlburt, 2002). Keeping this interval as short as possible also buffers against mood shifts, changes in physical surroundings, and altered inner physiological states, all of which potentially impact a person's ability to correctly recall inner experience.

The next guideline states that when exploring inner experience, one should focus on short moments. Because moments of inner experience may be complex, and because encoding may be limited by the time available for rehearsing and processing, trying to capture lengthy segments of inner experience may surpass the person's ability to fully encode the details of the experience.

The fourth guideline states that specific, clearly identified moments of inner experience should be explored. Additionally, one should avoid specific targets, such as emotions, depression, or insight, when exploring inner experience. These targets constrain and potentially contaminate findings.

Finally, the fifth guideline states that inner experience should be explored in varied natural contexts. This increases external validity, or the extent to which results can be generalized to other contexts, as well as mundane realism. Mundane realism is the extent to which events occurring in the research setting are likely to occur in the normal course of the participant's lives (Heavey & Hurlburt, 2002).

The notion that exploring inner experience is easy has been influential in shaping the methods utilized in research on depression. Thus, it can be argued that the methods

typically used to explore the experience of depression are less rigorous than ideal due to a lack of sensitivity to the potential problems related to developing an accurate picture of inner experience.

To explore the proposition that the methods used to assess inner experience in depression research are less than sufficient we can consider research related to one of the subtypes of depression discussed above: Hopelessness Depression. This subtype of depression was borne out of theory and subsequently several studies have attempted to support the existence of this subtype utilizing various methods. As is common within the depression research literature, this subtype of depression consists of at least some symptoms that require an individual to make statements about his or her inner experience.

Hopelessness theory, the foundation upon which the subtype of hopeless depression rests, states "...a proximal sufficient cause of the symptoms of hopelessness depression is an expectation that highly desired outcomes will not occur or that highly aversive outcomes will occur and that no response in one's repertoire will change the likelihood of occurrence of these outcomes" (Abramson, Alloy, & Metalsky, 1990, p. 38). Abramson et al. (1989) noted that the common definition of the word "hopelessness" reflects the core components of the proximal sufficient cause described in the theory. Furthermore, according to this theory, hopelessness is a sufficient, but not necessary, cause of depression, indicating that perhaps depression is a heterogeneous disorder.

Abramson et al. (1990) develop the theory further by describing a possible causal pathway to the symptoms of hopelessness depression. This chain begins with the perceived occurrence of negative life events or nonoccurrence of positive life events.

According to the hopelessness theory, these perceived occurrences or nonoccurrences lead people to become hopeless, and may lead to hopelessness depression. It is important to note, however, that not all people who experience these perceptions, or who experience negative life events, become depressed (e.g., Brown & Harris, 1978; Lloyd, 1980a, b cited in Abramson et al., 1990). Abramson et al. (1990) identify a minimum of three types of inferences individuals may make that may impact whether or not they become hopeless, and eventually develop hopelessness depression. These are inferred cause or causal attribution about the life event, inferred consequences that may result from the event, and inferred characteristics about the self based upon the event (Abramson et al., 1990). Should these three types of depressogenic inferences be present in an individual's cognitions, then that individual is likely to develop hopelessness depression, which consists of symptoms such as lack of energy, brooding, apathy, sad affect, difficult in concentration, and mood-exacerbated negative cognitions (Abramson et al., 1997).

Since the development of the hopelessness theory of depression, and the identification of the symptoms of hopelessness depression, there have been several studies that have attempted to empirically demonstrate the existence of this depressive subtype. Joiner (2001) outlines four studies that tested the relationship of negative attributional style to symptoms of hopelessness depression versus endogenous depression. Negative attributional style is the core component of the hopelessness theory of depression. The results of these four studies indicated that negative attributional style is more related to hopelessness depression than endogenous depression.

However, as stated above, many of the symptoms of hopelessness depression require an individual to make statements about his or her inner experience; thus, an

appropriate method for assessing inner experience should be used in these studies. All of the studies described by Joiner (2001) utilized self-report questionnaires (i.e. Attributional Style Questionnaire - Extended, Metalsky et al., 1987; Beck Depression Inventory, Beck et al., 1979; Negative Life Events Questionnaire, Saxe & Abramson, 1987) to assess both the level of hopelessness depression symptoms as well as degree of negative attributional style. Other studies conducted in order to test the hopelessness theory of depression utilized various methodologies ranging from retrospective studies to behavioral self-monitoring (Alloy, Just, & Panzarella, 1997).

None of these studies are fully consistent with the five guidelines suggested above for scientifically exploring inner experience. For example, as described above, self-report questionnaires often ask people to make statements about their inner experience on a broad level. The Beck Depression Inventory (Beck et al., 1979) asks individuals to rate in terms of frequency and intensity sadness, guilt, self-criticalness, and irritability. The self-report questionnaire methodology essentially violates all five of the guidelines suggested by Heavey and Hurlburt (2002).

The daily diary method employed by Alloy, Just, and Panzarella (1997) is better than the self-report methodology, but only slightly. This study utilized self-report questionnaires (Attributional Style Questionnaire, Seligman et al., 1979; Beck Depression Inventory, Beck et al., 1979) as a screening device to identify an individual's attributional style and risk for depression. These individuals were then grouped into potential high- and low-risk groups based on their scores. Individuals with self-serving attributional scores that were close to 0 were selected for the high-risk group and those with extreme positive self-serving scores were selected for the low-risk group. All participants had to

have a score of fifteen or less on the Beck Depression Inventory to be considered for the next phase of the study. The second phase of this study included a structured interview to further narrow the sample to include no one with a current DSM-III-R Axis I disorder.

The methodological shortcomings of this study occurred in the final, daily diary phase. The authors utilized a modified version of the Inventory for Behavioral Variation (IBV; Depue et al., 1981; Goplerud & Depue, 1985). Participants completed this daily diary every day for a twenty-eight day period. The first part of this task required participants to create one list of positive events that happened to them that day as well as a list of negative events for that day. Researchers used this information to create a total number of good and bad events for each participant over the twenty-eight day period. The second part of the task required participants to rate twenty different moods, cognitions, or behaviors on ten-point graduated scales that represented a positive extreme and a negative extreme for each. Participants were asked to rate their peak level of each symptom for a particular day, their lowest level of each symptom for a particular day, as well as their average level of each symptom on each day. The symptoms included the following inner experience-related topics: energy, mood, interest in things, optimism, thought processes, self-esteem/worth, self-efficacy, world view, concentration, decisiveness, zest for life, irritability, and sexual interest.

The second portion of the daily diary task violated several of the guidelines specified for scientifically evaluating inner experience. Most problematic was that participants were asked to complete the diary such that it reflected the experiences of an entire day. This leads to the interval between the occurrence of an experience and its recording as being potentially 12 hours or more and also creates the necessity for

participants to sum or average their experiences over long periods of time using some unknown process. The researchers did instruct participants not to complete the diary for any days that were missed as an attempt to prevent distorted ratings. Finally, the moments of inner experience that participants were asked to rate were clearly defined targets (e.g. mood, energy, etc.), which can constrain and possibly contaminate findings.

In general, the limitation of this study is that it subscribes to the idea that assessing inner experience is trivially easy. Essentially, this study states that by simply asking someone to report what his or her inner experience is like, one can obtain an accurate conceptualization of that individual's inner world. Furthermore, other factors not observable via this method could strongly influence an individual's ratings on a given day. Consider, for example, that an individual oversleeps, has a flat tire, and is fired upon entering work. These factors will clearly influence how an individual feels for the rest of that day, and perhaps many days after, but this method does not assess these factors. The method used here also does not describe what an individual's experience of his or her thought processes are like and this experience may lead to or be related to the feelings of self-confidence, self-efficacy, and optimism. Lastly, when an individual is asked to consider a specific target of his or her inner experience, several phenomena can occur. According to Gilbert et al. (1998), people often overestimate the duration of their feelings after a specified event, focus on that particular event to the exclusion of others, and are unaware of the powerful psychological processes that occur to reduce negative affect. The method utilized in this study does not account for any of these processes. Thus, it is clear that in order to obtain as accurate a description as possible, a method

must be used that attempts to account for as many of the potential difficulties in exploring inner experience, such as those described above, as possible.

Although there are many methods for exploring inner experience, one in particular was developed in accordance with the five guidelines described above. This method is Descriptive Experience Sampling (DES, Hurlburt, 1990, 1993). DES is a method designed to aid in the exploration of inner experience in the natural environment. Participants carry a small beeper that beeps at random intervals. When the beeper goes off participants attempt to freeze in their awareness the inner experience that was ongoing the moment before the beep interrupted them (Hurlburt, 1990, 1993). The participant then writes notes sufficient to recall the moment when later interviewed. Once the participant collects a predetermined number of beeps, he or she participates in an interview session with an investigator. During this interview session, the participant attempts to describe his or her inner experience at each cued moment. The interviewer asks questions to help the participant explain the experience to the fullest extent possible. The goal of this interview session is to develop a high fidelity characterization of each moment of inner experience.

Clearly, inner experience is directly implicated in most, if not all, aspects of depression. Thus exploring inner experience using the Descriptive Experience Sampling Method may shed new light on the nature of inner experience as it relates to depression. One interesting aspect of depression that has been studied, but perhaps not ever in as accurate a manner as possible, is the relationship between cognitive style and risk for depression. In particular, the subtype of depression based upon Hopelessness theory postulates that an individual's attributional style relates to his or her risk for depression,

such that a negative attributional style puts one at a higher risk for developing depression. Two interesting questions arise from this assertion. First, does an individual who appears to have a negative cognitive style based upon a self-report measure actually evince this cognitive style on a daily basis? Second, do individuals who possess such a cognitive style develop depression at higher rates than those with a non-negative cognitive style? The present study will focus on the former of these two questions.

*Present Study*

The present study investigated the association between self-reported cognitive style, inner experience as revealed by Descriptive Experience Sampling, and self-reported depression. The study involved two phases. In the first phase, approximately 200 university students were administered three questionnaires that assessed psychological symptoms and cognitive and coping styles related to depression.

The Symptom Checklist-90-R (Derogatis, 1994) is a 90 item scale that measures a broad range of psychological symptomology. It asks participants to rate the frequency with which they have been bothered by a variety of psychological symptoms during the previous week on a scale ranging from 'not at all' to 'extremely.' The Symptom Checklist-90-R (Derogatis, 1994) has multiple subscales including a Depression Subscale, an Anxiety Subscale, and an Interpersonal Sensitivity Subscale. Research indicates that depression, anxiety, and interpersonal difficulties are highly comorbid (APA, 2000). Based upon this research we expect that these subscales will be highly related to each other.

Hypothesis I.1: There will be positive correlations between scores on the Symptom Checklist-90-R Depression, Anxiety, and Interpersonal Sensitivity Subscales.

The Attributional Style Questionnaire – Extended (Metalsky et al., 1987; Abramson & Metalsky, 1986) measures an individual's cognitive style with regard to how that individual interprets various negative events. This questionnaire presents participants with a number of negative scenarios, such as, "You take an exam and receive a low grade on it," and then asks several questions regarding the cause, consequences, and future implications of that event. Previous research indicates that having a negative attributional style puts an individual at an increased risk for developing a specific subtype of depression known as hopelessness depression. Based upon this research we expect that individuals with a negative attributional style will evince more symptoms of depression.

Hypothesis I.2: There will be a positive correlation between scores on the Attributional Style Questionnaire – Extended and scores on the Symptom Checklist-90-R Depression Subscale.

The Response Styles Questionnaire (Nolen-Hoeksema, 1991) assesses an individual's style of coping with negative feelings. This questionnaire asks participants to indicate how frequently they engage in various coping activities when they experience feelings of depression. Current research posits that a ruminative coping style is generally indicative of a heightened risk for depression while having a coping style that is characterized by distraction and/or problem solving is associated with a decreased risk for depression.

Hypothesis I.3: There will be a positive correlation between scores on the

Rumination subscale of the Response Styles Questionnaire and scores on the Symptom Checklist-90-R Depression Subscale.

Hypothesis I.4: There will be a negative correlation between the Rumination subscale and the Problem Solving subscale of the Response Styles Questionnaire.

Hypothesis I.5: There will be a negative correlation between the Rumination subscale and the Distraction subscale of the Response Styles Questionnaire.

In the second phase of the study, Descriptive Experience Sampling (DES, Hurlburt, 1993, 1997) was used to explore the inner experience of six participants chosen on the basis of their scores on the Attributional Style Questionnaire – Extended (Metalsky et al., 1987; Abramson & Metalsky, 1986). Individuals with a highly negative attributional style as assessed by this measure were considered the high risk group while individuals with a highly non-negative attributional style as assessed by this measure were considered to be the low risk group.

DES participants were asked to collect six samples on each of four sampling days. Participants were interviewed during videotaped sessions with the goal of developing high-fidelity characterization of the sampled moments of inner experience.

The analysis of the samples included coding for form of inner experience utilizing the codebook developed by Hurlburt and Heavey (2002). The five forms of inner experience that were coded for were Inner Speech, Images, Unsymbolized Thinking, Feelings, and Sensory Awareness. According to Hurlburt and Heavey (2002), Inner Speech is the experience of speaking words in an individual's own voice and with the same vocal characteristics (such as inflection, timbre, rate, etc.) as the person's own external speech, but with no external sound. Images are the experience of seeing

something that is known to be not actually present. Unsymbolized Thinking occurs when an individual is thinking some particular definite thought without the awareness of that thought's being represented in words, images, or any other symbols. Feelings are an emotional experience that can include sadness, happiness, humor, anxiety, joy, fear, nervousness, anger, and so on. Finally, Sensory Awareness is a sensory or perceptual experience that is itself a primary focus or theme for the subject. This can be bodily, such as an itch, hotness, coldness, pain, pressure, and so on, or external, such as smelling gasoline or noticing the color of a flower.

Each individual's inner experience was also examined ideographically in an attempt to identify any additional characteristics that were salient. Finally, each individual's inner experience was examined with respect to current theories regarding the cognitive and emotional elements of depression. The first example of such a theory regarding the nature of inner experience of depression is the "Negative Cognitive Triad," which is defined as an overly pessimistic view of oneself, one's world, and one' future (Beck, 1979). Negative Attributional Style is related to an individual's cognitive style. There are essentially three types of inferences a person can make when confronted with a negative situation; these are causal attributions, inferred consequences, and inferred characteristics about the self. Depressive symptoms are likely to occur when an individual's attributional style causes them to attribute negative life events to stable (likely to persist over time) and global (likely to affect many areas of life) causes and to view them as important, when negative events are viewed as likely to lead to other negative consequences, and when such events are construed as implying that the person is deficient and unworthy. When an individual's causal attribution(s) for a negative event

are global, stable, and internal, depressive symptoms are more likely (Abramson et al., 1990). Rumination is a cognitive process that is a method of coping with negative mood that involves self-focused attention that is characterized by self-reflection as well as a repetitive and passive focus on one's negative emotions (Nolen-Hoeksema, 2001). Lastly, Valence is simply whether an event can be construed as being negative or positive (Waschbusch, Sellers, LeBlanc, & Kelley, 2003). An exploratory qualitative analysis of the sampling data was conducted using these concepts of Negative Cognitive Triad, Attributional Style, Rumination, and Valence in order to determine what, if any, differences exist between the high- and low-risk groups on these constructs.

Hypothesis II.1: Individuals having higher scores on the Attributional Style Questionnaire – Extended will be more likely to demonstrate evidence of Negative Cognitive Triad in their samples.

Hypothesis II.2: Individuals having higher scores on the Attributional Style Questionnaire – Extended will be more likely to demonstrate evidence of Negative Attributional Style in their samples.

Hypothesis II.3: Individuals having higher scores on the Attributional Style Questionnaire – Extended will be more likely to demonstrate evidence of Rumination in their samples.

Hypothesis II.4: Individuals having higher scores on the Attributional Style Questionnaire – Extended will be more likely to demonstrate evidence of Negative Valence in their samples.

# CHAPTER 2

## METHOD

### *Participants*

Undergraduate student volunteers (N = 195) from various psychology courses completed three questionnaires designed to assess their cognitive style, symptoms of depression, and several related constructs in a screening process. All participants received research participation credit for their class upon completion of the questionnaires. The sample comprised 116 females and 79 males with a mean age of 19.74 years (SD = 2.6). Participants had an average of 1.58 years of college (SD = .88). The sample was primarily Caucasian (52%), followed by Asian (14%), Hispanic (11%), and African American (6%). The remaining 17% of the sample reported an ethnicity of "Other" or did not provide information on their ethnicity. The majority of the sample was single (92%), ten individuals were married (5%), and four reported "Other" for marital status (2%). Lastly, 65% of the sample was employed with an average number of hours worked per week of 28 (SD = 12.0). One individual in the sample did not report age, year in school, race, marital status, or employment status.

A sub-sample (N = 6) was selected from the larger group based upon Attributional Style Questionnaire – Extended scores that indicated either a highly negative or nonnegative cognitive style. The data from the 195 participants was divided

negative or nonnegative cognitive style. The data from the 195 participants was divided into quartiles, with the first (highest scoring) quartile having 49 participants, the second quartile having 48 participants, the third quartile having 49 participants, and the fourth (lowest scoring quartile) having 49 participants. Three individuals from each of the top and bottom quartiles of scores were selected to participate in the second phase of the study; the most extreme male and female from the first and fourth quartile were eliminated from the selection process. The selection process entailed starting with the second most extreme scorer from the first and fourth quartile and checking that individual's response to an item in the screening packet that asked whether or not they would be potentially interested in participating in further research. If that individual responded "yes" to this question, then he or she was called to explain that he or she had been selected to participate in the second phase of the study. The individual was then invited in to have the next phase of the study explained and to begin Descriptive Experience Sampling. Due to the facts that some individuals marked "no" on the item regarding further research participation, some individuals declined to participate when called, and some individuals did not return several messages, the participants in the study were not necessarily the three most extreme scorers in their quartile. From the first quartile, the participants ranked as follows: 5$^{th}$ most severe, 12$^{th}$ most severe, and 20$^{th}$ most severe. From the fourth quartile, the participants ranked as follows: 4$^{th}$ least severe, 13$^{th}$ least severe, and 30$^{th}$ least severe. Although sex was not specifically used as an inclusion or exclusion criteria, the selection process was conducted to ensure that each group had at least one member from each sex. This did result in some participants who had more severe scores being excluded from Phase II of the study. All participation was

voluntary, with participants being able to remove themselves from the study at any time. The six individuals chosen to participate in the study were compensated $10 per sampling interview session in which they participated.

*Materials and Apparatus*

The Attributional Style Questionnaire – Extended (Metalsky et al., 1987; Abramson & Metalsky, 1986) was used as part of an initial screening battery. There are twelve scenarios on this measure that describe various negative events, each with the same set of seven sub-questions that assess the characteristics described above as risk factors for hopelessness depression. Each sub-question is rated on a seven point scale. The anchors for each of the seven point scales varies from question to question, but generally involve such concepts as an internal versus external locus of control and globalization of situations. This measure assesses an individual's attributional style as being more or less negative based upon the degree of internality, stability, globality, perceived consequences, perceptions about the self, and perceived importance. All of these characteristics are considered to be risk factors for hopelessness depression.

The Response Styles Questionnaire (Nolen-Hoeksema, 1991) was also used as part of the initial screening battery. This 70 item checklist assesses behaviors and thoughts that individuals engage in when feeling depressed. The checklist asks respondents to endorse items as occurring "Almost Never," "Sometimes," "Often," and "Almost Always" when they are feeling depressed. This measure has four subscales. The Ruminative Coping Subscale addresses the extent to which an individual engages in

coping with a negative mood through self-focused attention that is characterized by self-reflection and a passive, repetitive focus on the negative emotions being experienced (Nolen-Hoeksema, 2001). Items on this subscale include such behaviors as thinking about how alone you feel, thinking about your feelings of fatigue and achiness, and thinking about how hard it is to concentrate. The Distraction Subscale assesses the degree to which an individual engages in behaviors to distract them from their negative mood. Sample items from this scale include watching TV to distract yourself, going to a favorite place to get your mind off your feelings, and doing something that has made you feel better in the past. The Problem Solving Subscale includes items involving the degree to which an individual attempts to problem solve in order to cope with their negative mood. The items on this scale include trying to find something positive in the situation or something you learned, reminding yourself that these feelings won't last, and talking it out with someone whose opinions you respect (i.e., friend, family, clergy). The final subscale of this measure is the Dangerous Activities Subscale. This scale measures how often an individual copes with a negative mood through participating in dangerous activities, such as taking recreational drugs or drinking alcohol, doing something reckless or dangerous, and deliberately doing something to make yourself feel worse.

The SCL-90-R (Derogatis, 1994) was administered in Phase I. This checklist consists of 90 symptoms. Participants rate each symptom with regard to the amount of distress it caused for them over the past seven days on a scale of "Not at all" (0) to "Extremely" (4). The scale includes three global distress indices (global severity index, positive symptom distress index, and positive symptom total) as well as nine scales

assessing constructs such as depression, anxiety, hostility, and obsessive-compulsive. The depression subscale consists of thirteen items that address a range of symptoms of clinical depression, such as feeling blue, feeling lonely, and feeling worthless.

Participants in Phase II of the study were given a portable shirt-pocket-sized beeper for Descriptive Experience Sampling. This beeper emits a 700-Hz beep at random intervals with a mean length of thirty minutes and a maximum length of sixty minutes. Participants were also given an earphone that connects to the beeper. This allowed participants to put the beeper in a pocket and run the earphone cord under a shirt in order to make the apparatus as unobtrusive as possible. Participants were shown how to turn the beeper on and off, adjust the volume, and reset the beeper by pressing a button. Participants were given a small notebook for recording notes about their inner experience at each beep.

*Procedure*

Prior to collecting data, approval to use human subjects was obtained from the UNLV Social Behavioral Sciences Institutional Review Board was obtained on December 12, 2002. Participants in Phase One completed the screening battery, an informed consent form, provided contact information, and indicated whether they were potentially willing to participate in further research.

Based upon the results of the initial screening battery, specifically scores on the Attributional Style Questionnaire – Extended, six individuals were selected to participate in Phase II of the study, which involved participation in Descriptive Experience Sampling. The three individuals selected with a high score on this measure were

considered to be the high-risk group while the three individuals with a low score on this measure were considered to be the low-risk group. These individuals each participated in an initial interview where DES was explained. Additionally, the participants were instructed regarding the operation of the beeper. Participants were asked to wear the beeper during a time of their choosing until six samples of inner experience were collected. Participants were asked to focus on the moment just before the beep occurred. It was explained that this is the period of interest, and therefore, participants need not report information regarding inner experience prior to or after this period. Participants were asked to record notes in the provided notebook so that they could recall the moment later. No further instructions about how the notes should be taken were given.

After the procedures were fully explained and any questions answered, each participant completed a form that indicated his or her consent to participate in the Descriptive Experience Sampling process. It was explained to the participants that they could withdraw from the study at any time. Furthermore, if there were any moments of inner experience that the participant did not wish to share, he or she was instructed to simply state that he or she did not want to disclose this information.

Interview sessions were conducted no more than 24 hours after the sampling session. These lasted approximately one hour. The goal for these interview sessions was to obtain as clear an understanding as possible of the inner experience of the individual at the time of the beeps. Each participant was compensated $10 per sampling interview. Each participant was asked to engage in four interview sessions, the first of which was considered a training session and was not utilized as data.

After each interview session, descriptions of each beep were written and

coded for type of inner experience based upon the codebook developed by Hurlburt and Heavey. This portion of the study was highly exploratory in nature, and there were no hypotheses regarding the form of inner experience. This coding was done based upon previous research that indicated that individuals evidencing different external behaviors often appear to have different forms of internal experience (Hurlburt, 1993). Each beep was also coded for evidence of negative cognitive triad, negative attributional style, negative valence, and rumination. All coding was done by consensus between the author and the thesis supervisor with each sample being compared to the following definitions of the form of inner experience (Hurlburt & Heavey, 2002):

- Inner Speech: The experience of speaking words in an individual's own voice and with the same vocal characteristics (such as inflection, timbre, rate, etc.) as the person's own external speech, but with no external sound.
- Images: The experience of seeing something that is known to be not actually present.
- Unsymbolized Thinking: Thinking some particular definite thought without the awareness of that thought's being represented in words, images, or any other symbols.
- Feelings: An emotional experience that can include sadness, happiness, humor, anxiety, joy, fear, nervousness, anger, and so on.
- Sensory Awareness: A sensory or perceptual experience that is itself a primary focus or theme for the subject. This can be bodily, such as an itch, hotness, coldness, pain, pressure, and so on, or external, such as smelling gasoline or noticing the color of a flower.

Additionally, each moment of experience was also coded for the presence of absence of the following constructs identified by depression researchers:

- Negative Cognitive Triad: An overly pessimistic view of oneself, one's world, and one' future (Beck, 1979).
- Negative Attributional Style: When an individual's causal attribution(s) for a negative event are global, stable, and internal, depressive symptoms are more likely (Abramson et al., 1990).
- Rumination: Self-focused attention that is characterized by self-reflection as well as a repetitive and passive focus on one's negative emotions (Nolen-Hoeksema, 2001).
- Negative Valence: A thought or emotion that has a negative tone. (Waschbusch, Sellers, LeBlanc, & Kelley, 2003).

Anytime there was not a consensus, the beep was coded as not representing the construct in question (e.g., negative attributional style, etc.). Disagreements occurred 3.8% of the time in the category of negative cognitive triad and 1.9% of the time in the category of negative attributional style. This translates to four samples and two samples out of 105, respectively. All interview sessions were videotaped. The information obtained was then subjected to both qualitative and quantitative analyses. The names used throughout this paper to describe the participants in Phase II of the study are fictional.

# CHAPTER 3

## RESULTS

To evaluate the first hypothesis, that there would be positive correlations between scores on the SCL-90-R Depression, Anxiety, and Interpersonal Sensitivity Subscales (Derogatis, 1994), Pearson correlations were conducted between the scores on each of these subscales. As expected there were strong, significant correlations between each of these subscales. The correlation between the Depression and Anxiety Subscales was $r = .83$, $p < .01$, between the Depression and Interpersonal Sensitivity Subscales was $r = .81$, $p < .01$, and between the Anxiety and Interpersonal Sensitivity Subscale was $r = .74$, $p < .01$.

The second hypothesis was that there would be a significant positive correlation between scores on the Depression Subscale of the SCL-90-R and scores on the ASQ-E. This hypothesis was supported, $r = .50$, $p < .01$.

Hypothesis I.3 stated that there would be a significant, positive correlation between the Rumination Subscale of the RSQ and the Depression Subscale of the SCL-90-R. Support for this hypothesis was found in that the correlation between these two subscales was $r = .71$, $p < .01$.

Hypothesis I.4 stated that a significant negative correlation would be found

between the Rumination Subscale and the Problem Solving Subscale of the RSQ. This hypothesis was not supported by the data, $r = .09$, *ns*.

Hypothesis I.5 stated that there would be a significant negative correlation between the Rumination Subscale and the Distraction Subscale of the RSQ. This hypothesis was not supported, $r = .13$, *ns*.

The hypotheses for Phase Two of the study were evaluated through data collected via Descriptive Experience Sampling. Given the small sample size in Phase II and exploratory nature of these hypotheses, significance testing was not used to evaluate these hypotheses. The first hypothesis for Phase Two of the study stated that individuals with higher scores on the ASQ-E would be more likely to demonstrate evidence of negative cognitive triad. The evidence to support this hypothesis was weak at best. One individual in the high-risk group provided examples of negative cognitive triad in his inner experience 33% of the time and one individual in the low-risk group provided examples of negative cognitive triad in her inner experience 11% of the time. None of the other individuals who participated in Descriptive Experience Sampling had any example of negative cognitive triad in their inner experience. A summary of the results for all Phase II hypotheses can be found in Table 1.

Hypothesis II.2 stated that individuals having higher scores on the ASQ-E would have more evidence of a negative attributional style in their captured moments of inner experience. The only example of negative attributional style was found in the high-risk group with one individual showing evidence of a negative attributional style in 5% of the samples

Hypothesis II.3 stated that individuals in the high-risk group would be more likely

to demonstrate evidence of rumination than individuals in the low-risk group. As there were no samples that were judged as reflecting rumination, no support was found for this hypothesis. The final hypothesis of Phase Two of the study stated that individuals with higher scores on the ASQ-E would more frequently have inner experience with a negative valence. The data provided mixed evidence for this hypothesis. There was evidence of negative valence in both the high- and low-risk groups, and the frequency of negative valence was also very spread out among and between the groups. The high-risk group had individuals who experienced negative valence 61%, 22%, and 17% of the time while the low risk group had individuals who experienced negative valence 39%, 22%, and 13% of the time. The average experience of negative valence in the high-risk group was 33.3% (SD = 24.1) and in the low-risk group was 24.7% (SD = 13.2). A one-sample t-test revealed no significant differences between the two groups with regard to frequency of negative valence, $t = 2.4$, *ns*.

TABLE 1: Phase II Descriptions of Depression Related Constructs and Form by Group and Subject

| **Depression Constructs** | **Jerry** | Freddy | Laura | Erin | Jonathan | **Monica** |
|---|---|---|---|---|---|---|
| ASQ-E (z-score) | **1.86** | 1.29 | 1.08 | -1.1 | -1.5 | **-.76** |
| SCL-90-R (z-score) | **-.11** | -1.1 | -.43 | -.15 | -.79 | **-1.1** |
| Neg. Cog. Triad | **33%** | 0% | 0% | 0% | 0% | **11%** |
| Neg. Attributions | **5%** | 0% | 0% | 0% | 0% | **0%** |
| Rumination | **0%** | 0% | 0% | 0% | 0% | **0%** |
| Neg. Valence | **61%** | 17% | 22% | 22% | 13% | **39%** |
| **Form of Experience** | | | | | | |
| Inner Speech | **55%** | 11% | 33% | 61% | 0% | **11%** |
| Images | **11%** | 33% | 61% - 17% visual words | 11% | 20% | **0%** |
| Unsymbolized Thinking | **0%** | 22% | 6% | 6% | 67% | **33%** |
| Feeling | **39%** | 28% | 17% | 17% | 27% | **28%** |
| Sensory Awareness | **33%** | 22% | 0% | 0% | 7% | **22%** |

An idiographic description of each individual was written based upon their scores on the screening battery assessments, their individual moments of inner experience, and on the experimenters' clinical impressions. The idiographic descriptions follow. The relative frequency of the five most common forms of inner experience as well as the occurrence of the depression related constructs for each of the Phase II participants can be seen in Table 1.

*Jerry – High-Risk Group*

Jerry's score on the Symptom Checklist 90-R Global Severity Index was 71 (z = -.11). His score on the ASQ-E was 392 (z = 1.86). Based upon these scores, Jerry fell into the high risk category for this study. His scores were the fifth most severe of all participants; he was the second highest scoring male.

Based upon 18 moments of inner experience captured through Descriptive Experience Sampling, it appeared that much of Jerry's experience had a negative tone. Many of his beeps revealed an overall sense of being down or angry. Multiple beeps revealed a negative view of himself as well as others around him. For example, in one beep Jerry was cleaning up after a party at his fraternity house with two friends. He was angry that no one else was there to help out. The content of this beep was inner speech, which was "why is it always just me." This beep was consistent with the idea that Jerry tends to be critical of others. An example of Jerry's self-critical style could be found in a beep that occurred as he was leaving one of his classes. He had received an exam back and was not happy with his grade. The form of this beep was him saying out loud "what am I doing wrong." He also had a general sense of being angry and a sense that if there had been something around for him to hit he would have done so.

The self-critical beep described above could also be indicative of an internal, somewhat global negative attributional style. There was no evidence of rumination. As far as form, he was experiencing either internal or external speech in nearly every moment of inner experience. Jerry reported experiencing Inner Speech during 55% of the beeps and external speech during 28% of the beeps. Jerry also experienced Sensory

Awareness with a relatively high frequency of 33%. He experienced Images 11% of the time. Jerry experienced Feelings with a frequency of 39%, and when he had a feeling it was generally a negative feeling, most frequently anger. In fact, many of the moments captured seemed to indicate an overall negative experience, with 61% of Jerry's moments of inner experience having a negative valence. Also, 33% of Jerry's beeps provided evidence of a negative cognitive triad.

After the sampling was completed, we had a brief discussion with Jerry regarding his impressions of himself and his experience with sampling. He described himself as a selfless individual who cares very much about other people's thoughts as well as their experiences. He stated that he tries to make people like him and is generally cheerful when with others. However, he followed this up by saying that he is unlikely to initiate a conversation with someone. He expressed that he is very close to his family and that his family is very important to him. Jerry indicated that he is often more down and moody when he is alone, and that he is aware of the fact that he tends to be self-critical. As far as his experience with sampling, Jerry felt confident regarding the accuracy of his reports.

*Freddy – High-Risk Group*

Freddy was perhaps one of the most interesting participants in this study. His score on the Symptom Checklist 90-R was 19 ($z = -1.1$), which is quite low. His score on the ASQ-E was 357 ($z = 1.29$). Freddy's scores on the latter three measures placed him into the high risk group for this study. He was the fourth highest scoring male of all participants.

Despite Freddy's placement into the high risk group by these measures, his captured moments of inner experience revealed a very different picture. While a few moments of inner experience contained evidence of negative valence (17%), the events that preceded these moments were events that seem to logically lead to a more negative thinking style. For example, one beep caught Freddy thinking about having to cancel two trips due to his starting a new job earlier than he had expected. At this moment he felt annoyed and angry. He was also thinking of what he needed to do to cancel these plans and that his friends might think badly of him when he told them the news. This moment clearly had a negative valence. However, the preceding event, finding out he had to cancel to trips, was also negative and could reasonably result in this style of thinking. Another beep also caught him thinking about this same situation as he was e-mailing friends about the cancellation. This beep also contained evidence of negative valence. Again, when the preceding event is considered, this response seems reasonable.

The bulk of Freddy's captured moments of inner experience were varied as far as content. Many of them caught him engaging in everyday life activities or having various thought processes. For example, one beep caught him doing a search on the computer to find out when two musicians were going to be coming to town while another beep caught him pondering whether he should pursue a romantic relationship with an older woman friend of his and yet another caught him staring at a poster of the Eiffel Tower while on the phone in his bedroom. With regard to form, Freddy experienced Images and Sensory Awareness most frequently, with both occurring 33% of the time. This was followed by Feelings and Unsymbolized Thinking, which both occurred 28% of the time. Freddy experienced Inner Speech with the lowest frequency (11%) and had one instance of inner

hearing. Three of Freddy's beeps had evidence of negative valence (17%). There was no evidence of rumination, negative cognitive triad, or negative attributional style.

During a brief conversation with Freddy after sampling was competed he stated that the experience of participating in sampling was OK. He found that he now thinks more about what other think about as well as thinking about himself more. He found it to be a learning experience and indicated that he was "brutally" honest about what was going on at the moment of each beep. He was surprised to find out that he was in the high risk category as he does not feel that he is a negative thinker. He felt that he is optimistic yet realistic and takes responsibility for his actions. He also stated that he is careful of and aware of negative things so he can avoid them. After considering his answers to the open ended questions on the ASQ-E, his high score on that measure may be a misrepresentation and simply an indication of how seriously he takes his responsibilities in life. Overall, in talking to Freddy, he did not come across as someone who is at a high risk for developing depression. He seemed like someone who takes things in life seriously when they ought to be, but also is able to relax and enjoy many different activities.

*Laura: High-Risk Group*

Laura, like Freddy, did not seem to quite fit a high-risk profile despite her scores on the screening measures. Her score on the SCL-90-R was 54 ($z = -.43$), which was relatively low. It was her scores on the ASQ-E that resulted in her resulted in her placement into the high-risk group. Her score on the ASQ-E was 344 ($z = 1.08$). Laura was the thirteenth highest scoring female of all participants.

Although Laura was placed in the high-risk group due to her scores on the ASQ-E, she did not have any examples of negative cognitive triad, negative attributional style, or rumination in her samples. Laura did, however, experience negative valence in 22% of her captured moments of inner experience. Some examples of Laura's inner experience that was characterized by negative valence included an instance where she was thinking about buying books for school. She had driven past a bookstore and was seeing in her head the words 'must buy books' in red, glowing letters on a black background. She conceptualized this as a negative moment because she hates buying books. Further examples of negative valence were found in Laura's interactions with others. Two beeps caught her feeling frustrated with her boyfriend, one in response to something he said that she perceived as stupid and the other in response to his not being able to get the car door open with a hanger after the keys had been locked inside. In both of these instances, she was having an inner speech experience of saying "aargh" in her head just as if it had been said out loud. In both cases this sound was the manifestation of the irritation and frustration that she was feeling. Similar to Freddy, some of these moments were preceded by a negative event, such as locking the keys in the car, which suggests that these were normal reactions to events that would typically be categorized as frustrating.

The remainder of Laura's beeps were varied with regard to content. Many of them involved everyday interactions with friends. For example, one beep caught her out with some friends, laughing, and a friend had said that she sounded like a cartoon character. At this moment, Laura was having an image of the particular cartoon character, which made her laugh even more. Other beeps included Laura reading about

an expensive necklace in a magazine and wondering whether people actually buy such items, looking at a poster at her work and wondering if the celebrity depicted hates her feet because they never seem to be shown in photographs, and listening to the band warming up at her work while having an image of a portion of the show that coincides with the particular song they were playing.

Laura experienced Inner Speech 33% of the time, Unsymbolized Thinking 6% of the time, and Feelings 17% of the time. She had no examples of Sensory Awareness. Perhaps Laura's most interesting form of inner experience was the frequency of Images of words. She experienced some form of mental image 61% of the time, and of that 61% she experienced visualizations of specific words 17% of the time. She was the only individual in the study to experience this phenomenon.

In talking with Laura after the interview process was completed, she disclosed that she was surprised to be in the high-risk group. She stated that she would never consider herself to be a negative thinker and would describe herself as someone who is upbeat, rarely mad, and "smiley." Laura did in fact present as someone who is generally cheerful, although perhaps easily frustrated by the actions of others. Despite that quality Laura did not seem to fit the profile of someone who would be at a high risk for developing depression. When the actual process of participating in the study was discussed, Laura did disclose that she felt negative after completing the screening questionnaires due to the focus on negative events. Additionally, Laura found the sampling difficult to do at first because she felt that she was not generally so detailed in considering her inner experience and she felt that the process was unnatural. However,

she did state that the sampling was fun for her because it increased her awareness of herself.

*Erin: Low-Risk Group*

Erin's score on the Symptom Checklist 90-R Global Severity Index was 69 (z = -.15). Her score on the ASQ-E was 210 (z = -1.1). Based upon these scores, Erin fell into the low risk category for this study. She was the third lowest scoring female of all participants.

The eighteen moments of inner experience that were considered indicated that Erin's experience is varied as far as tone. Some of her moments had a negative tone, but many simply had a neutral, "mundane tasks of life" tone. For example, one of Erin's beeps that had a negative tone involved her sitting in her sister's room talking about her day. Earlier in the day Erin had had an encounter with a neighbor and was telling her sister about it. At the moment of the beep, she was saying "That guy is just so nosy" out loud and in a more forceful tone than she would normally use. She also stated that she was physically feeling frustrated by the encounter with the neighbor and that this frustration was manifested by her forceful tone of voice. Another moment that had a somewhat negative tone involved Erin having an image of herself and some friends preparing to go out to lunch. There had been some difficulty determining which car everyone should go in, and Erin thought that this was aggravating and dumb.

Most of Erin's other captured moments of inner experience involved daily life tasks. For example, one beep caught her driving to school, listening to the radio, and looking at a vehicle in the lane next to her. She was watching this vehicle and saying to

herself in her head, "Please don't go in front of me and cut me off." Another beep caught her getting ready for school. At this time she was walking into the bathroom and saying to herself in her head, "Gotta put on my make-up." Multiple beeps caught her participating in some act of studying for exams. There are many more examples of these types of moments; in fact, most of Erin's beeps captured experiences like these. Thus, it seems that most of Erin's experience is of a fairly even keel and mostly involves participation in the daily life tasks most of us engage in.

It is interesting to compare Erin's negative moments to Jerry's. Many of Jerry's beeps included content that was critical of both self and others. This is not particularly evident in Erin's beeps, although there were two examples of her thinking and talking about a neighbor that she finds to be particularly nosy. This was still at a decreased frequency as well as intensity compared to Jerry's samples. Additionally, most of Jerry's beeps, even those involving daily life types of activities, had an overall negative tone to them. The majority of Erin's beeps had a more neutral tone; however, she did experience negative valence at the third highest frequency in the sample. Her frequency of negative valence was 22%, compared to 61% for Jerry.

With regard to form, Erin was experiencing Inner Speech 61% of the time. Sensory Awareness was the form that she reported experiencing with the second greatest frequency, which was 33%. This was followed by Feelings, Unsymbolized Thinking, and Images, which occurred 28%, 17%, and 11% of the time respectively. Erin's captured moments of inner experience indicated no presence of a negative cognitive triad, negative attributional style, or rumination.

After the sampling was completed, a brief discussion occurred with Erin in which she was asked to describe herself. She described herself as an upbeat person who doesn't let things get her down. This description is consistent with Erin's placement in the low risk group as well as the minimal evidence of negative thoughts or feelings found through sampling.

*Jonathan: Low-Risk Group*

Jonathan was solidly placed in the low-risk group by his scores on the ASQ-E. He was the second lowest scoring male in the sample. His score on the ASQ-E 184 ($z = -1.5$). His score on the SCL-90-R was also low at 35 ($z = -.79$). Both Jonathan's samples of inner experience and his presentation during the interviews supported his placement in the low-risk group.

Jonathan experienced negative valence in 13% of his inner experience samples, which translated to two instances of negative valence out of the fifteen moments of inner experience considered. The first of these samples caught Jonathan hoping that the beeper was not going to go off as he did not want to have to explain to the people he was with why he was wearing a beeper. This was categorized as having a negative valence because of the discomfort Jonathan was feeling. This thought was not in any specific words or images, but was metaphorically floating through the "back of his brain." The other moment that was characterized as having a negative valence found Jonathan with a friend who was looking through his sampling notepad and he was thinking that he did not want her to be looking at it. This thought was not in words or images. He was also feeling a mild apprehension along with the thought that he did not want her looking at the

notebook because he felt that it was messy and had spelling errors. It was noteworthy that these were the only two instances of negative valence in Jonathan's samples and both of them involved the sampling process itself and his apprehension about others knowing what he was doing. He had no examples of negative attributional style, negative cognitive triad, or rumination.

Jonathan's other samples included many daily life activities, such as reading an e-mail from a friend and feeling good that he has people in his life who genuinely care about him, talking to his roommates about getting the air conditioning in their house fixed, ordering tickets to an event and having a mental image of himself and his friends at the event, and feeling the cool air in his house after the air conditioning was fixed while not having any worries and feeling good.

With regard to form, Jonathan experienced no Inner Speech. He experienced Images 20% of the time, Unsymbolized Thinking 67% of the time, Feelings 27% of the time, and Sensory Awareness 7% of the time. Jonathan's frequency of Unsymbolized Thinking was much higher than the other participants in the study.

A brief discussion took place with Jonathan after sampling was completed to obtain his feedback on the sampling process as well as his placement in the low-risk group. He agreed with the fact that he was placed in the low-risk group and his presentation confirmed this. Jonathan presented as an intelligent, well-adjusted, generally cheerful individual. He described himself as outgoing, good academically, wanting organization, and religious. With regard to the sampling process itself, Jonathan stated that he had never really thought about his thinking style before so this was an interesting process for him.

*Monica: Low-Risk Group*

Monica fell into the low-risk group based upon her scores on the ASQ-E, which ranked her as the fourteenth lowest scoring female in the sample. Her score on the ASQ-E was 231 (z = -.76). Her score on the SCL-90-R was very low at 16 (z = -1.1).

However, despite her scores, Monica presented as someone who was at risk for depression. While Monica demonstrated no evidence of negative attributional style or rumination, she was one of only two individuals who had evidence of negative cognitive triad, which she experienced 11% of the time, and she experienced negative valence with a frequency of 39%. Her frequency of negative valence was actually higher than both Freddy's and Laura's, both of whom were placed in the high-risk group. In some instances, Monica's evidence of negative cognitive triad and negative valence overlapped. For example, one sample caught Monica sitting in her room using her laptop. She was feeling bored, lonely, and useless at this time and felt a sense of heaviness in her body related to this feeling. This moment had both a negative connotation as well as an exemplar of Monica having a negative view of herself (feeling useless), which is a core characteristic of negative cognitive triad. Another sample found Monica in a golf class staring at a ball on a mat and saying to herself, "I'm never going to get this." Again, this instance provided evidence of both a negative cognitive triad and a negative valence. Other samples that indicated negative valence included Monica wishing that her boyfriend had called while wanting to be held in a way that would make her feel safe, her feeling frustrated because her friends had asked several times why she was wearing a beeper, and her feeling apathetic about one of her classes.

The majority of Monica's other samples were examples of day to day activities, although few of them had any explicitly positive aspects. Many of her moments were fairly neutral, if somewhat 'blank'. For example, during one sample Monica was studying and looking at a page but not paying attention to it. This sample was accompanied by the physical sensations of her head beginning to hurt and a sense of warmth in her body. Another sample found Monica noticing the colors on a card she had received from her parents. There was a general sense of happiness during this sample, but at the precise moment of the beep she was simply focusing on the colors. This sample was followed by another where she was hanging this card on the wall in her room. Although there was a general happy tone to this moment, she was primarily focused on the unpleasant sensation of stretching in her muscles as she hung the card. Thus, often even Monica's 'positive' moments had somewhat of a negative tinge. This was a key piece of the dichotomy of this participant, who had scores on the screening measures that suggested psychological health, but presented in a very different manner.

With regard to form, Monica experienced no Images, Inner Speech at a frequency of 11%, Unsymbolized Thinking 33% of the time, and Feeling and Sensory Awareness 28% and 22% of the time, respectively.

During the discussion with Monica at the conclusion of the sampling, she indicated that she had been having difficulties with depression and that she was currently receiving counseling at the student counseling service. During all of the sampling interviews Monica displayed a subdued demeanor, speaking softly and appearing to be mildly depressed. Thus it appears that Monica was misclassified by the questionnaires in that she was struggling with depression at the time of sampling.

# CHAPTER 4

## DISCUSSION

Phase I of the study yielded mostly the expected results. The correlations indicated that the Depression, Anxiety, and Interpersonal Sensitivity Subscales of the SCL-90-R were related as expected. Additionally, the expected results were obtained with regard to the relationship between the SCL-90-R Depression Subscale, the ASQ-E, and the RSQ subscales. The correlations between these measures were quite high, particularly between the SCL-90-R Depression Subscale and the Rumination Subscale of the RSQ, which leads to the suspicion that perhaps this measure is not really measuring a separate construct but is in some way directly measuring depression. In other words, perhaps the construct of rumination is simply an alternate way of defining depression rather than a separate construct. Another possibility is that the definitions of these constructs are not clearly differentiated enough from the definition of depression, and thus, lend themselves to questions similar to those used to assess depression. For example, the Rumination Subscale of the RSQ asks questions regarding how frequently someone copes with a negative mood through "thinking about how alone you feel," "thinking about your feelings of fatigue and achiness," and "thinking about how hard it is for you to concentrate." These items do not differ significantly from those on the Depression Subscale of the SCL-90-R, which include how frequently an individual was

distressed by "soreness of your muscles," "trouble concentrating," and "feeling lonely" in the last seven days.

Finally, in Phase I, the only hypothesis that was not supported involved the relationship between the Rumination, Problem Solving, and Distraction Subscales of the RSQ. It was expected that a significant, negative correlation would be found between the Rumination Subscale and the Problem Solving Subscale as well as between the Rumination Subscale and the Distraction Subscale. These correlations were neither significant nor in the expect direction.

Based upon these data, the support obtained here for the Rumination Theory of Depression was mixed. As stated above, the Rumination Subscale of the RSQ correlated strongly with the Depression Subscale of the SCL-90-R. However, the meaning of this correlation is unclear given the substantial overlap in the nature of the items on these two scales. Furthermore, this theory of depression indicates that individuals having a Problem Solving or Distraction coping style are at a decreased risk for depression, which implies negative correlations that were not found. In the future, it would be interesting to examine whether the RSQ rumination scale predicts future depression better than past depression scores. This would help answer the question of the extent to which these things are separable and the extent to which the RSQ provides additional information beyond current level of depression.

As Phase II of the study was much more exploratory in nature, it is worth commenting on what conclusions can be drawn from it. The most striking outcome of Phase II was that was a high level of discordance between risk as determined by the ASQ-E and risk as assessed via the DES and clinical interviews. Two of the three

individuals labeled as being at a high-risk for depression based upon ASQ-E did not appear to be at an increased risk based upon clinical impressions during interviews. Similarly, most of the depression related constructs that were coded for were notably absent from two of the three individuals judged to be high-risk based on the ASQ-E. Additionally, one individual determined to be at a low-risk for depression based upon the ASQ-E not only appeared to be at risk for depression based upon clinical impressions generated during interviewing and the presence of multiple depression related constructs, she was actually receiving treatment for depression. Although this discrepancy in "risk judgment" was certainly striking, the reasons for it are unclear. It may be that the ASQ-E is not completely accurate in assessing risk for depression. One reason for this may be the exclusion of the open-ended question when scoring the measure.

The overall impressions of the researchers were that two of the six individuals were actually at a greater risk for depression while the other four demonstrated little to no evidence of such a risk. When looking at these two individuals, Jerry and Monica, compared to the rest of the sample utilized in Phase II there were clear differences in the inner experience of these two individuals. For example, both Jerry and Monica had evidence of a negative cognitive triad in their samples, while none of the other individuals in the study did. Additionally, Jerry provided the only example of negative attributional style found in the sample. Jerry and Monica had examples of negative valence in their samples with the greatest frequency, 61% and 39%, respectively. Finally, both of these individuals had a more depressed feel to them as determined by the clinical impressions of the researchers during interviewing.

In contrast, the other four individuals who participated in Phase II of the study had no evidence of negative cognitive triad or negative attributional style. Although all participants experienced some degree of negative valence in their samples, all of the other participants experienced this phenomenon at a lower rate than Jerry and Monica, with a range of 13% to 22% and an average of 18.5%. Furthermore, the negative valence experienced by these four participants was often in response to a frustrating, disappointing, or anger-inducing life event where the negative valence seemed to be reasonable. While in some cases this also applied to Jerry and Monica, they experienced negative valence at an increased frequency and in response to events that were not as universally negative as the other four participants. These results provide some support for the idea that perhaps commonly used questionnaires are not the best possible methodology for assessing and diagnosing depression. The results of DES seem to have provided a clearer picture of what the experience of these individuals actually is like, and in many instances it appeared to contradict the results of the questionnaires administered. However, the sample size of this study was too small to make a definitive statement about these results. It would be useful in the future to replicate this study with a larger sample size in order to further this hypothesis that questionnaires are not as accurate or effective in the diagnosis of depression.

Given the small sample size it is difficult to determine if there are any meaningful relationships between depression or risk for depression and the form of inner experience in this sample. Jerry and Monica, the two participants judged to be the most depression-prone experienced infrequent Images (5.5% versus an average of 31.25% for the other

participants) and levels of Sensory Awareness that were generally higher than the others in the sample (27.5% versus 7.25%).

In conclusion, it cannot be definitively determined which constructs must be present for an individual to be at an increased risk for depression. The results presented here may indicate that simply the presence of increased negativity, without regard to any particular aspect of one's life, could be a risk factor for depression as both of the individuals who seemed to be at the greatest risk for depression also had the highest levels of negative constructs in the sample. It is unclear if the other depression-related constructs examined add to our understanding of or our ability to predict depression. With regard to the form of inner experience, some patterns did emerge which should be explored further in future studies.

Due to the exploratory nature of this study, there were multiple limitations. One major limitation is that although the methodology behind many questionnaire-style assessments is flawed as described earlier in this study, they are currently the only means of categorizing individuals as being at a high- or low-risk for depression. Thus, although Descriptive Experience Sampling provides much more insight the inner world of participants and may alter the conclusions that were drawn from the questionnaires, the fact still remains that the questionnaires, however flawed, must be utilized as a screening measure. This is not to say that DES is without limitations as well. The very nature of the process is very labor intensive for both participants and researchers, which in this study limited sample size significantly for Phase II of the study. The labor intensive nature of DES also limited the number of sampling days that took place, which also resulted in a possible loss of data. Another limitations of DES as a method is the

possibility that these constructs do not occur with great frequency and thus could be missed by using this method. Additionally, there is great reliance on the honesty of the subjects, which presents a problem in that this method does not assess whether subjects are being honest or not, but simply takes their reports at face value. Another potential criticism of this study is that the categorizations of the depression-related constructs for each sample were too strict. For example, we coded Negative Valence as occurring in a sample only when both raters agreed that the particular sample explicitly met our definition of Negative Valence. Is it possible that Negative Valence might be occurring at some implicit level that was missed by our explicit categorization? To combat this potential criticism, we re-analyzed all the samples using a definition of Negative Valence that included either explicit or implicit negativity. Our intent in this recategorization was to "lower the bar" on our categorizations. If our original categorization might have been too strict, let's now create a categorization that might be too loose, to see the extent to which the categorization strategy itself might affect our conclusions.

For example, the following sample was not coded as (explicit) Negative Valence in our original coding, but was coded as (implicit or explicit) Negative Valence when we recoded the samples: Monica was digging through her backpack trying to find her student ID. She was saying to herself in her head, "Where is it?" At the same time, she was feeling somewhat overwhelmed and confused. This was accompanied by feeling warm all over, but particularly in her head, and sweating.

The result of this re-analysis was that 10 moments not previously categorized as (explicit) Negative Valence would now be categorized as (implicit or explicit) Negative Valence. The impact of this recoding was small, as can be seen most clearly in the

Negative Valence row of Table 1. The Negative Valences for each participant using the explicit criteria were 61%, 17%, 22%, 22%, 13%, and 39%, as was originally presented in Table 1. After classifying the data using the implicit-or-explicit definition of Negative Valence, this row would read as follows: 72%, 17%, 39%, 28%, 27%, and 50%. Although there was an increase for nearly every individual, this increase was not very significant. This implies that whether an explicit or implicit definition of negativity is used, negativity is simply not occurring with high frequency in our sample. Lastly, a final limitation of this study was that only two researchers coded the samples for the presence or absence of depression related constructs as well as for the form of the inner experience. It would have been useful to have multiple coders, preferably who were blind to the purpose of the study, conduct this portion of the research and to conduct subsequent reliability checks.

There is room for much future research in this area that could clarify some of the questions left unanswered here. Some potential studies that could develop based upon the method utilized and results obtained in this study include having multiple blind raters rate the valence of each sample, having the participants rate their moments in terms of valence and comparing these ratings to those of blind researchers, repeating the study with an increased sample size in Phase II, and conducting more sampling days and interviews to obtain a better understanding of the participants in Phase II.

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# VITA

Graduate College
University of Nevada, Las Vegas

Nicole Ann Cavenagh

Local Address:
8039 Aspendale Drive
Las Vegas, Nevada 89123

Degrees:
Bachelor of Arts, Liberal Arts and Science, 2000
University of Illinois, Chicago

Publications:

Heavey, C.L., Hurlburt, R.T., Cavenagh, N., & Perlotto, C. (2003). Exploring the experience of depression. Paper presented at Western Psychological Association, Vancouver, British Columbia.

Hurlburt, R.T., Heavey, C.L., & Cavenagh, N.A. (2002). An exploration of the form of unaltered inner experience. Poster presented at Western Psychological Association, Irvine, CA.

Thesis Title: An Exploration of Attributional Style Using the Descriptive Experience Sampling Method

Thesis Examination Committee:
Chairperson, Dr. Christopher L. Heavey, Ph.D.
Committee Member, Dr. Russell T. Hurlburt, Ph.D.
Committee Member, Dr. Marta Meana, Ph.D.
Graduate Faculty Representative, Dr. Kathryn Hausbeck, Ph.D.