

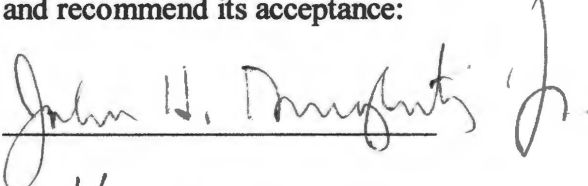
To the Graduate Council:

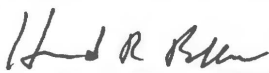
I am submitting herewith a dissertation written by Lisa Lillard Oglesby entitled "Depression, Cognition, and Anosognosia in Alzheimer's Disease: A Rorschach Analysis." I have examined the final paper copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.



Leonard Handler, Major Professor

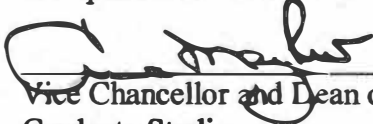
We have read this dissertation
and recommend its acceptance:







Acceptance for the Council:



Vice Chancellor and Dean of
Graduate Studies

Thesis
2006b
.035

**Depression, Cognition, and Anosognosia
in Alzheimer's Disease: A Rorschach Analysis**

**A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville**

**Lisa Lillard Oglesby
August 2006**

DEDICATION

This dissertation is dedicated to the individuals with Alzheimer's disease and their families who selflessly gave not only their time, but a part of themselves, to this research project. Their motivation lies in the hope that a better understanding of the nature and process of the disease challenging them is possible. To the individuals with Alzheimer's disease, *my* hope is that I have made some contribution toward that end.

ACKNOWLEDGMENTS

Many thanks go to all who helped this project come to fruition. To Dr. Handler who gave me the opportunity to pursue a career in psychology; to Dr. Pollio who helped me bring heart and soul to research; to Dr. Dougherty who shared his clinical expertise as well as his medical practice; and to Dr. Lounsbury who helped me maintain perspective in what was at times overwhelming academia – my most sincere thanks and appreciation.

Special thanks to Chad Sims for being a dedicated scoring partner in establishing reliability on the Rorschach. Thanks are also extended to the Cole Neuroscience Center for allowing the use of the facility for data collection, and specifically to the staff at Cole for their logistical support in scheduling appointments and organizing details.

And to Eric and Connor, and all others I have slighted of deserved time and attention out of necessity to complete this goal, thanks for your love and patience.

ABSTRACT

Research investigating the relationship between depression and anosognosia, or lack of insight, in Alzheimer's disease has reported positive, negative, and no correlation. One possible reason for the discrepant findings may be due to depression not being accurately assessed or cleanly defined. Overlap between the symptoms of depression and dementia make discerning the presence of depression in dementia difficult, especially when diagnosed by interview or self-report methods. Further, the role cognitive dysfunction associated with Alzheimer's disease and premorbid psychological functioning play in depression and anosognosia also remain poorly understood, as does the effect on the phenomenological perspective of the individual with Alzheimer's disease. The present study sought to clarify these issues by utilizing the Rorschach Inkblot test in conjunction with the Comprehensive Scoring system to assess depression and other variables possibly contributing to this construct.

Projective assessment of depression with the Rorschach sidesteps the behavioral symptoms and conscious filters that cloud accurate diagnosis while allowing consideration of additional factors such as ease and ability with which affect is processed and perceived social inadequacy in the individual. As a neuropsychological instrument, the Rorschach variables associated with the Cognitive Triad – information processing, cognitive mediation, and ideation – allow inclusion of information on the cognitive functioning of the individual as well.

Forty-two individuals diagnosed with Alzheimer's disease were assessed with a self-report instrument, the Geriatric Depression Scale (GDS), the Mini-Mental State Exam, and the Rorschach. Variables taken or derived from the Rorschach consisted of an

indicator of depression, the DEPI; an assessment of ability to moderate and process affective, AFFECT; a gauge of perceived social inadequacy, the CDI; and, the three variables of the Cognitive Triad. A brief indicator of past psychological functioning was also obtained, and each participant was also asked to share his/her personal perspective on having been diagnosed with memory problems.

As expected, correlations between self-report measures of depression and projective measures were non-significant. Contrary to predictions, neither measure demonstrated a significant correlation with anosognosia, and ANCOVA's showed no significant difference between the means of DEPI or CDI based on past psychological history or anosognosia status. A stepwise linear regression indicated that AFFECT, CDI, and Cognitive Mediation accounted for a significant amount of variation of depression, but past psychological history or anosognosia did not account for any additional variation. Phenomenological interviews were reviewed for predominate themes across all protocols, while individual responses yielded new insight into how anosognosia affects the individual's perception of the world and may contribute to depression. Integration of all analyses suggests that depression and anosognosia are multidimensional constructs, as is cognitive dysfunction in Alzheimer's disease, making a single unidimensional relationship unlikely. Instead, the variability reported in studies should be considered a reflection of the complexity of the constructs involved.

TABLE OF CONTENTS

Chapter	Page
1. LITERATURE REVIEW.....	1
Alzheimer's Disease, Anosognosia, and Depression.....	1
Assessing Depression in Alzheimer's Disease.....	6
The Rorschach in Alzheimer's Disease: Special Considerations.....	16
Reality is a Subjective Experience: The Phenomenological Approach.....	20
Purpose of Investigation.....	23
Questions, Concerns, & Hypotheses.....	24
2. METHODOLOGY.....	27
Measures.....	27
Cole Anosognosia Scale for Alzheimer's Disease (CASAD).....	27
Geriatric Depression Scale (GDS).....	27
Mini Mental State Exam (MMSE).....	28
Rorschach Inkblot Test.....	28
Methods.....	31
Participants.....	31
Procedure.....	31
3. STATISTICAL ANALYSES.....	35
Quantitative Analyses.....	35
Qualitative Analyses.....	37
4. RESULTS.....	39
Scoring Reliability.....	39

Quantitative Findings.....	39
Qualitative Findings.....	45
Change and Comparison in Relationships.....	45
Change and Comparison in the Self.....	47
Change and Comparison in Time.....	48
Change and Comparison in the Physical Environment.....	48
Thematic Structure.....	49
Patient Reflections on Life with Alzheimer's Disease.....	50
Handling It.....	50
This is 'Non-Sense'.....	51
5. DISCUSSION.....	53
Rorschach Administration in Individual's with Alzheimer's Disease.....	53
Comparison of Self-report versus Projective Assessment of Depression –	
Question 1.....	57
Influence of Anosognosia and Past Psychiatric History on Depression and Social	
Coping – Question 2.....	61
Cognition, Affective Functioning, Social Coping, and Depression –	
Question 3.....	62
Predicting Depression – Question 4.....	66
The Big Picture – Qualitative Case Studies.....	67
The Wake-up Call.....	67
Will the Real Reality Please Stand Up?.....	73
Limitations of the Study.....	80

Summary and Conclusion.....	82
LIST OF REFERENCES.....	87
APPENDIX.....	101
VITA.....	123

LIST OF TABLES

Table	Page
A-1. Kappa Statistics for Rorschach Variables.....	106
A-2. Correlations of Self-Report and Projective Measurements.....	107
A-3. Correlations of Depression, CDI, and Anosognosia.....	108
A-4. Descriptive Statistics for DEPI ANCOVA.....	109
A-5. Tests of Between-Subject Effects for Depression Index.....	110
A-6. Descriptive Statistics for CDI ANCOVA.....	111
A-7. Tests of Between-Subjects Effects for Coping Deficit Index.....	112
A-8. Model Summary of Stepwise Linear Regression for DEPI.....	113
A-9. Coefficients for Linear Regression.....	114
A-10. Model Summary of Linear Regression of Geriatric Depression Scale.....	115
A-11. Descriptive Statistics for Information Processing.....	116
A-12. Descriptive Statistics for Cognitive Mediation Variables.....	117
A-13. Descriptive Statistics for Ideation Variables.....	118
A-14. Comparison of Means in Alzheimer Group to Exner Norms.....	119
A-15. Descriptive Statistics for Geriatric Depression Scale.....	120
A-16. Wilcoxon Signed Ranks Test for Geriatric Depression Scale.....	120
A-17. Tests Statistics for Wilcoxon Signed Ranks Test.....	121

LIST OF FIGURES

Figure	Page
A-1. Hypothetical Schema of Relationship of Depression, Coping Ability, and Anosognosia in Alzheimer's Disease.....	103
A-2. Pathological Indices for Rorschach Variables.....	104
A-3. Diagram of Thematic Structure.....	105

CHAPTER 1

LITERATURE REVIEW

Alzheimer's Disease, Anosognosia, and Depression

The most common cause of dementia, Alzheimer's disease, is considered currently to affect 5 million people in the United States (Aisen, 2002) and is estimated to reach 14 million by 2040 (Siberfeld, Rueda, Krahn, & Naglie, 2002). Technically, Alzheimer's disease remains a diagnosis of exclusion *in vivo* (American Psychiatric Association, 2000) making its determination presumptive until post-mortem confirmation (Morris, 1996). However, detailed clinical evaluation by specialists experienced in the diagnosis and treatment of Alzheimer's Disease can diagnose the disease with pre-mortem accuracy between 80% to 90% of the time (Seltzer, Vasterling, & Buswell, 1995; Turner, 2003). Still, since industry standard clings to autopsy being the only way to definitively identify the neurofibrillary tangles and beta-amyloid plaques that hallmark the cerebral pathology of Alzheimer's Disease (Mouton, Martin, Calhoun, Dal Forno, & Price, 1998; Plaud, Moberg, & Ferraro, 1998), the diagnosis given is either 'Possible Alzheimer's Disease' or 'Probable Alzheimer's Disease'. The accompanying dementia is often referred to as Dementia of the Alzheimer's Type, or DAT.

The specific criteria that guide the application of this diagnosis vary somewhat according to whether one uses guidelines established by the National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer's Disease and Related Disorders Association (NINCDS-ADRDA; McKhann et al., 1984) or the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders, 4th ed., text revision (*DSM-IV-TR*, 2000). Both are similar, however, in the focus on

cognitive decline in an individual that cannot otherwise be accounted for. Assessing cognitive functioning in Alzheimer's disease has been the hallmark for determining clinical diagnosis, disease progression, and success of therapeutic intervention.

Numerous neuropsychological tests are used to pinpoint specific areas of cognitive dysfunction such as attention, memory, executive functioning, language, and visuospatial ability (Butters, Salmon, & Butters, 1994). Clinical diagnosis requires a decline in memory combined with degradation in at least one other cognitive domain such as language, abstract reasoning, visuospatial skills, or executive functioning (Turner 2003). Although less often formally assessed, another cognitive dysfunction producing considerable effects and occurring in a substantial number of individuals with Alzheimer's disease is anosognosia.

Anosognosia is defined as the lack of insight into one's own dysfunction. In the context of Alzheimer's disease, the individual is unaware that he or she has a memory deficit or cognitive dysfunction, which, in reality, does exist and can range from mild to quite severe. Since the early 1990's, anosognosia has been a topic of discussion and research in the professional literature as the understanding of its course and presentation in Alzheimer's disease unfolds. Migliorelli et al (1995) documented the importance of determining anosognosia status. In their study, individuals with Alzheimer's disease and anosognosia demonstrated greater cognitive impairment, increased problems in daily living skills, and higher mania scores, as well as longer disease duration.

Although initially confused with a conscious denial of having Alzheimer's disease, with supporting evidence (Michon, Deweer, Pillon, Agid, & DuBois, 1994; Ott, Noto, & Fogel, 1996) the prevailing professional sentiment quickly came to accept anosognosia as

related to the cerebral pathology of the disease process (De Leonni-Stanonik, et al., 2002; Mangone, et al., 1991). Further research led to the separation of anosognosia into cognitive, behavioral, psychiatric, and executive domains, capable of existing at differing levels simultaneously and consecutively within an individual (Kotler-Cope & Camp, 1995; Starkstein, Sabe, Chemerinski, Jason & Leiguarda, 1996). A preliminary study by Kotler-Cope and Camp (1995) indicated that lack of awareness of cognitive decline could occur while insight into psychiatric and behavioral problems were preserved.

The changing definition of anosognosia has made the establishment of its prevalence elusive. Estimates vary from 20% to 80% in the literature (Agnew & Morris, 1998). Multiple factors contribute to the variability of this figure, not the least of which relates to how the presence of anosognosia is assessed. Earlier studies would either simply inquire of the patient regarding their memory problem and determine a rating of insight (Reed, Jagust, & Coulter, 1993; Verhey Ponds, Rozendaal, & Jolles, 1995) or determine its presence by clinical interview (Seltzer, Vasterling, & Buswell, 1995). More recent investigations relied on difference scores between questions asked to both patient and caregiver (Migliorelli et al., 1995; Smith, Henderson, McCleary, Murdock, & Buckwalter, 2000; Starkstein et al., 1997) and have established this approach as the current research standard.

Controversy also centered on whether anosognosia exists in some individuals from early in the disease process or whether it develops as memory declines and the disease worsens. The current tide supports anosognosia as a concomitant of the disease process that is either present (or not) in the early stages of the disease process, but also one which

can vary independently in severity in any of several domains throughout the disease. Even though anosognosia may be present early as part of the disease process, with severity typically increasing as the disease progresses, it is noteworthy that the alternative tenet is not supported clinically – that all individuals with Alzheimer’s disease are destined to develop anosognosia as cognitive decline advances.

Although of diagnostic importance and clinical significance, recognition of cognitive dysfunction does not represent the entire clinical picture of import in Alzheimer’s disease. The current *DSM-IV-TR* (2000) states that assigning the appropriate diagnostic code “depends entirely on the presence or absence of a clinically significant behavioral disturbance...” (p. 155). These noncognitive symptoms cover a wide range of possibilities. Cummings and Victoroff (1990) grouped the noncognitive symptoms of DAT into six major categories of neuropsychiatric disturbances. These included delusions, hallucinations, personality alterations, mood changes, disorders of neurovegetative function, and disturbed psychomotor activity. Levy et al. (1996) collapsed symptoms into the three major categories – Psychosis, Agitation, and Depression – in their longitudinal study involving Alzheimer’s disease.

Of these noncognitive symptoms, depression may well have received the most attention in the literature. Two main areas of concern have become apparent. One addresses differentiating depression with cognitive impairment (known as pseudodementia) from dementia due to Alzheimer’s disease. The other main area, and the primary focus of this study, addresses diagnosing the presence of depression that exists comorbidly with DAT. Assessing depression in Alzheimer’s disease presents unique challenges attributable mainly to the difficulty in extricating symptoms of depression

from symptoms associated with and occurring as a part of the Alzheimer's disease process (Haupt, Kurz, & Greifenhagen, 1995; Kaszniak & Christensen, 1994). The symptoms of slowing of motor functioning, forgetfulness, and apathy can be considered representative of both depression and dementia. This overlap and difficulty in separating symptom origin is reflected in a review of 23 studies assessing depression in DAT, which reported its prevalence as varying from 0 to 87% (Wragg & Jeste, 1989). The modal frequency was less variable, with an estimate falling between 40 – 50%. Haupt et al. felt that different symptoms of depression occur at different stages of Alzheimer disease and paired specific symptoms, such as guilt feelings and suicidality, early in the disease course and non-specific symptoms, such as motor activity increasing later as cognitive decline worsened. This led to the suggestion that decreases in motor activity may be more symptomatic of dementia than depression. As difficult as it is to extricate depression from DAT, the problem becomes more complicated and controversial when anosognosia is factored into the picture.

Results of research in this area vary. Some researchers contend a negative correlation exists between anosognosia and the presence of depression, such that the greater one's anosognosia, the less depression is experienced, or vice versa (Seltzer, Vasterling, Hale, & Khurana, 1995; Smith et al., 2000), while others have found no significant correlation between anosognosia and depression (Reed et al., 1993; Verhey, Rozendaal, Ponds, & Jolles, 1993). Other researchers have expressed mixed results. Seltzer, Vasterling, & Buswell (1995) noted depression to be present in a subgroup of Alzheimer's participants without anosognosia, which they suggested may be an "emotional reaction" to having the disease. Yet, they also acknowledged that some individuals with anosognosia had

depression. Interesting, but perplexing, results were also reported in a longitudinal assessment by Starkstein et al. (1997). They found that for individuals with dysthymia an increase in anosognosia was associated with a decrease in depression scores. However, for those with major depression, the opposite was true, an increase in anosognosia was associated with an increase in depression. The researchers speculated that “dysthymia may be a brief emotional response to progressive cognitive decline, whereas major depression may constitute a more pervasive mood disorder” (p.51). When the different domains of anosognosia are examined, the complexity of the issue is more apparent. The cognitive, but not the behavioral domain of anosognosia demonstrated a significant negative correlation with depression (Starkstein et al., 1996).

Assessing Depression in Alzheimer's Disease

To summarize: That depression can occur in DAT is not in question. However, due to overlapping symptoms between dementia and depression, the exact prevalence of depression remains elusive, as does its association with anosognosia. One factor contributing to this confusion may relate to how depression is assessed. Some researchers have used professional interviews and/or caregiver reports to determine whether the individual is depressed (Reed et al., 1993; Seltzer, Vasterling, & Buswell, 1995; Starkstein et al., 1997), although both of these methods run into challenges. While professional interviews can provide a feeling of definitive diagnostic authority, the clinician is still subject to misinterpreting the etiology of the symptoms previously noted to overlap between depression and dementia. The caregiver's assessment of depression has been shown, additionally, to be affected by his/her own level of depression and

perceived caregiver burden (Arguelles, Loewenstein, Eisdorfer, & Arguekkes, 2001).

Self-report measures have also been utilized to assess change in depression (Jha, Tabet, & Orrell, 2001; Seltzer, Vasterling, Hale et al., 1995; Smith, et al., 2000). Although not without controversy, the benefits of this type of instrument are in cost efficiency and ease of administration.

One self-report depression instrument developed specifically for geriatric populations is the Geriatric Depression Scale (GDS; Yesavage et al., 1983) and the GDS-short form (Yesavage, 1988). Yesavage et al. designed the test with the idea in mind that dementia and depression are often confused and therefore sidestepped some of the typical criticism associated with self-reports in this population. Scogin (1994) outlines two unique features of the GDS, its de-emphasis on the somatic concomitants of depression, and its “yes-no” format. Both of these features are beneficial in assessing depression, not only in the elderly, but also in those with dementia. The lack of emphasis on motor functioning as a component of depression reduces the blurred lines between decreases due to mood versus those due to old age. The simple “yes-no” format is more appropriate for those with compromised cognitive functioning. In a preliminary investigation, the GDS showed promise in distinguishing depressives from non-depressives in individuals with cognitive impairment from senile dementia. Research has also documented the validity of the use of the GDS in demented individuals with Mini-Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975) scores greater than or equal to 20 (Bedard et al., 2003), or 15 or greater (McGivney, Mulvihill, & Taylor, 1994). Undoubtedly, these findings have contributed to the popular application of the GDS in clinical and research scenarios when an assessment of depression in an older patient is indicated. The GDS has

also been applied in research specifically investigating the relationship between depression, cognitive decline and anosognosia in Alzheimer's disease (Smith et al., 2000).

Although the GDS is user friendly for researchers, clinicians, and older individuals, limitations still exist by virtue of it being a self-report measure, particularly in a population characterized by memory deficits, anosognosia, or both. Requesting an individual to report on his or her own past feelings and behavior under these circumstances would seem to introduce error greater than what would be typical in a 'normal' population. Alternatives to self-report instruments do exist and can be found in projective techniques, but their application in this population appears virtually nonexistent. In fact, no published research studies could be found investigating depression and anosognosia in Alzheimer's disease that utilized a projective assessment of depression. However, the difficulty in accurate diagnosis of depression in Alzheimer's disease and the shortcomings of current techniques are more recently being noted.

Lyketsos and Lee (2004) unknowingly make the case for projective assessment of depression in Alzheimer's disease. In their recent review of the topic, they noted in elderly patients with Alzheimer's disease, "'masked depression', which is more apparent to observers than sufferers themselves, or non-specific inner feelings, such as the lack of pleasure or not feeling well, may be the primary manifestations of the mood disturbance in older people. [They]... commonly deny having depressed mood, and may report lack of feeling or emotion instead" (p.57). Further described by Gallo & Rabins (1999) as "depression without sadness", one can easily see how this can lead to underdiagnosis and poor recognition of depression in this group. Unfortunately, in their discussion of

Assessment Tools for Depression, Lyketsos and Lee make no mention of the possibilities projective techniques have to offer.

A projective instrument capable of assessing both the mood and neuropsychological functioning of an individual would seem especially appropriate for those with Alzheimer's disease. Such a measure exists in the Rorschach Inkblot Test (Rorschach, 1921/1942) especially when used in conjunction with Exner's (2001) Comprehensive System (CS) scoring procedures.

The research on the Rorschach Inkblot test it is an effective assessment instrument to measure dementia. As early as the 1930's, researchers investigated the use of the Rorschach in brain disorders. Dimmick (1935) applied the Rorschach to the challenge of differentiating among three types of dementia praecox, based on 20 different categories of Rorschach responses. Although this study was moderately successful in distinguishing among types of dementia praecox, the use the Rorschach in applications to diagnose brain disorders did not become popular until a study was published by Piotrowski (1937). Piotrowski is credited with quantifying the application of the Rorschach to organic brain injury by delineating ten signs of abnormality associated with cortical and subcortical cerebral disturbances.

Building on the findings of Piotrowski (1937), Aita, Reitan, & Ruth (1947) investigated the utility of Piotrowski's ten signs, in conjunction with nine signs of their own invention, to determine whether the Rorschach could differentiate sixty traumatic brain-injured individuals from controls. Aita's study confirmed several of Piotrowski's signs – Impotence, Perplexity, Automatic Phrases, Repetition, and Color Naming – in brain injury, as well as adding "unclear definition of responses" and "consideration of

blots as actual objects.” In an investigation of senile dementia, Dorken and Kral (1951) added “limited responses”, “lack of variability in determinants used”, “increase in the percentage of pure form responses”, and “the presence of more animal than human movements, with a noticeable decrease in both”, to the Rorschach differences in the experimental group. Orme (1958) supported many of the findings of Dorken and Kral relating to determinant limitations found in senile dementia, but expanded the application of the Rorschach to examining differences between subjects with senile dementia and depressives. A study by Insua and Loza (1986) added “Energy Level” as another method of separating the Rorschach responses of healthy elderly individuals from those with suspected dementia, along with ten Rorschach variables determined by the Klopfer scoring system.

Perry & Potterat (1997) provide an excellent theoretical and developmental summary documenting the ability of the Rorschach to meet assessment criteria as a neuropsychological instrument. Furthermore, research has also documented typical characteristics found in Rorschach protocols of normal elderly (Ames, Metraux, Rodell, & Walker, 1973; Panek, Wagner, & Kennedy-Zwergel, 1983), and that differences in Rorschach protocols among normal, depressed, and demented elderly exist and can be of assistance in distinguishing among these populations (Insua & Loza, 1986; Orme, 1955, 1958).

In short, the Rorschach has much to offer in assessing individuals with Alzheimer’s disease. At an intrinsic level, the Rorschach provides insight into one’s psychological personality functioning by elucidating how the individual uniquely perceives the world around him or her. Above and beyond this, applying the CS to the Rorschach offers

unique assessment indices that may bring insight into the dynamics of depression in dementia as it relates to anosognosia.

The Comprehensive System of administering and scoring the Rorschach Inkblot test is the system most frequently used in research (Piotrowski, 1996). No doubt its popularity stems from Exner's original mission of integrating aspects of five established systems for the Rorschach, as noted by Exner, for which "empirically defensible data existed or could be established." (Exner, 1993, p. 23) In concert with this approach, Exner emphasized the need to adhere to very specific administration procedures to insure the validity of conclusions being drawn from the Rorschach protocol, a topic which will be separately considered shortly. The Rorschach in conjunction with the Comprehensive System would seem to provide an optimum means of deriving insight into the emotional and neuropsychological functioning of individuals in this category.

Two CS indices of particular interest in relation to this goal are the Depression Index (DEPI) and the Coping Deficit Index (CDI). How they may shed some light on depression and anosognosia may best be understood by reviewing how they were formulated and developed. Exner (1993) explains this process. Based on literature current in 1986, a project was undertaken to develop three DEPI's to coincide with the three types of individuals considered to be diagnosed with depression: those emotionally upset with a strong affective component, those who are more "cognitively pessimistic", and those who presented as being helpless in dealing with the demands of society. Extensive statistical analysis, however, was unable to separate the emotional and cognitive groups, resulting in these two groups being collapsed and called the DEPI. The need to combine the two categories led Exner to conclude that individuals with dysthymia or an affective

disorder will have difficulties in both affect and cognitive areas, although individual variation will be evident. The helpless group stood apart from the other two and was ultimately used to develop the Coping Deficit Index (CDI). Yet, Exner is clear that the CDI is not a second index of depression. Rather, he contends these individuals' inability to function well socially results in symptoms often interpreted as depression, when in fact the depression is a secondary response to the social coping deficit. Exner further explains that this group of people may not actually have more social and interpersonal problems, only that their perception is such and they are acutely aware of and distressed by any social problems that typically may exist.

Applying these concepts to Alzheimer's disease presents some interesting possibilities. For one, it is possible that some of the difficulty in discerning the relationship between depression, dementia, and anosognosia is due both to depression not being accurately assessed or cleanly defined. Perhaps some individuals identified as being depressed more closely match the criteria associated with the CDI. Feeling uncomfortable in social situations and in interactions with others is a frequent concern expressed by individuals with Alzheimer's disease, particularly those who are aware of the disease and its effects on them (i.e., not anosognosic). These individuals may also be more likely to feel helpless, and such feelings may contribute secondarily to depression as suggested by Exner (1993). This pattern may account for the lack of consistency in previous research findings to test the intuitive presumption that those with knowledge of their deficit would be more depressed than those without insight. With regard to depression, if as Exner demonstrated the affective and cognitive aspects are inseparable, perhaps a measure more sensitive to the multi-faceted structure of depression would

better identify those experiencing it, whether or not the individual overtly recognizes and/or can label his/her feelings as such. Application of the Rorschach with the CS to individuals with Alzheimer's disease may provide a new perspective into how depression, anosognosia, and Alzheimer's disease interface. But, the Rorschach also has the ability to assess, in greater depth, aspects of cognitive function that Exner suggested were inseparable from affective components.

The Rorschach scored by the Comprehensive System also provides insight into the individual's cognitive functioning through three clusters of variables addressing "information processing", "cognitive mediation", and "ideation" (Exner, 1993). In combination, these three groupings of variables comprise the Cognitive Triad in CS scoring. Information processing deals with how individuals pay attention to the environment and take information in, while cognitive mediation examines how the information is perceived and translated. Ideation considers how individuals conceptualize and think about the information they perceive (Exner, 1993; Weiner, 1998). Analysis of these three cognitive clusters may help identify more precisely the connection between cognitive decline and depression in Alzheimer's disease.

The emotional complexity of depression can also be further evaluated by exploring a cluster of variables related to affective functioning collectively grouped under Affect. The bar for healthy functioning is to deal with affect in moderation and, according to Weiner (2003), "consists of maintaining an adaptive balance between emotional and ideational channels of expression...and between modest and strained efforts to process affective experience in a positive manner" (p.139). Affect also may be viewed as adequate and appropriate flexibility between feeling and thinking in response to the

internal and external environment of the individual. In affective health, an individual has the ability to respond emotionally with feelings when appropriate without being overwhelmed by the experience of those feelings. By the same token, thought and reason can be employed in an appropriate manner, without the individual being emotionally constricted. By separately examining the cognitive and emotional components of depression on the basis of the Rorschach responses, a more comprehensive investigation of the neuropsychological functioning of individuals with Alzheimer's disease can be undertaken, thereby allowing for a more thorough exploration of the relationship among depression, anosognosia and cognitive decline.

Despite the integrative information the Rorschach provides regarding the cognitive and emotional functioning of an individual, another piece needs to be included to consider more completely those factors contributing to the interplay of depression and anosognosia in the cognitive dysfunction associated with Alzheimer's disease – that of the individual's premorbid psychological functioning. Research has tangentially addressed a component of this issue as the variability in depression and anosognosia relationship became apparent. Verhey, Rosendaal, Ponds, & Jolles (1993) were among the first researchers to suggest that depression in Alzheimer's disease is not be a unidimensional concept, noting anosognosia was only correlated with depression when a Hamilton Depression subscale score of 'psychic depression' was considered, but not as a major depressive syndrome.

Seltezer , Vasterling and Bushwell (1995) developed this theme further, suggesting differing results could be attributed to whether major depression or a depressed mood was used as criterion. Finding some Alzheimer's individuals who were depressed but

without disease insight, they concluded, “An emotional reaction to the disease does not account for all depressive phenomena in Alzheimer-type dementia (p. 83). Starkstein et al. (1997) provided further clarification in a longitudinal study that reported a directional difference in the correlation between anosognosia and depression based on whether the initial diagnosis was dysthymia or major depression, and established according to a structured interview. For dysthymic individuals, increased anosognosia scores corresponded to lower depression scores, whereas the opposite trend was noted for those with major depression.

Aside from premorbid status of depression, the dynamics of an individual’s psychological functioning do not begin when they are diagnosed with Alzheimer’s disease, or any disease, a point which is frequently over looked and under researched in the literature. It seems plausible, and research supports the contention, that an individual with an established psychological dysfunction will respond differently in response to the challenges imposed by Alzheimer’s disease. Meins, Frey, and Thiesemann (1998) found individuals with a premorbid trait of low frustration tolerance also demonstrated depression when they developed Alzheimer’s disease.

Intuition alone would suggest that individuals come to the research scenario, and to disease onset itself, with personality dynamics and affective styles that have long been in place. Some may have been depressed on occasion in their lives, some may have been depressed most of their lives, and some may have never been depressed at all. Although the same would apply for any psychological disorder and any research investigation, when considering current depression in light of cognitive decline, the ramifications of past psychological functioning may play a larger role in this case. An entrenched

depression that has been defended against over a lifetime by developing outward behavioral manifestations of passivity, irritability, or even elation, and experienced as ego syntonic is not likely to be identified as problematic in a self-report measure, potentially confounding the relationship between depression and anosognosia in Alzheimer's Disease. However, a projective measure such as the Rorschach can circumvent an outward display by addressing the underlying emotional experience of the individual, while at the same time assessing cognitive functioning. A history of psychological dysfunction may also affect whether the individual responds to the stress of disease diagnosis with reactive "helplessness" as represented in the CDI score, or a more persistent fall into "depression", encompassed in the DEPI score.

The Rorschach in Alzheimer's Disease: Special Considerations

The Rorschach Inkblot test is integral to this research investigation, since it constitutes the major instrument used in the methodology, not only in terms of information, but also in time spent sitting and interacting with the individual participant. Certain modifications were necessary in application of the Rorschach effectively to this population. Because of this, standard Rorschach procedures and potential effects of deviation from this standard as presented in the literature need to be examined. The actual modifications deemed necessary in this study will be discussed later.

Standardized instructions are an integral component in the administration of the Rorschach. Exner emphasized the need to adhere to very specific administration procedures to insure the validity of conclusions being drawn from the Rorschach protocol. Although few would argue with the veracity of these tenets, strict adherence to

them prohibits or limits the application of the Comprehensive System in certain instances (e.g., where pure allegiance to the rules mutually excludes obtaining a “scorable” protocol.) A scorable protocol is one with at least 14 responses that tap into the psychological dynamics of the individual being assessed. One population for which this limitation has been established is the elderly, especially the “oldest old.” Previous research in which the Rorschach was administered to Centenarians (Church, 2000), individuals 100 years or older, resulted in protocols too brief to permit scoring with the Comprehensive System. In lieu of this, the dynamics of psychological functioning could only be surmised from content interpretation. Although informative and of interest in itself, the specific formulations and insight offered through the Comprehensive System were definitely missed.

Alzheimer’s disease constitutes one of the major medical pathologies affecting the physical, cognitive, and emotional health of the elderly population. Consequently, unique challenges are presented in administering the Rorschach in accordance with Comprehensive System procedures. Preliminary applications of the Rorschach to this population indicated variation in standardized administration would be necessary to obtain protocols of sufficient length and depth to permit scoring with the CS thus leading to questions of how this may ultimately affect the scoring of the protocols.

A review of the literature revealed only a few empirical studies that examined the effect of variation in administration procedures with the Rorschach. Mention was made of Exner’s research comparing five Rorschach scoring systems, the outgrowth of which was the formulation of one system designed to maximize the best of all, the Comprehensive System (Exner, 1993). One of Exner’s (1993) main conclusions was that

“intersystem differences in procedures did produce five relatively different kinds of records” (p.23). This of course raises concerns about any modifications introduced to standard Comprehensive System procedures.

More contemporary studies, however, have compared alternative administration procedures to Exner’s Comprehensive System to assess effects on the protocols obtained addressing some of these concerns. A recent study by Hartmann and Vanem (2003) compared the effects of two instructional methods – the standard, but shorter Comprehensive System’s “What might this be?” to a longer, more elaborate version typically used in Norway that goes as follows:

I am going to show you some pictures. There are ten in all, and none of them resemble anything in particular. They are made by putting ink on a piece of paper, folding it, and pressing the sides together, so they become figures. Now I would like you to tell me what they look like, remind you of, or make you think of. There are no right or wrong answers. Different people see different things, and I want to know what you think they might resemble. Tell me everything you see in each picture, and when you have finished with a card you may put it down (p.133).

The researchers expressed concern that the shorter instructions, by the very nature of their brevity and ambiguity, introduced a greater potential for variation in administration procedures due to increased questions that must be fielded by the examiners. Their results indicated that neither instructional method resulted in briefer protocols, although the shorter instructions did cause a significantly greater number of questions to be asked about the test itself. More importantly, with regard to the present study, the investigators concluded that the longer instructions did not produce significant differences in the resulting test profiles that examined 17 Comprehensive System variables. The Rorschach instructions provided in this investigation with Alzheimer’s disease was slightly longer

than the standard CS instructions and were more in line with the longer instructions cited in Hartmann and Vanem's study.

Baldwin (2000) compared administration differences between Exner's and Rapaport-Schafer's system. Differences in these systems revolve around the Inquiry phase, with Rapaport's inquiry being made after the free association of each card and without the card present. In Baldwin's investigation, four combinations varying timing of inquiry and card presentation were compared. His lack of significant differences among these conditions led to his postulating "It is possible that standardization of Rorschach administration is less of an empirically quantitative concern than most Rorschach system authors claim" (p. 44).

Although a paucity of research exists using the Rorschach with Alzheimer's individuals, one notable case study by Perry, Potterat, Kaplan, & Jeste (1996) incorporated the procedure of inquiring after each card, in line with one of the conditions tested by Baldwin. This was necessary due to the short-term memory deficit that hallmarks the disease process. Delaying Inquiry increases the chances of the individual forgetting the percept, even when read back to him or her, and negates any remembrance or explanation of what or why "the patient saw what they saw."

The foregoing discussion highlights the complexity of anosognosia, depression, cognition, and affective functioning in Alzheimer's disease, as well as techniques available to assess and obtain data in each area. Armed with these quantitative bits of information, statistical procedures can analyze, in objective terms, the information we seek to "know" regarding what is going on in the disease process of Alzheimer's. However, as practicing clinicians, our goal is not completely met through the

examination of data, projective or otherwise. To feel and see the world as does the individual we are concerned about, another perspective needs to be considered, the subjective experience of the individual with Alzheimer's disease.

Reality is a Subjective Experience: The Phenomenological Approach

Researchers have tried different ways to capture the experiential world of someone with Alzheimer's disease. One approach uses as its basis the quality of life (QOL) assessment. Brod, Stewart, & Sands (2000) distinguishes this approach from the previous methods discussed in that it is "not just psychological well-being...it is the subjective interpretation and evaluation of the individual's experience in each of many important areas..." (p. 11). However, QOL instruments are still subjectively limited in that the quality of the individual's life may be assessed by those 'outside' of the experiential world, such as caregivers or professionals (Brod, Stewart, Sands, & Walton, 1999; Rabins, Kasper, Kleinman, Black, & Patrick, 1999). Siberfeld et al. (2002) noted the insufficiency in this approach and suggested including the perspective of the individual with dementia.

Similar to quality of life instruments, the phenomenological approach also focuses on the experience of the individual with dementia, but solely from his or her perspective. This approach to assessing DAT has only recently begun to be considered as the direction of research has shifted from the concerns of caregivers to the concerns of the individual with dementia (Whitlatch, 2001). A forerunner in this area was Tom Kitwood (1997) who wrote the following:

During the great reappraisal of dementia that has been occurring in recent years, one of the most encouraging features is that at last the questions of subjectivity and intersubjectivity have been put on the agenda for inquiry...The knowledge that has been gained...has the potential to enrich our care practice greatly, and will help open up new therapeutic possibilities (p.13).

Kitwood (1997) emphasized that interpersonal differences apply to us all, including individuals with dementia. Because of this, the experience of dementia will be unique for each person, as well as varying in accordance with whom the individual is engaged. This is the intersubjectivity component referenced in Kitwood's commentary above. Intersubjectivity applies to all interpersonal interactions involving two people and, therefore, any assessments as well (Finn, 2002). According to Kitwood, the same principles are applicable to and operate in dementia. Kitwood (1997) outlines six access routes to the experience of dementia, but one – listening to someone in an interview or group setting – offers the greatest potential to touch most closely on the heart of what the individual with Alzheimer's disease is experiencing.

Sabat (2001) in his book *The Experience of Alzheimer's Disease* applies Kitwood's (1997) last suggestion of interviewing individuals with dementia, specifically related to Alzheimer's disease. By sharing detailed scripts of narratives with individuals with DAT, Sabat helps the reader begin to know *how* to understand the often-awkward spoken language of DAT. This approach is quite different from just saying that one should ask questions and listen to answers in DAT, for things like the effects of paraphasia, word loss, and difficulty in holding thoughts make communication a challenge for both parties involved. Techniques to lessen these effects are provided by Sabat. Through several case studies, Sabat also allows the reader to see how individual personalities still emerge

through the fog of DAT. The real thrust of Sabat's message, however, is that individuals with DAT are unique human beings striving to maintain self-hood and self-esteem. Much, if not all, of an individual's behavior with DAT is purposeful if considered from the perspective of the cognitively restricted and often jumbled mind associated with DAT. Sabat (2002) also shed a different light on the issue of anosognosia in Alzheimer's disease. He notes: "If we 'locate' the problem of lack of awareness or insight as belonging to the AD sufferer much in the way that fever belongs to the person diagnosed with malaria, we may be overlooking an important social-psychological aspect of the afflicted person's life" (p. 281). According to Sabat (2002), assuming lack of awareness being due only to organic causes risks not fully comprehending the cause of the observed behavior of the individual. He outlines potential misinterpreted or missed causes as stemming from "(a) the person's reaction to the disease's effects, (b) the behavior and reaction of others; and (c) the reactions of the person with AD to the behavior of others in his or her social world" (p.281).

A structured systematic methodology for investigating the phenomenological perspective in research can be achieved through use of an interpretative research group for thematizing interview narratives. Thomas and Pollio (2002) explain that in this process "thematic interpretations are continuously challenged until group members agree that an interpretation is supported by text" (p.34). Having themes supported by the words in the interview text is vital to validity of the thematic interpretative process in that it minimizes potential subjective influence of the researchers. As further described by Thomas and Pollio, after several transcripts are covered in depth by the group, the primary researcher thematizes the remaining interview transcripts independently

considering “not only specific words, but the meaning of those words” (p.37) in the context of the entire interview in an effort to capture the meaning conveyed by the individual. The process continues with the primary researcher independently examining the transcripts for global themes common across the interview transcripts. At this point the primary researcher once again returns to the interpretative research group for assistance in determining a final thematic structure that may result in the formulation of a diagram visually integrating the themes and their relationship to each other. By virtue of interviewing individuals with Alzheimer’s disease and applying this phenomenological research methodology, an additional perspective in Alzheimer’s research is obtainable – a view of the world uniquely seen through the lens of individual experiencing the disease.

To summarize: for decades research has struggled to define and understand the medical, cognitive, mood, and behavioral changes that occur in conjunction with Alzheimer’s disease. Despite the best efforts of multiple researchers and clinicians, our insight into the effects of the disease on the individual is limited and inconclusive. Many questions remained unanswered. Some addressed in the preceding discussion – determining the presence and extent of depression, assessing its relationship to disease insight and past psychological history, and the interplay of cognitions and mood → highlight areas where more research would be beneficial.

Purpose of Investigation

The purpose of this investigation is to examine the relationship of depression and social coping in Alzheimer’s disease obtained through a projective assessment instrument and compare these results to those obtained with a self-report instrument. The interplay of

current depression with anosognosia and past psychiatric history will also be considered. Also, through the Rorschach and the Exner's Comprehensive System scoring, the cognitive components contributing to depression in Alzheimer's disease – information processing, cognitive mediation, and ideation – as well as affective functioning, will be examined to determine the relationship between declining cognitive function, anosognosia, and depression in Alzheimer's disease. Finally, utilizing the interview communication techniques suggested by Sabat, the experiential world of individuals with Alzheimer's disease will be incorporated with quantitative data to gain a better understanding of the totality of experience for individuals with Alzheimer's disease.

Questions, Concerns, & Hypotheses

1. What is the relationship between self-report measures and projective measures of depression and social coping in Alzheimer's disease? The Geriatric Depression Scale, a self-report measure, will be compared to projective measures, the Depression Index (DEPI) and the Coping Deficit Index (CDI) obtained from the Rorschach Inkblot test. Results from a modified version of the GDS from the caregiver's perspective will also be considered to determine its relationship to depression assessments provided by the individual. Additionally, the relationship of projective and self-report measures to anosognosia will be considered.
2. What effect does anosognosia and past psychiatric history have on projective measures of depression (DEPI) and social coping (CDI)? Is there a significant difference in mean DEPI or CDI scores based on the status of these two variables? If an individual has anosognosia and a positive history of psychiatric treatment, it

is hypothesized that he/she will be more likely to have depression, assessed by the projective measure, while coping ability will be less likely to be affected. It is hypothesized that if the individual has anosognosia and no history of prior psychological treatment for depression by report, he/she will be more likely to exhibit less depression projectively and coping ability will also be minimally affected. If an individual does not have anosognosia and does have a positive history of psychological treatment for depression, then he or she will be more likely to have greater depression measured by projective assessment and coping ability will also be affected adversely. If an individual does not have anosognosia and no history of prior psychological treatment, results of projective assessment will vary, but deficits in coping ability will be evident. A hypothetical schema is presented in Figure A-1¹.

3. What is the relationship of cognitive variables, affective functioning, and social coping with depression? Based on the affective and cognitive components constituting depression as recognized by Exner (1993; 2003), it is hypothesized that each of the cognitive variables and Affect will account for a significant amount of variation in the DEPI score. Further, based on the results of a preliminary study (Oglesby, Sims, Handler, & Dougherty, 2005), it is hypothesized that the cognitive variables – information processing, cognitive mediation, and ideation – will also demonstrate a negative correlation with depression. Potential secondary contributions to depression due to deficits in social coping will be assessed through the CDI.

¹ All Figures are located in the Appendix

4. Do anosognosia status, past psychiatric history, and Rorschach indices determined to account for a significant amount of the variation of depression predict depression in an individual with Alzheimer's disease?
5. What is the experience of memory loss and/or declining cognitive functioning like from the individual's perspective? How is this experience affected by the insight the individual has regarding his or her deficit?

CHAPTER 2

METHODOLOGY

Measures

Cole Anosognosia Scale for Alzheimer's Disease (CASAD)

These questionnaires are used to assess anosognosia. Each contains 43 statements followed by a Likert scale rating of 'Never', 'Almost Never', 'Sometimes', 'Almost Always', and 'Always'. The participant is given the CASAD-P and is instructed to mark the answer that best describes the statement as it applies to him or her. The caregiver is given the CASAD-C and instructed to mark the answer that best describes the participant's behavior. The 43 items encompasses scores on three domains – Executive Functioning, Memory, and Behavior – as well as providing an overall score. Scores for each item are derived by obtaining the absolute value of a patient's response minus the caregiver's response, and ranges between 0 and 4. Domain scores are obtained by summing the score for each question in the domain and dividing by the total number of questions in that domain. The Total Score is obtained by averaging the domain scores. Anosognosia can be considered a continuous or a dichotomous variable. When dichotomous, it is considered present for any domain or for the overall score when it is greater than or equal to 1.

Geriatric Depression Scale (GDS)

The GDS is a self-report questionnaire consisting of 30 statements relating to feelings and behaviors associated with depression to which the participant circles "Yes" or "No." The test, as developed by Yesavage et al., (1983) will be designated as GDS Self-Report (GDS-SR) to indicate that it was answered by the participant. Yesavage established test-

retest reliability at .85 ($p < .001$) and internal consistency at .94 as measured by Chronbach's alpha. Convergent validity with the Hamilton Depression Scale was established at .83 ($p < .001$). Research by Bedard et al. (2003) indicated a positive response set bias may occur as cognitive impairment measured by the Mini- Mental State Exam progressed leading to their suggested cut-off score of 20 on this cognitive screening tool. A modified version of this test was created by the examiner, which changed the wording to permit the caregiver to also express his/her opinion on the emotional status of the participant. This version is designated as GDS Caregiver Report (GDS-CR).

Mini Mental State Exam (MMSE)

The MMSE is a brief cognitive screening developed by Folstein et al. (1975) consisting of items that assess orientation, memory, attention, executive function and visuospatial ability. A total of 30 points is possible. The exam provides a general indicator of the cognitive level of functioning of the individual. At test development, test-retest reliability of .89 and concurrent validity of .78 with Weschler Verbal IQ were established.

Rorschach Inkblot Test

Developed by Hermann Rorschach in the late 1920's, this assessment procedure consists of ten cards with inkblots on them to which the individual responds by telling the examiner what it might be. Exner's Comprehensive Scoring system dictates specific administration and scoring procedures; the details of this scoring procedure can be found in Exner (2001). The Rorschach, with the CS, has been the focus of numerous reliability and validity studies. Weiner (2003) summarizes the test-retest reliability of all variables

in the CS as being in excess of .75 in adult populations. The complexity and diverse information provided by the CS makes determining a single validity coefficient challenging. For this investigation, validity is accepted on the basis of the excellent review of research on Rorschach validity provided by Weiner (2003).

CS scoring was done in adherence to the guidelines provided by Exner (2001) and Viglione (2004). Although close application to scoring principles was possible in the protocols obtained, administration procedures required some modification from the standardized format proposed by Exner so that protocols of sufficient length and depth to permit CS scoring could be gathered.

The modifications deemed helpful are as follows.

- 1) A more lengthy explanation was needed prior to beginning Rorschach administration. The instructions given were: *I am going to show you ten cards with inkblots on them, one at a time. I would like you to tell me what they look like, remind you of, or make you think of. There are no right or wrong answers. People see different things, and I want to know what you think they might be.* Then, while handing them Card I, the standard question “*What might this be?*” was asked, followed by “*Most people see more than one thing*” if only one response was given.
- 2) Inquiring after each card’s free association, as opposed to Inquiry after all cards, was also done. In many cases, Inquiry after each response, not just each card, was needed to provide a clearer understanding of what was being used in each percept.

- 3) More frequent and more repetitive questions were necessary in the Inquiry phase of administration. Often the metaphor of “looking at clouds” or “using one’s imagination” had to be employed. A more conversational language incorporating encouragement, reassurance, and increased time for responding was found to be extremely helpful as well.
- 4) Lastly, if the behavior had not been demonstrated previously, and percepts were scant, the individual would be told the card could be turned if desired.

Interpretive reports for each protocol were obtained from the Rorschach Interpretive Assistance Program (RIAP; Exner & Weiner, 2003). The RIAP provides the projective measure of depression score in the DEPI score – a composite variable that is an ordinal scale, ranging from 0 to 7, with higher numbers indicating more severe depression. The social coping ability, the CDI score, is also an ordinal scale and ranges from 0 to 5, with higher numbers indicating greater concern regarding social interactions with others. The indices of information processing, cognitive mediation, ideation, affective functioning are ordinal scales ranging from 0 to 8, again with higher numbers being indicative of greater pathology or dysfunction. Instead of being directly extracted from the RIAP, these indices were derived by the investigator by counting the number of indices in each variable cluster that were positive for psychological dysfunctioning, as guided by Exner (1993, 2003) and Weiner (1998, 2003). The variables and the values for each index indicating pathology are shown in Figure A-2.

Methods

The study was conducted through and with the approval of the University of Tennessee (UT) Clinical Psychology Department, in cooperation with the Cole Neuroscience Center at the University of Tennessee Medical Center (UTMC). Standards for Research with Human Subjects in accordance with both UT and UTMC were followed.

Participants

Participants were 42 individuals with the diagnosis of Probable Alzheimer's Disease, as made by John Dougherty, Jr., MD, in accordance with NINCDS-ADRDA diagnostic criteria (McKhann, et al., 1984) after completion of neurological assessment. The primary inclusion criterion was having the appropriate diagnosis. However, each participant must also have possessed sufficient mental capacity to understand and consent to voluntarily participate in the study. There were no exclusions due to age, race, or ethnicity.

Of the 42 participants, 26 were female and 16 were male. Age range was 51 to 87 years, with the average age of 74.7 years. MMSE scores ranged from 15 to 30, with an average score across all participants of 24.5.

Procedure

After having been identified as meeting inclusion criteria, each subject and his or her caregiver were invited to participate in the investigation. For those agreeing, informed consent and releases for access to medical information were signed. These forms were approved by both UT Main campus and UT Hospital Institutional Review Boards and were obtained from both the individual with Alzheimer's disease (the participant) and the

participating caregiver (the caregiver). Both participant and caregiver were given the 43-item anosognosia questionnaire to complete with the examiner present to answer any questions and to make sure the procedure was not disturbing to the participant. If not previously accomplished as part of the neurological assessment, the Mini Mental State Exam was administered to the participant.

Typically, a second appointment time was arranged to complete the rest of the testing, although on a few occasions the participant and caregiver requested to do all testing in one session. Return appointments usually varied from two to six weeks from the initial appointment. On the return appointment, the patient and the caregiver each completed the appropriate Geriatric Depression Scale. The caregiver was allowed to leave while the participant remained with the experimenter for the Rorschach administration and personal interview. Responses were audio-taped with verbatim transcription accomplished at a later date, after which time, they were destroyed.

In the personal interview, each participant was initially asked if he or she could remember a *specific* incident when memory had presented a problem in his or her life. If recollection of such was not possible after several attempts, the participant was asked to share with the investigator any thoughts they may have on what the process of “having their memory checked out” has been like for them. Interviews were also recorded for later transcription. After completion of all testing, the participant was reunited with the caregiver.

At a separate time of convenience, each participant’s chart was reviewed for basic demographic information, particularly confirmation of age. Information on the participant’s previous psychological functioning was gathered from the chart by noting

the answer to the question “Have you ever had psychological problems (nervousness, taken nerve pills, nervous breakdown, depression)? This question had been asked as part of the initial medical information questionnaire filled out by the participant with the assistance of the caregiver and was reviewed with the patient by the physician (JD) in the initial medical evaluation.

CHAPTER 3

STATISTICAL ANALYSIS

Quantitative Analyses

All statistical analyses were performed with the assistance of SPSS Base 10.0 and 13.0 statistical programs.

The CS is comprised of numerous variables that require the judgment of each scorer. As suggested by Weiner (1991), scoring reliability was achieved by having the primary investigator score all protocols, with a second rater scoring 21 randomly selected protocols. Discrepancies on the 21 jointly scored protocols were resolved by collaborative agreement. Due to the unusual nature of the protocols obtained from individuals with Alzheimer's disease and the lack of availability of similar protocols, five of these protocols were used for scoring practice for the two raters. Reliability was established on the remaining 16 jointly scored protocols, with kappa scores calculated for fourteen groupings of Rorschach variables – Location, Developmental Quality, Form, Form Quality, Movement, Color, Achromatic Color, Diffuse Shading, Vista, Texture, Reflection, Form Dimension, Pairs, and Z-score. Since arriving at a quantitative kappa score for Special Scores and Content would be difficult in light of all the potential options, scores from both raters were included for all protocols on these two variables.

Prior to addressing the first question concerning the correlation between projective and self-report measures, the Shapiro-Wilkes test of normality was applied to the variables GDS-SR, GDS-CR, the DEPI, the CDI, and anosognosia. The desirable statistical value for Shapiro-Wilkes of approximately .9 was considered in conjunction with visual inspection of histograms to determine normality. Using this procedure, the

hypothesis of normality for the GDS-SR was rejected, while the results from the other variables – DEPI, CDI, anosognosia, and GDS-CR – were considered to represent a normal distribution. Therefore, to assess the relationship among the measures of depression and the CDI, the nonparametric two-tailed Spearman's correlation coefficient was utilized. An alpha level of .05 was set for statistical significance. In a separate analysis, the GDS-SR and the DEPI were assessed for their relationship with anosognosia, again utilizing Spearman's rho and two-tailed significance.

The effect anosognosia and past psychiatric history have on projective measures of depression (DEPI) and coping ability (CDI) was next examined. Since the normality for DEPI and CDI was established, a one-way analysis of covariance (ANCOVA) was utilized, controlling for general cognitive ability with the MMSE score. For this analysis, anosognosia was considered as a dichotomous variable, with a score greater than or equal to one implying the presence of anosognosia. Past psychiatric history was also dichotomous and deemed positive if this question was answered affirmatively on the initial questionnaire filled out for the physician. These independent variables were analyzed in separate ANCOVAs to ascertain if a significant difference in the mean DEPI or CDI scores existed due to anosognosia or psychiatric history.

The relationship of cognitive and affective functioning with projectively assessed depression was assessed with a stepwise linear regression. Data for the variables of the cognitive triad components (information processing, cognitive mediation, ideation) Affect, and CDI were regressed on DEPI scores obtained from the Rorschach. Descriptive statistics were also run for variables comprising each of the components of the Cognitive Triad. A separate multiple regression analysis was also used to assess

whether significant Rorschach variables from the previous regression, anosognosia status, and past psychiatric history predicted depression. In this analysis, anosognosia was a continuous variable, as were all others, except past psychiatric history which remained dichotomous.

Qualitative Analyses

The experience of what memory loss is like from the individual's perspective was assessed qualitatively by exploring the narratives given in response to the interview question. The process outlined by Thomas and Pollio (2002) and discussed earlier, was used as a general guide. However, the length and quality of the interviews were not sufficient to claim adherence to the specific requirements necessary as outlined by these researchers. Reasons for this will be addressed later under study limitations.

In this study, eleven interview transcripts with Alzheimer's individuals were considered, three of which were brought before the University of Tennessee Phenomenological Research Group to be thematized. For practice and to improve technique, the primary researcher also assisted in thematizing the interviews of other researchers dealing with non-Alzheimer's disease topics. The remaining eight transcripts were thematized independently by the primary researcher, for individual and global themes, in the systematic manner proposed by Thomas and Pollio (2002). Major themes were highlighted in each individual transcript and considered for those global themes that might be prevalent across individuals with Alzheimer's disease. Interviews of the remaining participants were also considered, but in a more informal manner due to the brevity and/or difficulty the participants had in responding to the interview questions.

In a case study format, themes and/or affective tone noted in select individual protocols were incorporated with the quantitative data provided by those individuals in an effort to more fully understand and appreciate the world view of an individual with Alzheimer's disease. The individual in one case study demonstrated poor insight, which permitted a more thorough understanding of the consequences of anosognosia.

CHAPTER 4

RESULTS

Scoring Reliability

Kappa scores for the fourteen grouping of Rorschach variables – Location, Developmental Quality, Form, Form Quality, Movement, Color, Achromatic Color, Diffuse Shading, Vista, Texture, Reflection, Form Dimension, Pairs, and Z-score – ranged from .54 (Vista) to .93 (Location), with an average kappa score across all variables of .76. Kappa values of .40 to .75 indicate fair to good agreement beyond chance between raters, and values greater than .75 indicating excellent agreement beyond chance (SPSS 10.0, 1999, p. 82). Accordingly, kappa values for each individual grouping of variables well exceeded the minimal .40 level to qualify as good agreement beyond chance. In fact, for seven variable groupings – one-half of the total assessed – kappa values were in the excellent range of .75 or greater. This is reflected in the overall kappa value of .76 and supports excellent overall reliability in scoring of the Rorschach protocols. The Rorschach variables assessed and their corresponding kappa values are found in Table A-1².

Quantitative Findings

The descriptive statistics of all variables were inspected. No extreme figures were present suggesting the possibility of data entry errors. However, the cognitive variables of Ideation and Information Processing were noted to be somewhat restricted in range, the effects of which will be considered later. Histograms and normality plots also were

² All Tables are located in the Appendix.

examined for the presence of outliers that could potentially skew the data, but none were noticed of great enough magnitude to warrant removal from the data set.

To examine the relationship between projective and self-report measures of depression, scatterplots were inspected and Spearman's correlation coefficients were run in a correlation matrix consisting of DEPI, CDI, GDS-SR, and GDS-CR. These four variables resulted in six correlation coefficients of interest, which can be found in Table A-2. Initial inspection of the table presented a significant correlation coefficient between the CDI and GDS-SR ($\rho = -.34, p = .029$) and between GDS-SR and GDS-CR ($\rho = .46, p = .002$). However, after applying the Bonferroni correction for multiple tests, only the relationship between GDS-SR and GDS-CR remained significant. The lack of significant correlation in this analysis is in line with previous research showing differences in results between projective and self-report measures and suggests that dissimilar aspects of an individual's functioning are being assessed. To examine the meaning of this relationship, a post-hoc analysis was done. The use of the Wilcoxon rank test demonstrated a significant difference between the mean rank of GDS-SR and GDS-CR variables ($z = -4.79, p = .000$).

A separate correlation assessing the relationship among anosognosia, depression, and CDI was done (Table A-3). Neither the DEPI and the CDI demonstrated significant correlations with anosognosia, again suggesting that projective instruments may be tapping different dynamics than those of self-report measures.

Analysis of covariance procedures addressed the question of what effect anosognosia and past psychiatric history have on the DEPI and the CDI, while controlling for general cognitive ability. As noted previously, anosognosia was a dichotomous variable in this

analysis. The dependent variables, DEPI and CDI, were assessed in different ANCOVAs which are located in Tables A-4 through A-7. Contrary to the hypothesized relationship, neither procedure demonstrated significant model, main, or interaction effects. Using SPSS 13.0, diagnostics on the data of both dependent variables were scrutinized to assure that no assumptions basic to analysis of variance procedures were violated.

The relationship of cognitive triad variables, affective functioning, and social coping with projectively measured depression was examined with multiple regression. A stepwise linear regression model was utilized with information processing, cognitive mediation, ideation, Affect, and CDI regressed on DEPI. The probability of F-value was set at .05 for entry and .10 for removal from the model. This resulted in a significant model with Affect, CDI, and cognitive mediation accounting for 30%, 14%, and 7% respectively, of the variation of DEPI (Table A-8 & Table A-9). These findings support the initial hypothesized relationship for Affect, CDI, and depression.

For the cognitive triad variables, Cognitive Mediation demonstrated a significant contribution to depression as predicted. However, contrary to prediction, Ideation and Information Processing did not. The analysis of these data can be seen in Table A-8. Combined, the three variables – Affect, CDI, and Cognitive Mediation – accounted for approximately 50% of the variation in depression, with this model being highly significant ($p = .000$). Initially, it was hypothesized that each of cognitive triad variables would be inversely correlation with depression; however, this was not supported by the data analysis. Instead, only Cognitive Mediation accounted for a significant amount of the variation in depression, and its correlation with depression was positive. This

suggested that depression increased as Cognitive Mediation got worse (indicated statistically as an increased number of pathological indices in Cognitive Mediation).

A post-hoc analysis regressing the same variables on GDS-SR was accomplished to consider if and how these variables may relate differently to a self-report measure of depression. In this analysis (Table A-10), only Affect significantly accounted for a small (approximately 10%) of the variation of depression assessed by the GDS.

Descriptive statistics for Rorschach variables that comprise each of the Cognitive Triad components – Ideation, Cognitive Mediation, and Information Processing – are provided in the Appendix (Table A-11, A-12, and A-13). Direct comparison of these means to those of a healthy elderly population is somewhat of a challenge due to limitations in published norms for this age group. Exner's norms for healthy adults were based on a population that ranged in age from 19 to 70 years, with a mean age of 32.36 years (Exner, 1993). This differs substantially from the age range in this study of 51 to 87 years with a mean of 74.7 years. However, this discrepancy may not be as meaningful as once considered.

Support exists in the literature for Rorschach normative values of elderly not being substantially different from younger healthy adults. As summarized by Klopfer (1974), early studies had suggested older people have a low R (14 – 15), few M, FM slightly higher, increased F%, few Popular responses, and increased W, with a commensurate decrease in D as compared to younger individuals. Klopfer noted that a different study (Prados and Fried, 1947, as cited in Klopfer, 1974) updated these findings and reported greater R and W, lower F%, and increased Color. The discrepancy centered around correcting potential methodological issues of the earlier studies by assessing 'normal'

elderly individuals who lived in the community as opposed to an institution. A more recent study by Gross, Newton, and Brooks (1990), which utilized the CS scoring system, found Rorschach variables were not significantly influenced by age or IQ, except for Ma which was positively correlated with IQ. In fact, inability to categorize Rorschach responses by age group alone was the basis for an alternative classification system created by Ames et al. (1973). These researchers classified individuals in their 70's, 80's, and 90's as 'normal', 'presenile', and 'senile' according to detrimental findings in Rorschach protocols, since grouping by age yielded such weak results. On the basis of the findings reported in these studies, it seems that differences in Rorschach responses often attributable to aging may not be due solely to age increases, and make a case for using Exner's norms for a healthy adult population as a basis for comparison of the Alzheimer's group means..

In comparison to Exner's published normative data for healthy adults, substantial differences in the means of some of the variables associated with the cognitive triad in the Alzheimer's group are apparent. Detailed quantitative comparisons can be found in Table A-14, so only general comments will be addressed here. First, in accordance with Klopfer's report above, minimal differences in FM were noted between the two groups, R was greater than the 14-15 of early reports, and W was only marginally decreased, with the commensurate increase being in Dd as opposed to D as reported earlier. In short, even though the means in this study are from a clinical population, they are more in line with the updated findings cited by Klopfer, at least for these variables. This may well be due to the overwhelming majority of participants in this study being community dwelling, as were the individuals in the updated values. Consequently, differences found

between the two groups are more likely to be the result of the disease process rather than living environment.

Some of the notable cognitive differences found in Alzheimer's disease group involved decreases in X+% with corresponding increases in X-% and Xu% - all part of Cognitive Mediation. Undoubtedly, the most obvious difference between the two sets of means lies in the very high WSum6 score of 32.02 found in the Alzheimer's group compared to 3.28 in the healthy group, which is part of Ideation. Substantial increases in Morbid and Level 2 means were also noted under Ideation, as was the FM+m mean. Overall, Information Processing demonstrated the least extreme differences. The most prominent differences in this group were a minimal increase in Lambda and a moderate decrease in M and W. Combined, these differences, in comparison to the normative data of a non-clinical population, reflect the perceptual difficulties that contribute to the cognitive deficits encountered in Alzheimer's disease. Hopefully, they will also be a starting point for development of standardized norms for an Alzheimer's disease population.

The final planned quantitative analysis was to take the Rorschach variables found to account for a significant amount of variation in DEPI in the previous regression and enter them in a subsequent stepwise regression that also incorporated psychiatric history and anosognosia. The goal was to see if anosognosia and/or psychiatric history would account for additional variation in depression, and to formulate an equation predicting depression. Affect, CDI, cognitive mediation, anosognosia and psychiatric history were regressed on DEPI. Anosognosia was applied as a continuous variable in this analysis, while psychiatric history remained dichotomous. Neither anosognosia nor psychiatric history

demonstrated a significant R-squared change and, contrary to hypotheses, did not increase the amount of variation accounted for in the DEPI. The model remained the same (see Table A-9) with the resulting equation predicting depression as: $DEPI = .264 + .576 (AFFECT) + .330 (CDI) + .225 (Cognitive\ Mediation)$.

Qualitative Findings

In considering prominent themes across the interview narratives of individuals with Alzheimer's disease, the central and most striking feature noted was Change and Comparison. And in this context, Change is not considered in a positive light; instead, it is associated with alterations in relationships, one's self, time, and the environment. Within the overarching theme of Change and Comparison, each of the domains affected takes the foreground at different times in the individual's life as issues in that arena become most meaningful. To describe how Change and Comparison in each of these areas is felt by the individual, each domain will be considered separately utilizing quotes taken directly from different interview scripts.

Change and Comparison in Relationships

Being social beings, it is not surprising that one of the major concerns predominant in individuals with Alzheimer's disease is how the disease process affects relationships with people closest to them. Often the distress involves the fear of becoming more dependent, and eventually a burden. One 81 year-old man who had long been considered the patriarch of a large family, as well as head of the family business, expressed his concern about the perception his close and extended family may have of him by saying,

“I don’t want my daughter to suffer...or my wife either. I don’t want my family, my sons, my brothers – it’s a big family I’m in, and I don’t want them to be thinking that I’m crazy or not gonna be able to...be anything but sitting around in a chair with people wiping my mouth or hand me food, stuff like that.”

An 80 year-old woman was worried about how her inability to express herself clearly might affect her husband as she conveyed in the following, “Sometimes, if I have something in my mind, I can’t get it out the way it ought to be said...and I fe..feel li..like I’m gonna hurt his feelings or something, you know?” Sometimes the concern expressed relates to others in general. The statements, “I don’t want to be a burden to anybody” and “It makes me more dependent and all” were spoken by two women who were not limiting their concerns to just their family, but to the thought of increased dependency on anyone. And for some, relationship concerns in Alzheimer’s disease are bittersweet, as one lady sadly noted, “Of course my children is good to me, and that’s what bothers me.”

Sometimes the intermingling of self and other perceptions, as well as fears, were apparent. In response to the initial question asked, one man stated his first concern as being, “The most worrisome thing I have about it is having other people know about it.” With regards to his wife, this man felt “she just doesn’t like the idea that I may become a...a...uh...unnecessary evil.”

This last quote regarding fear of what one may ‘become’ touches on another emotion often presented. Concern was expressed about how Alzheimer’s disease had or might change many aspects of life, especially in terms of interpersonal interactions. One frequent theme expressed concerned role reversals. Women were uncomfortable with the

change in their previous caretaking role – “I’ve always done for him...and now he’s having to do for me.” Change can often hit at the heart of how one has found his or her place in the world and how that will not remain. One lady had always defined herself as the caretaker to all, frequently bringing homemade jam and biscuits to her doctor’s appointment. She was tearful as she admitted she had to “give up” taking care of her three year-old grandson, noting “that’s what I looked forward to”.

Change and Comparison in the Self

Despair may also relate to change seen in one’s self. An independent 64 year-old lady told me in frustration, “I’ve always been a smart woman and I wanted to stay that way”; she later went on to say: “I just don’t like what I am now.” Another woman seemingly turned her angst inward as she confessed, “I put myself down because I can’t do what I used to do.” One man’s first hint of there being a medical problem came about as he compared current and previous behaviors. Due to his visuospatial dysfunction, he recalled with amazement the time he was first aware of his inability to properly orient a table so it would fit in the back of a car, something as a woodworker, he had done many times before. Bewildered, he queried the interviewer, “Now answer that - Why would I do that? I knew better not to do that! It was very uncharacteristic of me.”

In one interview, an individual said she often sits and thinks “about what a good life I’ve had...and, that I’m not having now.” Another man confessed his greatest concern of how he may change with strong conviction – “That I’m gonna become an invalid – that’s the most fear I have – I rather be dead than an invalid.” Others took the potential change in themselves due to the ramifications of the disease process more in stride – “Just a matter of getting older for some of us” or “you have to take one day at a time.”

Change and Comparison in Time

Themes involving change from time past and change with time to come were often heard. Most of us reminisce about the past as we age, so with long-term memory being typically spared in Alzheimer's disease, reminiscing about better times in the past was common. A great part of most interviews consisted of the individual telling stories about growing up, their early married life, or raising children. But when the individual related the past to the present in the context of Alzheimer's disease, an air of sadness or regret seemed to underlie the recall. For example, in response to the inquiry of the specific event that came to mind regarding the effects of her memory loss, one lady told the following: "Let's say cooking. I used to love to cook. I could just do everything. Now once and awhile, I'll cook a good meal, but I just don't really want to...It's just gone...and that hurts me." Change was linked to the future as well, and in this context fears and concerns were often revealed. Aware of the nature of change in the disease process, one person, in spite of the moderate functional impairment the disease had already imposed, bargained, "It would be OK if it would just stay this way...that would be fine...but I know it won't."

Change and Comparison in the Physical Environment

For others, change was considered in the context of their external world. A woman who had recently had to move to an assisted living facility lamented, "It's just such a different life – it's all so confined....There is only so much you can do...with one door and one window....and a concrete slab out there. It's just such a different world." We can only speculate the degree to which these comments also reflect her inner world as well as her external world. When queried about a specific problem relating to memory,

she went on to say, “I don’t know of anything special. It’s just a matter of one day you got a home, a family, furniture, and friends around you and you get out and work in the yard and do stuff you want to...get in the car and go....but....anymore, nothing much is the same....and it’s just taken me a while that this is gonna be it.”

Recognition of change inexorably connects one to the variability of life and the disease and for some this prompted a desire and search for some type of permanence. One woman with awareness of the changing future proclaimed her acknowledgement, saying “I’ve got grandchildren, and I want them to have this, that, and the other. I just think it’s time to be thinking about that”. She found some sense of permanence in the concreteness of the physical world, noting, “I want to get this on a piece of paper.”

Thematic Structure

From the quotes above, it can be seen that Change is pervasive and invasive – affecting several of the major domains of an individual’s life. Change modified present and expected future relationships, with the most important people occupying the person’s life and, more importantly, the person’s mind. Change transformed long-standing self-images and one’s conception of his or her personal niche. Change ‘rearranged’ the environment in which the person lives – making it smaller, more confining, more restrictive. Change even changed the experience of time. The previously expected and accommodated concept of “Change” had now been revised, no longer seeming to follow the same rules. Change is now seen not only as relentless – something most older individuals had long since adjusted to – but now, it seemed unleashed. Change seems to transform the ‘laws of nature’ such that perception now plays games with the person and opens a door to confusion.

The domains affected by Change and Comparison do not exist in isolation, but are inexorably interconnected. Comparison of change in relationships necessitates a redefinition of self-established roles and fosters sensitivity to comparing one's self and one's world across time. Each domain of Relationships, Self, Time, and Environment dynamically touches and influences the other while constantly being fueled by a comparison with pre-change levels. A diagram facilitates visualizing the complexity of the interplay, and demonstrates the separateness and interconnectivity of all components, is presented in Figure A-1.

Patient Reflections on Life with Alzheimer's Disease

Throughout the interviews there existed moments when individuals presented aspects of Alzheimer's disease distinct from the personal themes noted above, yet constituted potentially significant observations regarding the disease process and how it affects them. Two general areas were noted and are reflected on separately below.

Handling It

This theme encompasses the manner in which the individual reflectively responds to having Alzheimer's disease, so by default, cannot include individuals that have severe anosognosia. Among the individual responses, two major patterns emerged – Acceptance (often tinged with resignation) and Deferral (sometimes laced with defiance). An individual may not be all one or the other.

Acceptance was apparent in comments like "You do what you have to do and make the most of it" or "I've just had to make to best of it." Hints of being resigned to the diagnosis and the future it portends are heard in phrases such as, "It's just something I have to get used to" and "Everything changed and you just have to go along with it."

One individual, after recalling someone from her past with Alzheimer's disease who "wandered the streets", was pragmatic in future goals saying, "I hope I'm a calm person and I don't have any trouble." A few individuals stayed with honest sadness, simply replying "I wish it were not...that way."

Deferral may be seen by some to be more akin to defenses. 'Deferral' was considered the preferable term due to the psychological connotations of 'defenses' combined with the tendency in the past to mislabel anosognosia as simply defensive strategy. Some examples of Deferral were simple statements that allowed 'room to hide', like "a short pencil is better than a long memory" or "I've always had a flakey memory." One man allowed that "these things can happen and destroy your thinking or your future" and taking a stance against it said, "I don't have time for that." One lady, perhaps not complete in her insight into the extent of the disease, viewed the onslaught of Alzheimer's disease as she had many other hardships in her life asserting, "I take what comes my way and I've been put through hell!"

This is 'Non-Sense'

One theme perhaps unique to Alzheimer's disease, and prominent in many of the interview transcripts, relate to the 'non-sensical' nature of perception. Often this description was applied to the individual him- or herself, as they tried to convey what was going on "inside" them. Sometimes it was a simple expression of being perplexed: "I'm OK one day and the next I am not" or "I was sitting at home in my own chair and I didn't know where I was!" Phrases such as "My memory is laying a little behind what I am talking about" and "Sometimes my thinking is in front of my talking" paint a more vivid picture of what the individual is experiencing. In line with this were comments such as "I

can't get the words to come out"; "I don't know that I'm gonna say it the way it should be said"; or, "Your mind knows what is going on but you can't do anything about it."

For the woodworker cited above, recognition of the 'non-sense' of his own actions due to difficulties in visuospatial functioning was the first indication that something could be seriously wrong. Although he located the fault within himself, it was changes in the 'physics' of his world that made the deficit apparent to him.

A sub-component of the 'non-sensical' nature of perception deserves mention because it highlights the nature of an individual's experience with anosognosia. As a reminder, anosognosia occurs at varying levels and independently in several domains, so variation in perception mirrors that process. But phrases taken from the text shed light on how this process is experienced by the individual. One participant was definitive in stating, "I haven't forgotten anything and...I don't know what it is that I've forgotten." More importantly for the experiential world of the person is the effect anosognosia can have in relationships with others. Often the person is confused by others' claims, saying "They think they told me....and they didn't." Sometimes the discrepancy contributes to animosity. One lady angrily suspected her husband had been talking to the doctor "on the side" and bitterly pondered, "I don't understand where he has gotten all this negative information....I just don't think I'm that bad." This would be troubling enough for her, but she went on to describe her response to the physician's investigation of her memory to exclaim, "I just don't think I deserve being dubbed as an idiot!" From this comment, the value inherent in understanding the phenomenological perspective of the individual becomes apparent. How else can we comprehend behavior without knowledge, or feeling, of the motivation behind it?

CHAPTER 5

DISCUSSION

Rorschach Administration in Individuals with Alzheimer's Disease

Although limited in scope, the few empirical studies cited in the review of the literature (Baldwin, 2000; Hartmann & Vanem, 2003) suggest the forgiveness of the Comprehensive System to variation in administration procedures and provide support for the modifications used in this investigation. Several points, however, should be noted regarding the modifications applied in this study. First, allegiance to the formal administration procedures of the Comprehensive System was a priority. Only as it became apparent in a specific protocol that insufficient data would likely result, were any of the modifications attempted. Even when deviation from standard procedures was deemed necessary, those seeming less detrimental were implemented first. For example, although taking much longer and offering more encouragement than is typical was sometimes tedious and time consuming, this technique seems less likely to adversely affect the validity of the protocol under the Comprehensive System. Similarly, according to research, longer instructions (Hartmann & Vanem, 2003) and Inquiry after each card (Baldwin, 2000) are not seen to significantly affect the resultant protocols. The technique of mentioning card turning was considered as a later option, introduced if other techniques had not been sufficient. Of particular importance, is that no provocative or leading comments alluding to the use of any determinant were ever made. Another point worth noting is that all these techniques were not used with everyone, although for a very few individuals having great difficulty, all may have been tried. As expected, results of

each technique varied within and across individuals – sometimes successfully, sometimes not.

Regardless of the support for variation from standard CS administration not incurring significant problems in any one protocol obtained, the potential effect of these modifications needs to be kept in mind when comparisons are made from results obtained with this methodology to studies using standard CS procedures, especially in this population with DAT. Research has yet specifically to address potential effects unique to this group of individuals.

It is interesting to speculate why these modifications were helpful in this population. Since participants were being seen as part of a comprehensive evaluation for memory deficits, either due to their own concerns or the concerns of family members, most were sensitive to, and often defensive of, being made to feel as if they were “crazy” – a comment often verbalized. Also, for many participants, the perception of their environment is often confusing, even when performing familiar tasks, as some bits of information may be lost or dropped. This is usually exacerbated in unfamiliar surroundings and unstructured tasks. Perhaps detailed and longer instructions prior to the Rorschach help to counter fear and neutralize the tension provoked by each of these circumstances.

Inquiry after each card or response possibly helped the participant maintain the mental organizational structure need to formulate the percept. For all participants, a common occurrence in Inquiry was confusion and blending among percepts.

One of the more difficult challenges encountered was in getting an adequate number of responses for the Comprehensive System – at least 14. The greatest impediment to

acquiring a sufficient number of percepts in this group most likely related to the neurocognitive decline associated with the disease process of Alzheimer's. Often individuals would have great difficulty with perseveration of a percept once identified. This applied to percepts within a card as well as across different cards. Similar to results reported by Aita et al. (1947), a few individuals became so concretized that perceiving anything other than an inkblot was extremely difficult. Often they would turn the card over to see what was on the back of the inkblot card, as if some 3-d image existed and might cue the "correct" response. Aside from the administration modifications covered in the study's methodology, a couple of other techniques were found to help the individual overcome challenges due to cognitive inflexibility and concrete thinking.

One approach seemed helpful in not only producing more responses, but also in helping discern individuals whose neurocognitive decline was the main problem from those who were more fearful of 'seeing' and saying anything 'not normal'. The opportunity came in response to Card IX after a lengthy and difficult session with the other nine blots. Initially the participant exclaimed, "Oh, one is more impossible than the others!" After several minutes of searching the card and turning it around, exasperated, she said, "Oh, I don't know....I'm lost...I just can't make anything of this." Noticing that she was still looking intently and scanning at the card I said, "Just say what ever is going through your mind right now...just talk out loud". *Immediately* she replied, "This could be a flower. This could be a bud of some sort, same on the other side. This could be a glowing flower. And, this could be a flower going into a vase." We went from 18 to 22 responses in a few seconds. For this participant, as for several others in the study, the comment "to just talk out loud" seemed to free the participant from concerns of appearing

crazy or weird – as noted, a fear often expressed. Perhaps the ‘request’ by the examiner provided permission and an ‘excuse’ not to worry about appearing non-sensible.

Another technique applied to those who were stuck on the same percept once identified on a card, was to try and establish a ‘fresh look.’ The card would be placed face down for a second, and the individual asked to look away at something else momentarily or even engaged in a brief diversionary conversation. The individual would then return and look back at the same inkblot again. Sometimes this proved effective at relieving perseveration, perhaps by ‘jogging’ the underlying cognitive inflexibility associated with cerebral organic dysfunction.

Aside from administration, the resulting protocols often presented scoring challenges as well. Previous research with elderly, depressed elderly, and particularly those with Alzheimer’s disease, have reported protocols limited in richness in terms of many Rorschach variables (Orme, 1958; Dorkan & Kral, 1951). Usually these protocols are dominated primarily by form determinants, with increased animal content and limited movement. Although obtaining an adequate number of responses sometimes presented a challenge as noted above, once given, precepts could be quite rich in content and quite challenging for scoring. Consider the following response to Card VIII from a 70 year-old woman:

12: Two lions getting ready to shoot some kind of – what would you call that – comes from back here....missile or something. They are guarding the entrance way to something. LL something getting ready to pinch whatever’s coming in. I guess that’s where the missile’s going to come out. It ripped the blue part already. *Inquiry:* (WAB ll it’s getting ready to pinch?) The way it’s made – ll getting ready to come together. (WAB blue looks ripped?) It’s wide apart and strings across from one side to the other. LL it’s been pulled or ripped apart. This yellow part here – I guess they are going to hit this and then they are going to shoot that out. (Who are we talking about?) The yellow.

(What about the yellow?) LL fire – it's where all the shooting starts, in the yellow – back in the fire. (WAB ll two lions?) The shape of their bodies and the way they are couched – low down to the ground, like they are getting ready to jump. (WAB ll a missile or something?) The way it is shaped and the direction it's headed – see, all the way from back here. (What about guarding the entrance?) Represents the world or something, because it's round – it has yellow, pink, and blue.

Scoring: W+ Ma.FV.ma.C- (2) A,Sc, Na,Fi,Ex, P 4.5
COP,AG,MOR,AB,DR2,FABCOM2

Comparison of Self-report versus Projective Assessment of Depression – Question 1

A correlation matrix using (the non-parametric) Spearman's rho was obtained for the self-report variables of depression – GDS-SR and GDS-CR – and the projective measure of depression, the DEPI, assessed by the Rorschach. The Rorschach CDI variable was also included to assess feelings of social coping inadequacies, considered by Exner to potentially contribute secondarily to feelings of depression. In the initial matrix, significant correlations were found between the GDS-SR and the GDS-CR, and between the CDI and the GDS-SR. However, after the Bonferroni correction for multiple comparisons was applied, significance remained only between the participant and caregiver's report of depression. The lack of significant correlation between the self-report assessment of depression and the projective measure was not surprising. Self-report instruments and projective instruments sometimes have been considered to measure different constructs (Shedler, Mayman, & Manis, 1993; Westen, 1998). Self-report methods usually represent not only the conscious feelings of an individual, but also those chosen to be expressed. With depression, such expressions may be filtered due to social concerns, personal fears, or in the case of anosognosia, lack of insight.

Specifically with regard to the population in this study where symptoms between depression and dementia overlap, the most ‘truthful’ of answers may simply be measuring something other than depression. Projective instruments on the other hand, tap into the often unrecognized feelings of the individual. In the case of depression then, these conscious social and cognitive filters are by-passed. This is particularly helpful under conditions of anosognosia.

The trend toward significance demonstrated between the CDI and the GDS-SR is of interest, however, and may lend support to Exner’s original contention when developing the CDI as separate from the DEPI. The characteristics of this index were based on the “helpless” group that was distinguishable from the depressed group. According to Exner (1993), this index represents social coping deficits by which the individual is distressed and is “acutely aware of”, the symptoms of which may often be interpreted as depression. Within this context, it is not surprising that the self-report GDS and the CDI demonstrated a significant correlation. This relationship becomes more apparent when some of the individual questions of the GDS are inspected. Questions “Have you dropped many of your activities and interests?”; “Do you prefer to stay at home, rather than go out and do new things?” and, “Do you prefer to avoid social gatherings?” can easily be assessing social coping deficits as well as affective depression. These may have contributed secondarily to depression and confounded the measurement of depression obtained with the GDS.

The significant correlation between the GDS-SR, completed by the participant, and the GDS-CR, completed by the caregiver, was considered interesting based on findings suggested in previous research. Research by Arguelles et al. (2001) found that

caregivers' depression influenced their ratings of individuals with Alzheimer's disease. Although using a self-report measure of depression other than the GDS, their research found caregivers with higher depression scores were significantly correlated with a greater number of negatively biased caregiver errors, resulting in their reporting the individual to be more incapacitated than he or she actually was. Alternatively, Kotler-Cope and Camp (1995) studied a small sample of 13 individuals with Alzheimer's disease and did not find a significant difference in the mean score of depression assessed by the individual with Alzheimer's or the caregiver.

Based on the positive correlation found in our investigation and the interesting, yet contradictory, findings noted in the research cited above, a post-hoc analysis comparing the magnitude of the differences between the GDS-SR and the GDS-CR was conducted. The results of this analysis (Tables A-15, A-16, & A-17) showed a significant difference with the participants' mean score at 7.9, and the caregivers' reported mean of 13.4. In other words, the caregivers significantly estimated the individuals with Alzheimer's disease to be more depressed than the individuals rated him- or herself. This is in keeping with the skewed perception of caregivers reported by Arguelles et al. (2001), but contradictory to that of Kotler-Cope and Camp (1995). In the current study however, no assumption can be made concerning the source of the difference in the depression scores since affective feelings of the caregivers were not assessed.

In assessing the relationship of projective and self-report measures of depression to anosognosia, the resulting correlations with anosognosia were non-significant for both types of assessment instruments. This places the results of this analysis in line with those of other researchers reporting no correlation between anosognosia and depression (Reed

et al., 1993; Verhey et al., 1993). However, concerned that the complexity of the issue regarding a different relationship with anosognosia in major depression (Starkstein et al., 1997) or with the memory domain of anosognosia (Starkstein et al., 1996) had not been completely addressed, a separate post-hoc correlation was run using anosognosia-memory scores only. Also in this post-hoc correlation, DEPI scores greater than or equal to 4 were selectively chosen to capture the effects of more serious depression as opposed to dysthymia. The RIAP (Exner & Weiner, 2003) uses five or more positive indices on the DEPI as suggesting serious mood disturbance. However, this cutoff resulted in only nine participants, a number rather low for a correlation. Including four or more positive indices was chosen instead, not only to increase the N, but also be certain that individuals leaning toward severe mood disorders were included.

When only more severe depression is considered for its relationship with the memory domain of anosognosia, the resulting coefficient was $-.35$ with a trend towards significance at a p-value of $.110$ (two-tailed). This negative correlation is interesting for it suggests that as lack of insight or awareness increases, more serious depression decreases. This supports the contention proposed by Smith et al. (2000) and Seltzer et al. (1995), yet is in contrast to the relationship reported by Starkstein et al. (1997), where an increase in anosognosia was associated with increases in depression when major depression was being considered. Differences between the two findings may also be attributed to the fact that Starkstein et al.'s study was longitudinal, unlike the current investigation. Selecting individuals with more severe depression resulted in only 22 subjects available for the analysis in the present study. Therefore, it is possible that statistical significance might be reached if this number is increased in future analyses.

Overall, the results correlating depression and anosognosia in this study do not support a significant correlation in a general sense, but lend more credence to the necessity of inspecting the specific domains of anosognosia, as well as distinguishing between dysthymia, or “reactive depression”, versus more serious mood disturbances such as Major Depressive Disorder.

Influence of Anosognosia and Past Psychiatric History on Depression and Social Coping

– Question 2

The influence of premorbid personality functioning on Alzheimer’s disease has received little attention in the literature. This question was addressed in the present study by the response given to a question on the questionnaire completed as part of the physician’s initial evaluation that inquired about previous psychiatric treatment. Past psychiatric functioning and anosognosia were considered in separate ANCOVAs for their impact on depression and social coping mean scores, and neither analysis demonstrated significant main or interaction effects.

Most probably the lack of significant results in this area is associated with a study weakness in how premorbid psychiatric functioning was established. A simple ‘yes’ or ‘no’ to the general question, “Have you ever had psychological problems (nervousness, taken nerve pills, nervous breakdown, depression)?” was answered by the participant. Admittedly, this question does not do justice to the complexity of potential psychological issues needing to be addressed in obtaining a complete picture of an individual’s psychological history. However, since it was the only indicator available for this assessment, its inclusion was considered preferable to its omission. Further, even though

the physician went over the questionnaire in person later during the exam, the response to the question is self-reported by the individual with Alzheimer's disease, sometimes with the assistance of the caregiver. Many individuals may not be comfortable revealing sensitive personal information on the first visit to a physician, especially regarding psychological functioning. No attempt was made to verify the reported past psychiatric history as reported.

Unlike the correlations above, in these analyses, anosognosia was reduced to a dichotomous variable, defined as being positive if the absolute difference score was equal to or greater than one across all domains of anosognosia considered. This simplification of anosognosia status results in a loss of power in the analysis and may be muting a potential relationship. Perhaps refinement in determining past psychiatric functioning may produce different results in future studies; in the present study, however, no support was found for the proposed hypothesis that past history or anosognosia significantly effect depression and social coping as assessed projectively with the Rorschach variables utilized.

Cognition, Affective Function, Social Coping, and Depression – Question 3

In the present study, the relationship of these variables to depression was examined in a stepwise linear regression. Results indicated that Affect, Cognitive Mediation, and CDI accounted for a significant amount of variation in depression, as assessed with the Rorschach.

Affect, an individual's capability to modulate appropriately between thinking and feeling and to process affective experience without undue strain, has been considered

vital to healthy emotional experience and expression (Weiner, 2003). In this study, Affect was measured by the number of pathological indices present (Figure A-2). The results of this investigation confirm that deficits in this area of functioning contribute substantially to depression, more than any of the other variables under consideration. So far, the reason for this finding in Alzheimer's disease individuals is not completely understood and warrant further investigation to ascertain the contributions of organic dysfunction and psychosocial factors.

Similarly, deficits in social coping, assessed by the CDI Rorschach variable, had also been reported to contribute secondarily to depression with symptoms due to perceived inadequacies at times being confused with those relating to depression primarily. The connection between feeling comfortable in social interactions and the experience of depression support Exner's (1993) contention of such a relationship. As far as the author knows, this is the first time research has been able to document the nature of this connection in individuals with Alzheimer's disease. Further, it is less likely that the relationship is based on secondary behavioral symptoms, such as social isolation and decreased social activity being misinterpreted as depression, since in this analysis depression was assessed projectively and not on the basis of expressed or observed symptoms. Therefore, this significant relationship may well reflect the perception of social inadequacy by the individual and the emotional dysphoria it engenders.

Cognitive functioning was assessed through the Cognitive Triad scores obtained from the Rorschach. The division of cognition into three component parts permitted a more thorough assessment of how Alzheimer's disease may affect cognitive functioning, while at the same time, allowing for the grouping of indices into constellations that maintain

practical meaning and application for the individuals' interaction with the environment. Few studies have applied the Rorschach to elderly to assess cognitive ability (Mayne, 1995) and even fewer to individuals with Alzheimer's disease (Perry et al, 1997). As with Mayne, single Rorschach variables such as R, M, or W% are often considered, and even though a significant relationship with cognitive decline or depression may be established, the exact nature and meaning of that relationship may remain vague. In this analysis, cognitive mediation, or how information is perceived and translated by the individual with Alzheimer's disease, was singled out as contributing more to depression than to either information processing or ideation. Exner and Weiner (2003) note that difficulties in cognitive mediation, especially when the individual does not see him- or herself or the world in a realistic light, can cause adjustment problems. In a clinical sense, perhaps having delineated more precisely the type of cognitive dysfunction associated with depression will lead to more effective treatment strategies targeting this deficit area.

Each variable also was noted to demonstrate a positive correlation with depression. Although not surprising for Affect and CDI, the cognitive triad variable had been hypothesized to have a negative correlation with depression. This prediction was based on a preliminary study with Alzheimer's disease participants in which information processing demonstrated a significant negative relationship with depression in a linear regression (Oglesby et al., 2005). In the current analysis, information processing did not account for a significant amount of variation in depression, beyond that of cognitive mediation. Ostensibly, cognitive mediation and information processing have distinctly different relationships with depression and perhaps future research will be able to define each more clearly. From the results of this study, it is suggested that declining cognitive

functioning is associated with increased depression. This conclusion supports other research making a positive connection between cerebral dysfunction and depression (Lind, Edman, Karlsson, Sjogren, & Wallin, 2003; Thomas, Perry, et al., 2003).

In the current study, a restricted range was also noted in the cognitive variables of ideation and information processing that most likely affected the significance of the observed correlation among depression, ideation, and information processing. This finding is important since it allows additional speculation on the relationship between cognitive decline and Alzheimer's disease. Inspection of the data in this study supports ideation and information processing also being adversely affected in the Alzheimer's disease process. Seventeen participants had ideation scores, and 25 had information processing scores, consisting of 3, 4, or 5 positive pathological indices. This finding is in a group of participants that have only mild to moderate dementia. It is not untenable to speculate that all cognitive triad variables are adversely affected in Alzheimer's disease as assessed by the Rorschach and that the Rorschach is sensitive to decline in these areas; in this study, however, only cognitive mediation reached statistical significance, in part due to the range restriction of ideation and information processing.

In summary, this analysis highlights the emotional complexity of depression, with its contributions from Affect and CDI, and may account for some of the difficulty encountered in isolating depression as a singular construct. Similarly for cognition, the ability of the Rorschach to separately examine component parts of cognitive functioning permits speculation that cognition is a complex construct and aspects of it may be differentially affected in the disease process associated with Alzheimer's disease. In this analysis, cognitive mediation demonstrated a specific and important relationship with

depression that was substantiated statistically. These results are unique for documenting the connection between cognition and emotion, specifically a decline in cognitive mediation and depression, in Alzheimer's disease.

Predicting Depression – Question 4

The final planned quantitative analysis was to take the Rorschach variables found to account for a significant amount of the variation of depression in the previous regression and enter them into a new regression adding past psychiatric history and anosognosia status to assess the possibility of predicting depression. Even though past history and anosognosia had not demonstrated a significant effect on mean depression scores, it was not clear if they would account for a significant amount of variation in depression above that of the Rorschach variables. Also in this analysis, anosognosia was a continuous variable as opposed to being dichotomous, as previously defined. Affect, CDI, and Cognitive mediation scores were entered with Past Psychiatric history and anosognosia scores in a stepwise linear regression. Neither past history nor anosognosia added to the predictive power above Affect, CDI, or cognitive mediation.

The limitation of the past psychiatric history assessment have already been addressed and still apply in this analysis. Beyond that and as noted earlier, the relationship between anosognosia and depression has been found to be variable in the literature, as well as in this study, dependent upon the severity of depression chosen for analysis and/or the domain of anosognosia. It seems likely that these varied results support the multiplicity of constructs being measured under the auspices of depression and anosognosia. When the constructs contributing secondarily to depression, comfort and ease in moderating

affect, and discomfort in social interactions, are partitioned out separately, along with cognitive functioning, psychiatric history and anosognosia may not play as important a role in depression. Psychiatric past history may well be subsumed by the deficits expressed in current affective and social dysfunction, just as anosognosia may be incorporated into cognitive mediation deficits. These are questions to be addressed in future research.

The Big Picture – Qualitative Case Studies

The Wake-up Call

The desired end product of research in clinical psychology, especially from an assessment perspective, is to better understand the individual with whom we are working. With that frame of reference in mind, I would like to switch to a more personal mode and share how the data gathered from a variety of assessment instruments worked in a complimentary fashion to help me to better understand the participant as an individual. I have chosen one of the cases in which I feel I gleaned unexpected insight into the individual's personality functioning through an integration of the data. I think it is also meaningful to present the information as it unfolded for me, because it is really my perception of the participant that changed along the way.

Some basic demographics and a review of the assessment sequence may be helpful. This individual is a 70 year-old male, in a second marriage, who recently relocated to this area as part of his retirement plan. At the time of the assessment, his MMSE score was 25. In his professional career, he had primarily been involved with electronics and technology.

My first contact with the individual and his wife was during the physician's initial assessment, followed by my administering the MMSE and a brief cognitive screening as part of that assessment. During this initial visit, Mr. M worked hard to make it clear that he had "always worked on his own schedule", oblivious to dates, time, meetings, and names of people – simply because they were of no consequence to him. In fact, he recanted quite proudly, he had shown up for work once on Christmas Day, since he was completely unconcerned with events going on around him that, as he saw it, were not of import. In accordance with this posture, he was somewhat disgruntled with the cognitive assessment process, responding as if it presented a personal challenge to his intellectual integrity, and chose instead to dismiss its significance by discrediting the test and dismissing the meaningfulness of any mistakes. At the end of this meeting, I admit I felt tense and defensive of the value of my own position in the assessment process, as well as uncomfortable with the interpersonal interaction. For the sake of knowledge, Mr. M agreed to participate in the study and future testing was scheduled. It is interesting to note also at this point, the status of Mr. M's anosognosia was not known. There were suggestions of a lack of insight by his dismissal of memory lapses he and his wife described, but his manner could not be distinguished from his basic personality structure.

On our next meeting, the Rorschach was administered first, followed by the phenomenological interview question. As I later transcribed the Rorschach verbatim, I became embarrassingly aware of my own defensiveness as I had administered the test. Because of this, consideration was given to not using Mr. M as a case study, although the tone of the interaction between us – how it changed and evolved as more insight into his world was gained – is as valuable as the 'data' gathered on paper. So, with my mindset at

the time of the Rorschach acknowledged, consider the following first few percepts, remembering this was my next encounter with Mr. M as I learned more about him.

Card I 1 sec

1. A butterfly – the wings, symmetric. (WAB ll a BF?) The shape of this area up here and the fact it's symmetric around a center point. This would have to be an abstract, because the wings don't go in and out like that on a BF. But, you know, you could also say it was nothing but somebody dropped some ink. (Yes, well, we said that they were inkblots) Yes, but this is not a random inkblot – there is too much symmetry for that. (Yes, I believe they were folded over in the making of them.)
2. The symmetry of it – could be like something reflected in a mirror. (Something?) The shape is a reflection – I just see the mirror image of it – a strong line down the center – same on both sides. I could say some kind of sexual stimulation but I don't see it... Or, maybe some wild sexual orgy going on. (Would you like to follow up on that?) No, No – even my mind can't go that far.

Card II 7 sec

3. Well, I could see a first grader with water colors trying to paint something. Again, everything is very symmetric. I see a black blob and an orange blob reflecting in a mirror. (WAB ll a first grader?) Well, it's very symmetric. (Yes, but what about the blot makes you say a first grader?) I would hope by the time he or she got to second grade, they could do a better job of it. (Better?) If they were trying to draw something, it wouldn't be much more than an amoeba – or, I should say, an amoeba with a hole in the center. Everything is very symmetric.
4. And if someone was to really get carried away, that white space in between is almost like a delta wing fighter plane – the wings here and that thing going up the middle... Oh! and here's the exhaust. Kicked in its afterburner. But I would be the first to agree, that's a stretch. (WAB ll a plane?) If you look at a delta wing, this line comes back here, nose of the plane, wings. (WAB ll exhaust?) If you make the rash assumption that this is the tail end of it, all those engines come out the back... in the back. (What in the blot makes it look like exhaust?) [Participant speaking as if stating the obvious] Well if this is a single engine plane, the engine is here, between the front and the back, and this is where the blast would come out. (So it's because of the location?) Yes – They don't have them on the sides or in the front. If this is the front then, this has to be the back. (Got it) Just the way it works.... I'll also point out that I'm a fighter pilot – in my missed-spent youth.

Although not a Rorschach master, by this point, with the two reflections suggesting narcissistic tendencies, I began to have some insight into why I felt the need to defend the

value of what I was doing as well as my own self-worth. The use of intellectualization was peeking through, as was perhaps some oppositionality with the white-space response. However, his vulnerability regarding his own self-image was also apparent, suggested by the hole in the amoeba. Hints at the cognitive strain induced by the ambiguity of the inkblot were being expressed as he repetitively clung to the symmetry of the blot.

The rest of the 27 total responses were much the same way as was the tone of the content. I admit I had to distance myself affectively in the testing process to insure that my emotional reaction would not interfere with obtaining as unbiased a protocol as possible. And, I was pleased when it was completed. My thoughts were leaning towards just getting the rest of the research information and chalking this one up to “just glad it’s done”. Then came the interview – and my perception changed.

I: Can you tell me about a specific time that stands out for you since you have been told you have a memory problem or there has been talk of your memory?

S: (Sighs) There’s so many, uh...I’m gonna have to lead up to it, if you don’t mind. I’ve always had what I call a flakey memory..ah...I’m a compulsive reader and my memory has always been better from a reading standpoint than for hearing. Ah, I was born tongue-tied so I have trouble pronouncing words. And...uh, uh so.. I’m much more oriented toward reading and memorizing things than verbal ..so..alot of the...so when people would say things...etc...etc...and the like, I don’t even remember when my memory never bothered me, but if I read something I could always recall that, etc...etc. To me my concern about memory is not what I hear and I don’t remember; it is with what I read and don’t remember. You know, I am a compulsive reader...most of my interaction in life is more from reading, than from people. So the fact that I can’t remember what I read is more important to me than that I can remember what somebody said to me. Cause I...I went through thirty-eight years at work forgetting to show up at meetings I was suppose to be at and everything else – it was just accepted then that if I showed, I showed...if I didn’t, I didn’t.

I: Any particular incidence that stands out in your mind?

S: Well, yeah. Uh, I was at a shopping center around someplace here one day – I forget where it was. I drove home. There was only one problem – I left my wife back there. That was the first time I’ve ever done that. I tend not...you may find this hard to believe....I try not to forget my wife. As worse as it is...so the fact...that was the crowning blow...cause it just flat...had... didn’t even cross my mind. I got home and starting wondering “I wonder where my Sweetie is?” and started reading. I got this phone call – my wife crying, “Where are you?” I said, “I’m here, where are you?” (chuckling) Oh - Damn – I forgot that. That was a wake up call for me – that was not fun...cause (Quietly now, misty eyed)...she’s the best thing that ever happened to me. So.... it’s a second marriage for both of us – been together almost twenty years. I don’t want to do that again. So, that was my wake up call. I don’t know...you know, it’s one thing to forget what time it is and not go home and work all night. But, it’s another thing to forget somebody who’s out there – not a good thing. That is probably the worst thing I’ve ever done in my life. So I would not want to do that again.

I: Thanks for sharing that with me – I can see that really bothered you.

S: Yeah...that...to me...was an olympic thing.

I: So, you felt bad...

S: The thing is ...she is the best thing that ever happened to me...she’s just a wonderful person to be with and it just I....(deep breath)...would never want to hurt her in any way, shape, or form. She’s just the best thing that ever happened to me. You know, I have had some from, uh...at work...they have what they call ‘Extrordinaries’...uh....um...I was once awarded it. You know, usually it went to people who won Nobel Prizes, but I was the first non-academician to win.

I: Oh? Good.

S: Yeah, so it’s not like I haven’t had a couple of things happen...right to me. But, she’s the *best* thing that ever happened to me and to forget her...that to me is just...can’t believe I could do a thing like that.

I: That was the wake-up call.

S: Yep, that was the wake-up call. So...ah....(misty-eyed)...got me...that was the wake-up call.

With this interview, I was able to see and feel the heart and soul beneath the defenses, and so was able to lay down my defenses. In a personal sense, I could see through the

narcissistic-like bravado, and see the individual who truly cared about *someone* else, not *something* else. In an assessment sense, the narcissistic features can be seen in a different, more protective light. In an ironic sense, after proclaiming attachment to the world through books, he ‘took notice’ of his cognitive problems for their effect in an interpersonal relationship. By this time, I suspected his claimed ‘separateness’ from the social and affective needs of the world did not go ‘all the way to the core’, and his intellectualization, used to bar the door, may not be made of steel. This last part has also been hinted at by the strong use of color in the Rorschach percept as well. And lastly, even though the anosognosia instrument had yet to be scored, I had more confidence that his dismissal of forgetfulness was not due to being anosognosic, but was more defensive in nature.

The preceding occurred prior to actually scoring the Rorschach and getting the RIAP report. Consider below a few of the interpretive statements taken from the RIAP.

He displays serious difficulty in thinking logically and coherently....

This person often attempts to deal with uncertainty about his self-image and/or concerns about his self-value in an overly intellectualized manner...

This person’s self-image includes some negative and unfavorable attitudes toward his body and its functions...may give rise to dysphoric affect and a pessimistic outlook on the future.

There are indications of marked tendencies to overvalue his personal worth and to become preoccupied with his own needs at the expense of concerns about the needs of others. In addition, these narcissistic-like traits, he is likely to exhibit a sense of entitlement and a tendency to externalize blame and responsibility.

However, the RIAP also noted an “adaptive balance” between focusing on himself and other people that was...

...an unusual finding in light of his previously noted tendency to overestimate his personal worth....Such a combination raises the possibility that his previously noted narcissism does not constitute a pervasive personality dysfunction but is, instead, accompanied by some substantial self-doubts as well.

This is only a minute part of the vast information provided by the Rorschach and the RIAP on personality dynamics, as well as on cognitive functioning. But just these few excerpts substantiate tenets postulated from the personal interaction, the Rorschach, and the phenomenological interview. Collectively as an integrative process, they intermingle to give breadth, depth, and richness to how and why we experience the other person with Alzheimer's disease as we do; just as important, if not more so, it provides insight into how they are experiencing the world around them. For me personally in the assessment and data gathering process, the phenomenological interview was pivotal in my understanding and breaking through each of our defenses. For the record, his score on the anosognosia questionnaire did not suggest a lack of insight in any domain.

Will the Real Reality Please Stand Up?

I would like to share another case study that had a substantial impact for me, mainly for its insight into the effects anosognosia has on the individual with Alzheimer's disease in their experience of the world.

Mrs. T was a 75 year-old married woman with an MMSE score of 24. From the outset, beginning with the physician's evaluation, she was defensive and denied her difficulty as being as extensive as indicated by her husband. Her past depressive history was known and discussed as her treatment for it continued, although she did not feel this was causing any memory difficulties. Initial medical tests were ordered, the anosognosia questionnaire

completed, and a return visit scheduled. Being in a time crunch during the first visit, Mrs. T and her husband decided to do the Rorschach when they returned for the test results.

On that return visit, Mrs. T's husband wanted to share information about Mrs. T's status separately, without her being present. The tension and negativity in their personal relationship, as well as her upset about the information presented, had been evident in the initial meeting. Even though meeting separately is not this physician's preferred method, he obliged, and then saw Mr. and Mrs. T together to review the results of the tests. I saw Mrs. T for the Rorschach and interview after that meeting.

To say the least, Mrs. T was distraught after meeting with the doctor. She was perplexed by his perception of her functional ability and suspicious that her husband had been "telling tales" on her. To put it bluntly, she was angry. Initially her anger toward her husband and the doctor were apparent. As the Rorschach and the interview continued, her anger and disappointment toward her life and the world became apparent. But her anger rather quickly changed to sadness. Getting through the Rorschach was a challenge, as it was difficult for her not to return to feelings of indignation alternating with resignation, about her previous meeting. However, this attribute was tempered and interlaced with attempts to reach out and connect with the examiner. The content of her Rorschach responses reflected the emotional damage she felt. Consider the following first few responses:

Card I 4 sec

1. LL a thing you put on a door...to...a door at the opening of a door... the metal piece on a door. This goes on one part of the door, this on the other....a hinge. (WAB ll a hinge?) The shape of it... and the fastener in the middle and the hinge goes out this way. (WAB ll metal?) It's a hinge...these little thingscb little things dropping off of it.

2. Cb a leaf that's fallen on the ground and fell in a rock. (WAB ll a leaf?) This wb one side and the other. Let's say two leaves fastened together and pieces are broken off. (WAB ll leaf?) The points on each side and the shape. (WAB ll fallen on rock?) This little piece right here...cb a rock. (WAB ll a rock?) Shape of it.
3. Or, a bird....the top part. This over here ll a bird sitting on a limb. (WAB ll a bird?) The beak.

Card II 9 sec

4. It's a wreath, a Christmas wreath, hanging on the door with orange instead of red (S laughs). (WAB ll a wreath?) It's round with a hole in the middle and the edges are not consistent – not perfect. (WAB ll Christmas wreath?) The red, those are ribbons.
5. Maybe something on fire. (WAB ll on fire?) These 2 up here – these cb blazes – fire. (WAB ll fire?) Red color.

Themes of broken pieces, dead tree stumps, and falling leaves were predominant in the remaining percepts, making the depth of her sadness apparent. The Rorschach percepts gave evidence of her cognitive dysfunction and of her affective responsiveness, but it was the phenomenological interview that gave insight into her personal confusion with those around her. Mrs. T simply could not understand why people would treat her this way when it was 'so uncalled for.' She began by telling me how "awful" she felt in the meeting with the doctor and how she knew she wasn't perfect, but she defended herself by noting that she continues to "go all day...and do the things I've always done". The question was then asked, "So what has this been like for you, coming here and people checking out your memory?" To which she replied:

S: Well, I'm willing to uh, ...I realize that it's not...that there are some things that are not perfect, but I just don't think I'm that bad. What do you think? (S excited)

I: I'm not around to know.

S: I know it's hard for you to know, but I've answered every question...I don't understand.

I: It's pretty confusing to you, it sounds like...

S: It is! When I walked in....uh, attacked is not the right word...but it was...well it was like that to me...

I: From the doctor, you felt he was attacking you?

S: Yeah, about how bad it was.

I: About how he said he felt like you can't take care of a couple of things? Like bathing or taking your medicine?

S: Yes, yes, yes

I: It felt like a real attack on you.

S: Yeah, and I...I appreciate him...he's a great...I have great admiration for him....but I wish... my husband's been talking to him. I wonder...I wonder....well, let's go on.

I: OK

S: (S sighs heavily and now speaks quieter, slower – seemingly very fatigued) I take what comes my way and I've been put through hell. I have *never...never...* been able to do what I wanted to do. And to be free to do what you wanted to do. I was a victim of WWII.

From this point, Mrs. T told her life story – the theme of which was expressed in her statements: "I've been put through hell. I've never...never... been able to do what I wanted". In short, she considers her life a compromise made for others, at her expense. For anyone harboring doubt that projection of one's personal life and personality can be found in Rorschach content, the following percept and Inquiry response from Mrs. T to Card V should be considered.

Looks like another, just a different shape, of a leave coming down...split. (WAB 11 a Leave?) These sides here. (You say it's coming down?) Could be, or could be laying on the ground. (Tell me what you think) Well, I guess it's on the ground. (WAB 11 it's laying on the ground?) It's spreaded out flat and has a back bone and couldn't stand up, because the leaves wouldn't be strong enough to hold it. I don't think – could be – I don't know.

Her compromised life has left her bitter and, in fact, she was perceived by others as most often being bitter and angry. But there was another personality dynamic revealed to the interviewer, both at the end of this encounter as well as during the first one. As noted, she would make some attempts to connect with the examiner during Rorschach administration. At the end of each of the two meetings she told me how much she appreciated me and reached out and hugged me. Her behavior seemed driven by a sincere need to touch someone “out there.” Ironically, because of her general negative presentation, others often did not respond positively towards her. In fact as she left, the office staff commented how difficult she must be to live with.

My perception of Mrs. T was different from that generally felt by others. I was struck by how her ‘missed-perception’ of the world contributed to the negative attitude she puts forth. This is a detrimental side effect of anosognosia unacknowledged and not addressed, at least in terms of research investigations, with regard to depression. It is no wonder that she feels the world is hostile and she is under attack, when she is not capable of registering that to which others are responding. In her world, the problem does not reside in her – it resides in others, in their misdeeds – and is not just the result of her not remembering what someone told her or understanding what has transpired, but by her not being able to recognize how her cognitive dysfunction may be tainting her world and consequently, her interaction with others.

The RIAP confirmed much of what had been noticed during the Rorschach administration and interview relating to cognitive dysfunction and the current stress with which she is attempting to deal, intermingled with her personality style. Consider the following excerpts from the RIAP:

At the moment, situational stress she is experiencing appears to consist primarily of demands on her coping capacities...[and] she seems particularly worried about being helpless in the face of circumstances in which other people and events outside her control will determine what happens to her.

She appears at considerable risk for being flooded by affect and overwhelmed by more emotion than she can tolerate.

She appears to have limited ability to manage interpersonal relationships in a comfortable and rewarding manner....and may make her vulnerable to being ignored or rejected by others who see her as a distant, guarded, and ineffective person....She has limited prospects for being socially popular or well-liked.

She tends to take in more information than she can organize efficiently...She displays serious difficulty in thinking logically and coherently, and is less capable than most people of coming to reasonable conclusions about relationships between events.

One RIAP comment is of particular interest for how it may relate to anosognosia.

Mrs. T ultimately was found to score positive for anosognosia on the CASAD.

[She] does not appear as introspective as most people. Because of her lack of self-awareness, she is at risk for adjustment difficulties involving inadequate understanding of herself, insufficient appreciation of the impact she has on other people, and a limited capacity to examine herself in a critical fashion...

The dynamic described above is further complicated by another cognitive capacity elucidated by the Rorschach that at first glance seems contradictory to the previously noted cognitive and perceptual dysfunction. The RIAP also noted that Mrs. T “demonstrates generally good abilities to perceive events conventionally...and to interpret the action and intentions of others without distortion”, but that even though good reality testing is possible, she “often opts for unconventional ways of perceiving people and events.” Perhaps for Mrs. T, and some others with Alzheimer’s disease, having a

degree of accurate perception, combined with anosognosia, constitutes an unfortunate mixture that is more likely to result in being confused by the actions of others, especially as they relate to social interactions.

The theme of being confused, if not angered, by the actions of others was expressed in several interviews of individuals with anosognosia. One lady was disturbed with her family and felt tricked by them because “she did not know she was coming here [doctor’s office]”, even though they reported having told her several times. Another lady felt sad and angry that the community was isolating her. She noted how she always comes to church events, it just that “sometimes they forget to tell me about them.” One anosognosic lady cut to the chase with her opinion of having her memory checked out, sharply stating, “This is a lot of malarkey!”

From Mrs. T’s Rorschach and interview, and from the comments of others, it becomes possible to see a different relationship formulated between depression and anosognosia than that sometimes proposed in the literature. From where “we” stand “on the outside looking in”, it is tempting to believe that those with anosognosia should be less likely to be depressed – after all, without insight into their cognitive decline, they have nothing to be depressed about. But for Mrs. T, as with some others, anosognosia does not provide blissful ignorance. Instead it creates a confusing world where people do mean things to you without justification. This type of reasoning sounds like good grounds for being depressed.

Limitations of the Study

Several of the limitations of this study have been previously noted in the paper. Comments have been made regarding the weakness of the index used for psychiatric history and the consideration that needs to be given when comparing the results of this investigation to other Rorschach studies, due to the modifications in Rorschach administration used here.

Another limitation that deserves mention relates to the pathological indices of cognitive triad variables and Affect. The indices used were the result of a selection process. All possible indices were not included for each cognitive triad variable or Affect. The selected indices were those that could be more easily quantified and had minimal overlap with DEPI. An unfortunate by-product of this process is that some important components of each of these variables were not included. There was also an effort to have approximately the same number of indices across the Cognitive Triad variables, so that several potential indices were collapsed into one. For example, for Affect, if any of four conditions involving Sum C' and Color Shading blends were met, then a single positive index was counted. The converse was also applied, such that if all four conditions were positive only one positive index was counted. This reduces the potential information and individual variation that could be obtained for this variable.

One comment is actually more of a disclaimer than a limitation in the study and involves phenomenological methodology. As noted earlier, the phenomenological process as outlined by Thomas and Pollio (2002) was not strictly adhered to. This affected the study in two ways. First, the protocols obtained were not as in-depth as those typical of a pure phenomenology study. This was in part due to the methodology of data

collection. The interview was always done after the Rorschach and the GDS (and sometimes a repeat of the MMSE) by the researcher, and usually after a physician visit as well. Because of that, the participant had often been engaged for approximately two hours and was becoming fatigued. Therefore, a short interview was more appropriate. The caregiver was also waiting for the participant and the researcher was sensitive to minimizing their discomfort. Sometimes brief interviews were the result of the participant's functioning level or of the participant not wanting to stay longer. Sometimes anosognosia status limited interview potential because the individual did not consider him- or herself to have any problems to talk about. Although a limitation with regard to proper phenomenological procedure existed, the information gathered in the interview is considered valuable and valid for representing the perspective of the individual's view of his or her world.

As a final note, one important study limitation that was not possible for the researcher to control relates to medications taken by the participants. Participants were on various medications for Alzheimer's disease, any coexisting medical problems they may have, and for treatment for depression. Some participants were already established on antidepressant medications, while others were started as a part of the neurologist's assessment. If possible, testing for this study was done prior to initiating anti-depressant medication. However, generally this was not the case, since the best interest of the participant and his or her medical care was of primary concern. Delaying anti-depressant medication for data collection was not considered a viable option. Instead, consideration should be given to the potential variability medications may introduce into the study. On

the other hand, these results can be considered representative of the variability encountered in clinical populations.

Summary and Conclusions

The basis for initiating this investigation arose from the variable relationship reported in the literature between depression and anosognosia in Alzheimer's disease. One postulate made regarding this inconsistency was that perhaps depression had not been accurately assessed or clearly defined in prior research. This was based on overlap between many of the symptoms, often behavioral, associated with both depression and dementia. In response to this, a projective measure of depression, the DEPI obtained through the Rorschach, was offered as an alternative to a typically used self-report measure, the GDS. In fact, one major component of the research and benefit from this study was demonstration of the general utility and applicability of the Rorschach in individuals with Alzheimer's disease. Further, application of the Rorschach and CS made it possible to examine depression and cognitive dysfunction simultaneously with a single instrument.

Through the Rorschach, an assessment of the mood component of depression could be obtained that sidestepped the confusion between overlapping behavioral symptoms, while at the same time, bypassing any conscious filters that may have been contaminating the responses given in self-report measures. The lack of significant correlation found between self-report and projective instruments supported the contention that different aspects of depression were being assessed with the two types of measures.

In further analysis, the mean depression score of the DEPI did not demonstrate a significant difference according to anosognosia status, nor was the correlation between DEPI and anosognosia significant. Two factors considered to contribute to these findings were the multiple domains of anosognosia and the severity of depression that had been recognized in the literature. In fact, when only the memory aspect of anosognosia was correlated with only those subsets of individuals having more severe depression, a trend toward significance between anosognosia and depression was found, although it was in the opposite direction from that previously reported in the literature.

This seemed somewhat puzzling until multiple regression demonstrated that the mood component of depression, once cleared of behavioral influence, also incorporated input from multiple domains and was not a unidimensional construct. Several other aspects of an individual's functioning were found to substantially influence depression, such as how affect is moderated and experienced, perceived social inadequacies, and difficulties with cognitive mediation. Each of these components will vary at an individual level.

Although a straight-forward and repeatable statistical correlation is welcomed in research, such has not been the case with regard to the relationship between anosognosia and depression. The results of the current investigation concur with those of recent investigations noting the complexity of anosognosia and cognitive profiles in DAT (Agnew & Morris, 1998), but the current study also elucidated the multifaceted nature of depression above and beyond that of behavioral symptom overlap. With anosognosia and depression being multidimensional constructs, a simplistic relationship between the two seems implausible from the beginning.

A new twist in the complex relationship between depression and anosognosia became apparent on the basis of phenomenological interviews. In reviewing the empirical literature, an underlying assumption seemed to exist that anosognosia *should be*, or most likely *would be*, associated with a decrease in depression. Perhaps this belief has contributed to speculation on differences between a “reactive depression” versus major or severe depression in Alzheimer’s disease reported in the literature. If one has disease insight, then that awareness may lead to depressive symptoms. While this may be true, the assumed converse of that relationship did not hold, that having poor or no insight (i.e. anosognosia), immunizes the individual against depression. In one case study considered, it became evident that anosognosia can contribute greatly to an individual negatively perceiving personal and social interactions with others and thereby, contribute to depressive symptoms and/or depression. Based on the results from the Rorschach, the effect of having some, or at least variable intact, accurate perception combined with a degree of anosognosia was considered to possibly contribute to confusion and depression in the individual. Sabat (2002) offers an alternative concept. Perhaps this confusion expressed regarding interpersonal interactions is the “important social-psychological aspect of the afflicted person’s life” that he cautioned could be overlooked if anosognosia were to be considered “in the way fever belongs to the person diagnosed with malaria” (p.281). In the case examined, anosognosia and depression coexisted, and with good reason, in light of the ‘non-sense’ of the individual’s social-psychological world.

Considered in totality, two findings of this study seen paramount with regard to the initial questions posed. The first centers on documenting the complexity of the constructs being assessed. Not only are anosognosia, cognition, and depression multidimensional,

as supported by this investigation, but Alzheimer's disease itself possesses wide variation in clinical presentation, reflecting the unpredictability of which underlying cerebral areas are primarily affected, as well as the social environment in which they are being played out. Further, all three variables affecting individuals with Alzheimer's disease exist on a continuous and ever-changing scale, with each varying across time. An individual can have different levels of anosognosia, depression, and cognitive dysfunction associated with Alzheimer's disease and the relationship at one stage of the disease may not be the same at a later stage.

Secondly, in addition to the domains of anosognosia's memory, behavioral, and executive functions, the findings of this study support incorporating a new perspective of how anosognosia uniquely plays out in the phenomenological world of the individual. Consideration should also be given to whether the world is perceived benevolently or malevolently as a result of the individual's anosognosic status.

Perhaps the inconsistency pondered in the literature tells us just what there is to tell – not that anosognosia and depression have either a specific relationship or no relationship at all, but that they have a relationship that varies according to several important factors. The multifaceted nature of depression, cognition, and anosognosia in Alzheimer's disease must be taken into consideration in future studies to permit the complexity of the relationship among all components to be more clearly understood.

LIST OF REFERENCES

References

- Agnew, S. K., & Morris, R. G. (1998). The heterogeneity of anosognosia for memory impairment in Alzheimer's disease: a review of the literature and a proposed model. *Aging and Mental Health*, 2, 7-19.
- Aisen, P. S. (2002). Evaluation of selective COX-2 inhibitors for the treatment of Alzheimer's disease. *Journal of Pain and Symptom Management*, 23, (Suppl. 1), S35-S40.
- Aita, J. A., Reitan, R. M., & Ruth, J. M. (1947). Rorschach's test as a diagnostic aid to brain injury. *American Journal of Psychiatry*, 103, 770-779.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.–TR). Washington, DC: Author.
- Ames, L. B., Metraux, R., Rodell, J. L., & Walker, R. (1973). *Rorschach Responses in Old Age*. New York: Brunner/Mazel, Inc.
- Arguelles, S., Loewenstein, D. A., Eisdorfer, C., & Arguelles, T. (2001). Caregivers' judgments of the functional abilities of the Alzheimer's disease patient: Impact of caregivers' depression and perceived burden. *Journal of Geriatric Psychiatry & Neurology*, 14, 91-98.
- Baldwin, D. M. (2000). The inter-subjective effects of Rorschach administration method: A comparison of the Rapaport-Schafer and Exner systems administration. (Doctoral dissertation, Richard L. Conolly College of Long Island University, 1998). *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 61(1-B), 521.

- Bedard, M., Molloy, D. W., Squire, L., Minthorn-Biggs, M., Dubois, S., Lever, J. A., et al. (2003). Validity of self-reports in dementia research; The Geriatric Depression Scale. *Clinical Gerontologist*, 26, 171-175.
- Brod, M., Stewart, A. L., & Sands, L. (2000). Conceptualization of quality of life in dementia. In S. M. Albert & R. G. Lodson (Eds.), *Assessing Quality of Life in Alzheimer's Disease* (pp. 3-26). New York: Springer Publishing Co, Inc.
- Brod, M. Stewart, A. L., Sands, L., & Walton, P. (1999). Conceptualization and measurement of quality of life in dementia: The Dementia Quality of Life Instrument (DQoL). *The Gerontologist*. 39, 25-35.
- Butters, M. A., Salmon, D. A., & Butters, N. (1994). Neuropsychological assessment of dementia. In M. Storandt & G. R. VandenBos (Eds.), *Neuropsychological Assessment of Dementia and Depression* (pp. 33-59). Washington, DC: American Psychological Association.
- Church, S. (2000). The Life World of Centenarians. (Doctoral dissertation, University of Tennessee, Knoxville, 1999). *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 61(1-B), 561.
- Cummings, J. L., & Victoroff, J. L. (1990). Noncognitive neuropsychiatric syndromes in Alzheimer's disease. *Neuropsychiatry, Neuropsychology, and Behavioral Neurology*, 3, 140-158.
- De Leonni-Stanonik, M, Hubner, K. F., Smith, G. T, Hutson, R. K., Thie, J. A., Licata, C. et al. (2002). Abnormalities of selective attention and anosognosia as shown by FDG-PET. Submitted for publication.

- Dimmick, G. B. (1935). An application of the Rorschach Ink Blot Test to three clinical types of dementia praecox. *The Journal of Psychology*, 1, 61-74.
- Doerkan, H., & Kral, A. (1951). Psychological investigation into Senile Dementia. *Geriatrics*, 6, 151-163.
- Exner, J. E. (1993). *The Rorschach: A Comprehensive System Vol. 1: Basic Foundations*, 3rd ed. New York: John Wiley & Sons, Inc.
- Exner, J. E. (2001). *A Rorschach Workbook for the Comprehensive System*, 5th ed. North Carolina: Rorschach Workshops.
- Exner, J. E. (2003). *The Rorschach: A Comprehensive System*, 4th ed. New Jersey: John Wiley & Sons, Inc.
- Exner, J. E., & Weiner, I. B. (2003). Rorschach Interpretation Assistance Program (RIAP) (Version 5 for Windows) [Computer Software]. PAR Psychological Assessment Resources, Inc., Lutz, FL.
- Finn, S.E. (March, 2002). Challenges and lessons of intersubjective theory for psychological assessment. In M. L. Silverstein (Chair), *Concepts of the self: Implications for assessment*. Symposium conducted at the meeting of Society for Personality Assessment, San Antonio, TX.
- Folstein, M. R., Folstein, S., & McHugh, P. R. (1975). "Mini-Mental State": A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*, 12, 189-198.
- Gallo, J. J., & Rabins, P. V. (1999). Depression without sadness: Alternative presentations of depression in Alzheimer's disease. *American Family Physician*, 60, 820-826.

- Gross, A., Newton, R. R., & Brooks, R.B. (1990). Rorschach responses in healthy, community dwelling older adults. *Journal of Personality Assessment*, 55, 335-343.
- Hartmann, E., & Vanem, P. (2003). Rorschach administration: A comparison of the effect of two instructions given to an inpatient sample of drug addicts. *Scandinavian Journal of Psychology*, 44, 133-139.
- Hartmann, E., Wang, C. E., Berg, M., & Saether, L. (2003). Depression and vulnerability as assessed by the Rorschach method. *Journal of Personality Assessment*, 81, 242-255.
- Haupt, M., Kurz, A., & Greifenhagen, A. (1995). Depression in Alzheimer's disease: Phenomenological features and association with severity and progression of cognitive and functional impairment. *International Journal of Geriatric Psychiatry*, 10, 469-476.
- Insua, A. M., & Loza, S. M. (1986). Psychometric patterns on the Rorschach of healthy elderly persons and patients with suspected dementia. *Perceptual and Motor Skills*, 63, 931-936.
- Jha, A., Tabet, N., & Orrell, M. (2001). To tell or not to tell – comparison of older patients' reaction to their diagnosis of dementia and depression. *International Journal of Geriatric Psychiatry*, 16, 879-885.
- Kazniak, A. W., & Christenson, G. D. (1994). Differential diagnosis of dementia and depression. In M. Storandt & G. R. VandenBos (Eds.), *Neuropsychological Assessment of Dementia and Depression* (pp. 81-117). Washington, DC: American Psychological Association.

- Kitwood, T. (1997) The experience of dementia. *Aging and Mental Health*, 1, 13-22.
- Klopfer, W. G. (1974). The Rorschach and old age. *Journal of Personality Assessment*, 38, 420-422.
- Kotler-Cope, S., & Camp, J. C. (1995). Anosognosia in Alzheimer's disease. *Alzheimer Disease and Associated Disorders*, 9, 52-56.
- Levy, M. L., Cummings, J. L., Fairbanks, L. A., Bravi, D., Calvani, M., & Carta, A. (1996). Longitudinal assessment of symptoms of depression, agitation, and psychosis in 181 patients with Alzheimer's disease. *American Journal of Psychiatry*, 153, 1438-1443.
- Lind, K. Edman, A., Karlsson, I., Sjogren, M., & Wallin, A. (2002). Relationship between depressive symptomatology and the subcortical brain syndrome in dementia. *International Journal of Geriatric Psychiatry*, 17, 774-778.
- Lyketsos, C. G., & Lee, H. B. (2004). Diagnosis and treatment of depression in Alzheimer's disease: A practical update for the clinician. *Dementia and Geriatric Cognitive Disorders*, 17, 55-64.
- Mangone, C. A., Heir, D. B., Gorelick, P. B., Ganellen, R. J., Langenberg, P., Boarman, et al. (1991). Impaired insight in Alzheimer's disease. *Journal of Geriatric Psychiatry and Neurology*, 4, 189-193.
- Mayne, B. L. (1995). Mood, cognition, and drive in female nursing home residents. (Doctoral dissertation, Michigan State University, 1994). *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 66(7-B), 3019.
- McGivney, S. A., Mulvihill, M., & Taylor, B. (1994). Validating the GDS depression screen in the nursing home. *Journal of American Geriatric Society*, 42, 490-492.

- McKhann, G., Drachman, D., Folstein, M., Katzman, R., Price, D., & Stadlan, E. M. (1984). Clinical diagnosis of Alzheimer's disease: Report of the NINCDS-ADRDA work group under the auspices of Department of Health and Human Services Task Force on Alzheimer's disease. *Neurology*, 34, 939-944.
- Meins, W., Frey, A., & Thiesemann, R. (1998). Premorbid personality traits in Alzheimer's disease: Do they predispose to noncognitive behavioral symptoms? *International Psychogeriatrics*, 10, 369-378.
- Michon, A., Deweer, B., Pillon, B., Agid, Y., & Dubois, B. (1994). Relation of anosognosia to frontal lobe dysfunction in Alzheimer's disease. *Journal of Neurology, Neurosurgery, and Psychiatry*, 57, 805-809.
- Migliorelli, R., Teson, A., Sabe, L., Petracca, G., Petracchi, M., Leiguarda, R., et al. (1995). Anosognosia in Alzheimer's disease: A study of associated factors. *The Journal of Neuropsychiatry and Clinical Neurosciences*, 7, 338-334.
- Morris, R. G. (1996). A cognitive neuropsychology of Alzheimer-type dementia. In R. G. Morris (Ed.), *The Cognitive Neuropsychology of Alzheimer-type Dementia* (pp. 3-10). Oxford: Oxford University Press.
- Mouton, P. R., Martin, L. J., Calhoun, M. E., Dal Forno, G., & Price, D. L. (1998). Cognitive decline strongly correlates with cortical atrophy in Alzheimer's dementia. *Neurobiology of Aging*, 19, 371-377.
- Oglesby, L., Sims, C., Handler, L., & Dougherty, J. (2005, March). Exploring the Cognitive Triad and depression in Alzheimer's disease. Paper presented at the Society for Personality Assessment Annual Scientific Exchange and Workshops, Chicago, IL.

- Orme, J. E. (1955). Intellectual and Rorschach test performances of a group of senile dementia patients and of a group of elderly patients. *Journal of Mental Science*, 101, 863-870.
- Orme, J. E. (1958). Rorschach performances in normal old age, elderly depression, and senile dementia. *Zeitschrift fur Diagnostische Psychologie und Personlichkeitsforschung*, 6, 132-141.
- Ott, B. R., Noto, R. B., & Fogel, B. S. (1996). Apathy and loss of insight in Alzheimer's Disease: A SPECT imaging study. *Journal of Neuropsychiatry*, 8, 41-46.
- Panek, P. E., Wagner, E. E., & Kennedy-Zwergel, K. (1983). A review of projective test findings with older adults. *Journal of Personality Assessment*, 47, 562-582.
- Perry, W., & Potterat, E. (1997). Beyond personality assessment: The use of the Rorschach as a Neuropsychological instrument in patients with amnesic disorders. In J. R. Meloy, M. W. Acklin, C. B. Gacono, J. F. Murray, C. A. Peterson (Eds) . *Contemporary Rorschach Interpretation* (pp.557-574). New Jersey: Lawrence Erlbaum Associates, Inc.
- Perry, W., Potterat, E., Kaplan, E., & Jeste, D. (1996). A neuropsychological approach to the Rorschach in patients with Dementia of the Alzheimer's Type. *Assessment*, 3, 351-363.
- Piotrowski, C. (1996). The status of Exner's Comprehensive System in contemporary research. *Perceptual and Motor Skills*, 82, 1341-1342.
- Piotrowski, Z. (1937). The Rorschach ink blot method in organic disturbances of the central nervous system. *Journal of Nervous and Mental Disease*, 86, 525-575.

- Plaud, J. J., Moberg, M., & Ferraro, F. R. (1998). A review of Alzheimer's disease and dementia applied to behavioral assessment and treatment approaches. *Journal of Clinical Geropsychology, 4*, 269-300.
- Rabins, P. V., Kasper, J. D., Kleinman, L., Black, B., & Patrick, D. L. (1999). Concepts and methods in the development of the ADRQL: An instrument for assessing health-related quality of life in persons with Alzheimer's disease. *Journal of Mental Health and Aging, 5*, 33-48.
- Reed, B. R., Jagust, W. J., & Coulter, L. (1993). Anosognosia in Alzheimer's disease: Relationships to depression, cognitive function, and cerebral perfusion. *Journal of Clinical and Experimental Neuropsychology, 15*, 231-244.
- Rorschach, H. (1942). *Psychodiagnostics: A diagnostic test based on perception*. Bern: Hans Huber. (Original work published in 1921).
- Sabat, S. (2001). *The Experience of Alzheimer's Disease: Life Through a Tangled Veil*. Malden, MA: Blackwell Publishers.
- Sabat, S. (2002). Epistemological issues in the study of insight in people with Alzheimer's disease. *Dementia, 1*, 279-293.
- Scogin, F. R. (1994). Assessment of depression in older adults: A guide for practitioners. In M. Storandt & G. R. VandenBos (Eds.), *Neuropsychological Assessment of Dementia and Depression* (pp. 61-80). Washington, DC: American Psychological Association.
- Seltzer, B. Vasterling, J. J., & Buswell, A. (1995). Awareness of deficit in Alzheimer's disease: Association with psychiatric symptoms and other disease variable. *Journal of Clinical Geropsychology, 1*, 79-87.

- Seltzer, B. Vasterling, J. J., Hale, M. A., & Khurana, R. (1995). Unawareness of memory deficit in Alzheimer's disease: Relation to mood and other disease variables. *Neuropsychiatry, Neuropsychology, and Behavioral Neurology*, 8, 176-181.
- Shedler, J., Mayman, M., & Manis, M. (1993). The illusion of mental health. *American Psychologist*, 48, 1117-1131.
- Silberfeld, M., Rueda, S., Krahm, M., & Naglie, G. (2002). Content validity for dementia of three generic based health related quality of life instruments. *Quality of Life Research*, 11, 71-79.
- Smith, C. A., Henderson, V. W., McCleary, C. A., Murdock, G. A., & Buckwalter, J. G. (2000). Anosognosia and Alzheimer's Disease: The role of depressive symptoms in mediating impaired insight. *Journal of Clinical and Experimental Neuropsychology*, 22, 437-444.
- SPSS Base 10.0 Applications Guide. (1999). USA; SPSS, Inc.
- Starkstein, S. E., Chemerinski, E. A., Sabe, L., Kuzis, G. Peetracca, G. Teson, et al. (1997). Prospective longitudinal study of depression and anosognosia in Alzheimer's disease. *British Journal of Psychiatry*, 171, 47-52.
- Starkstein, S. E., Sabe, L., Chemerinski, E., Jason, L., & Leiguarda, R. (1996). Two domains of anosognosia in Alzheimer's disease. *Journal of Neurology, Neurosurgery, and Psychiatry*, 61, 485-490.
- Thomas, A. J., Perry, R., Kalaria, R. N., Oakley, A., McMeekin, W., & O'Brien, J. T. (2003). Neuropathological evidence for ischemia in the white matter of the dorsolateral prefrontal cortex in late-life depression. *International Journal of Geriatric Psychiatry*, 18, 7-13.

- Thomas, S. P., & Pollio, H. R. (2002). *Listening to Patients: A Phenomenological Approach to Nursing Research and Practice*. New York: Springer Publishing Company, Inc.
- Turner, R. S. (2003). Neurologic aspects of Alzheimer's disease. In P. A. Lichentberg, D. L. Murman, & A. M. Mellow (Eds.). *Handbook of Dementia: Psychological, Neurological, and Psychiatric Perspectives* (pp.1-24). New Jersey: John Wiley & Sons, Inc.
- Verhey, F. R., Ponds, R. W., Rozendall, N., & Jolles, J. (1995). Depression, insight, and personality changes in Alzheimer's disease and vascular dementia. *Journal of Geriatric Psychology and Neurology*, 8, 32-37.
- Verhey, F. R. J., Rozendaal, N., Ponds, R. W., & Jolles, J. (1993). Dementia, awareness, and depression. *International Journal of Geriatric Psychiatry*, 8, 851-856.
- Viglione, D. J. (2002). *Rorschach Coding Solutions: A Reference Guide for the Comprehensive System*. Author
- Weiner, I. B. (1991). Editor's note: Interscorer agreement in Rorschach research. *Journal of Personality Assessment*, 56, 1.
- Weiner, I. B. (1998). *Principles of Rorschach Interpretation*. New Jersey: Lawrence Erlbaum Associates.
- Weiner, I. B. (2003). *Principles of Rorschach Interpretations*. New Jersey: Lawrence Erlbaum Associates.
- Westen, D. (1998). The scientific legacy of Sigmund Freud: Toward a psychodynamically informed psychological science. *Psychological Bulletin*, 124, 331-371.

- Whitlatch, C. J. (2001). Including the person with dementia in family care-giving research. *Aging and Mental Health*, 5, (Suppl. 1), S20-S22.
- Wragg, R. E., & Jeste, D. V. (1989). Overview of depression and psychosis in Alzheimer's disease. *American Journal of Psychiatry*, 146, 577-587.
- Yesavage, J. A. (1988). Geriatric Depression Scale. *Psychopharmacology Bulletin*, 21, 709-711.
- Yesavage, J. A., Brink, T. L., Rose, T. L., Lum, O., Huang, V., & Adey, M. (1983). Development and validation of a geriatric depression screening scale: A preliminary report. *Journal of Psychiatric Research*, 17, 37-49.

APPENDIX

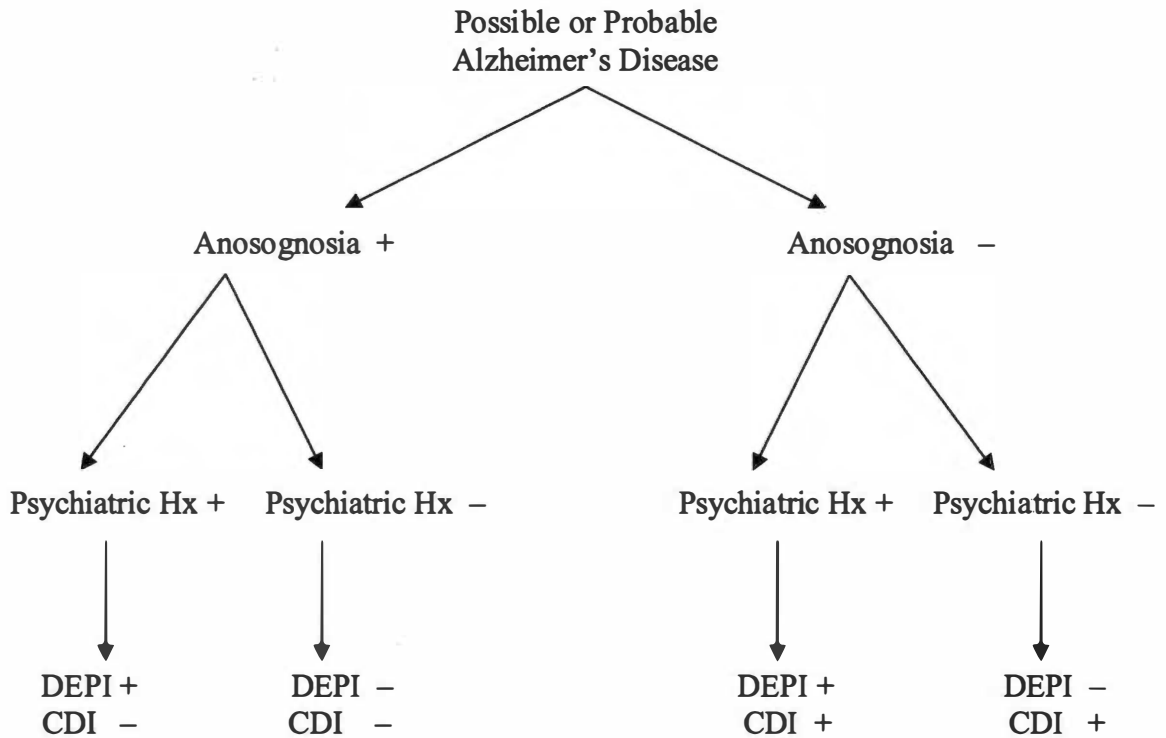


Figure A-1. Hypothetical Schema of Relationship of Depression, Coping Ability, and Anosognosia in Alzheimer's Disease. Psychiatric Hx = Psychiatric History, DEPI = Depression Index, CDI = Cognitive Deficit Index.

Ideation:

EB Per Introversive _____	Mor > 3 _____
FM + m > 6 _____	M- > 1, or M none > 0 _____
a:p – if sum of both sides > 4, and one value 2x greater _____	Intel > 5 _____
Ma:Mp – if Mp > Ma _____	WSum6 > 15 (if R ≥ 17), or > 12 (if R < 17) _____

Cognitive Mediation:

P < 4 or > 7 _____	X-% > .15 _____
OBS positive _____	S-% > .40 _____
X+% < .55 or > .85 _____	Xu% < .10 or > .20 _____
F+% < .60 _____	Lambda > 1 _____

Information Processing:

Zf < 9 or > 13 _____	DQ: DQ+ < 5 (Extra or Amb) < 7 (Intro)
Lambda < .30 or .99 _____	or, DQv > 1 (Intro, Amb) > 2 (Extra)
W:D:Dd – if, W > .5 (50% of R) D > .3 (30% of R) Dd > .2 (20% of R) _____	or, DQv/+ > 0 _____
Zd < -3.0 or > +3.0 _____	
HVI positive _____	OBS positive _____ PSV positive _____

Affect:

EB Per Extratensive _____	AFR: if Extra < .60 or > .89
FC > (CF+C) +3, or	Intro < .53 or > .78
CF+C > FC+1 _____	Amb < .53 or > .78 _____
Pure C > 1 _____	Blends: if Sum C' > 2, or
S > 2 _____	Col-Shd Bl > 0
Sum C' > WSum C _____	or, Shdg Bl ≥ 1
	or, SumShd > FM+m _____

Figure A-2. Pathological Indices for Rorschach Variables

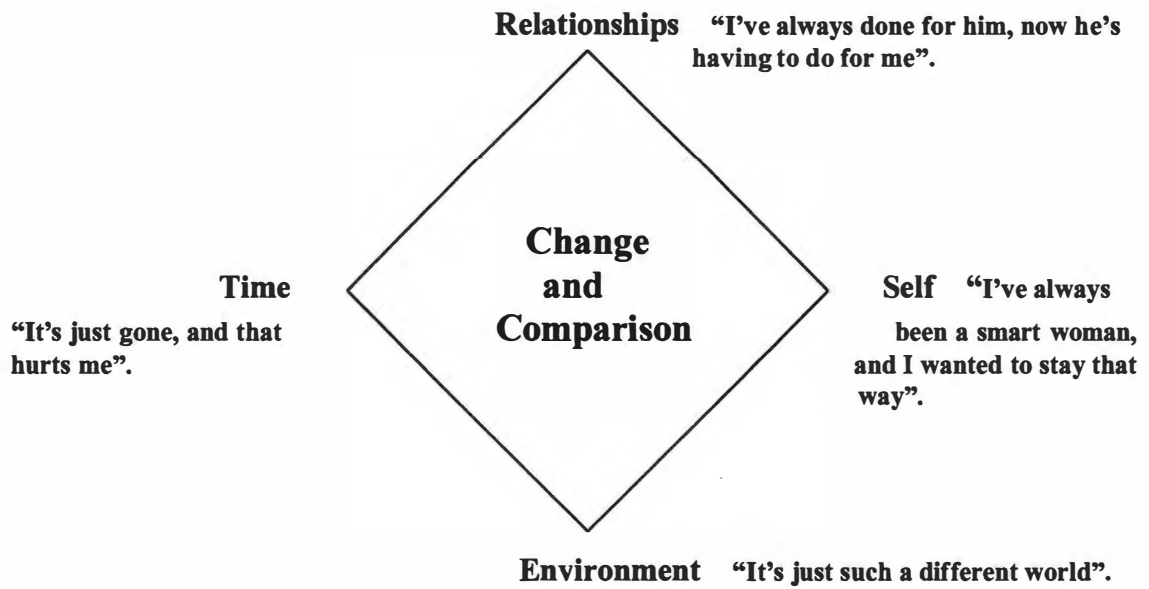


Figure A-3. Diagram of Thematic Structure

Table A-1. Kappa Statistics for Rorschach Variables

Variable	Kappa Value
Location (Loc)	.93
Developmental Quality (DQ)	.77
Form	.84
Form Quality (FQ)	.68
Movement (Mov)	.73
Achromatic Color (AchClr)	.77
Color	.77
Diffuse Shading (DShd)	.62
Vista	.54
Texture	.75
Reflection	.86
Form Dimension (FD)	.71
Pair	.84
Z score (ZScr)	.81
Overall Kappa	.76

Table A-2. Correlations of Self-Report and Projective Measures

			DEPI	CDI	GDS SR	GDS CR
Spearman's rho	DEPI	Correlation Coefficient	1.000	.194	.225	.144
		Sig. (2-tailed)	.	.218	.152	.361
		N	42	42	42	42
	CDI	Correlation Coefficient	.194	1.000	-.337*	-.088
		Sig. (2-tailed)	.218	.	.029	.579
		N	42	42	42	42
	GDS SR	Correlation Coefficient	.225	-.337*	1.000	0.456**
		Sig. (2-tailed)	.152	.029	.	.002
		N	42	42	42	42
	GDS CR	Correlation Coefficient	.144	-.088	0.456**	1.000
		Sig. (2-tailed)	.361	.579	.002	.
		N	42	42	42	42

*. Significant at the 0.05 level (2-tailed), uncorrected.

**. Significant at the 0.01 level (2-tailed), uncorrected.

Significant at the 0.008 level (2-tailed), Bonferroni corrected. DEPI = Depression Index, CDI = Coping Deficit Index, GDS-SR = Geriatric Depression Scale-Self-Report, GDS-CR = Geriatric Depression Scale-Caregiver Report

Table A-3. Correlations of Depression, CDI, and Anosognosia

		DEPI	CDI	Anosog ovrrall	
Spearman's rho	DEPI	Correlation Coefficient	1.000	.194	-.067
		Sig. (2-tailed)	.	.218	.673
		N	42	42	42
	CDI	Correlation Coefficient	.194	1.000	-.069
		Sig. (2-tailed)	.218	.	.662
		N	42	42	42
	Anosognosia	Correlation Coefficient	-.067	-.069	1.000
		Sig. (2-tailed)	.673	.662	.
		N	42	42	42

DEPI = Depression Index, CDI = Coping Deficit Index.

Table A-4. Descriptive Statistics for DEPI ANCOVA

Dependent Variable: DEPI

Anosog Dich	Psych Hx	Mean	Std. Deviation	N
negative	negative	3.500	1.2111	16
	positive	3.900	1.2867	10
	Total	3.654	1.2310	26
positive	negative	3.200	1.0328	10
	positive	3.800	1.3038	5
	Total	3.400	1.1212	15
Total	negative	3.385	1.1341	26
	positive	3.867	1.2459	15
	Total	3.561	1.1842	41

DEPI = Depression Index, Anosg Dich = Anosognosia Dichotomous,
Psych Hx = Psychiatric History

Table A-5. Tests of Between-Subjects Effects for Depression Index

Dependent Variable: DEPI

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2.804 ^a	4	.701	.474	.755
Intercept	9.083	1	9.083	6.136	.018
Mini Mental State Exam	.006	1	.006	.004	.948
Anosogognosia	.350	1	.350	.236	.630
Psychiatric History	2.111	1	2.111	1.426	.240
Anosognosia * Psychiatric History	.086	1	.086	.058	.811
Error	53.294	36	1.480		
Total	576.000	41			
Corrected Total	56.098	40			

a. R Squared = .050 (Adjusted R Squared = -.056)

Table A-6. Descriptive Statistics for CDI ANCOVA

Dependent Variable: CDI

Anosog Dich	Psych Hx	Mean	Std. Deviation	N
negative	negative	4.063	1.4818	16
	positive	3.200	1.2293	10
	Total	3.731	1.4299	26
positive	negative	3.900	.9944	10
	positive	3.600	1.3416	5
	Total	3.800	1.0823	15
Total	negative	4.000	1.2961	26
	positive	3.333	1.2344	15
	Total	3.756	1.2996	41

CDI = Coping Deficit Index, Anosog Dich = Anosognosia Dichotomous,
Psych Hx = Psychiatric History

Table A-7. Tests of Between-Subjects Effects for Coping Deficit Index

Dependent Variable: CDI

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5.246 ^a	4	1.311	.758	.560
Intercept	5.986	1	5.986	3.458	.071
Mini Mnetal State Exam	.322	1	.322	.186	.669
Anosognosia	.213	1	.213	.123	.728
Psychiatric History	3.210	1	3.210	1.854	.182
Anosognosia * Psychiatric History	.699	1	.699	.404	.529
Error	62.315	36	1.731		
Total	646.000	41			
Corrected Total	67.561	40			

a. R Squared = .078 (Adjusted R Squared = -.025)

Table A-8. Model Summary of Stepwise Linear Regression for DEPI

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.545 ^a	.298	.280	.9942	.298	16.944	1	40	.000
2	.661 ^b	.437	.408	.9015	.139	9.647	1	39	.004
3	.710 ^c	.503	.464	.8576	.067	5.096	1	38	.030

a. Predictors: (Constant), Affect

b. Predictors: (Constant), Affect, CDI

c. Predictors: (Constant), Affect, CDI, Cog Mediation

DEPI = Depression Index, CDI = Coping Deficit Index, Cog Mediation = Cognitive Mediation

Table A-9. Coefficients for Linear Regression ^a

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
		B		Beta		
1	(Constant)	2.493	.304		8.211	.000
	Affect	.533	.129	.545	4.116	.000
2	(Constant)	1.111	.523		2.123	.040
	Affect	.578	.118	.592	4.887	.000
	CDI	.343	.110	.376	3.106	.004
3	(Constant)	.264	.623		.423	.675
	Affect	.576	.113	.590	5.121	.000
	CDI	.330	.105	.361	3.131	.003
	Cog Mediation	.225	.100	.258	2.258	.030

a. Dependent Variable: DEPI.

DEPI = Depression Index, CDI = Coping Deficit Index, Cog Mediation = Cognitive Mediation

Table A-10. Model Summary of Linear Regression of Geriatric Depression Scale

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.352 ^a	.124	.102	5.5204	.124	5.665	1	40	.022

a. Predictors: (Constant), Affect

Table A-11. Descriptive Statistics for Information Processing

	Mean	Std. Deviation	Range	Minimum	Maximum	N
Lambda	.8388	.54839	2.62	.13	2.75	42
Zf	10.048	3.5335	14.0	2.0	16.0	42
W%	.3676	.20851	.83	.00	.83	42
D%	.4640	.16374	.71	.07	.78	42
Dd%	.1660	.13478	.53	.00	.53	42
Zd	-.476	3.6391	15.5	-9.0	6.5	42
DQ+	5.857	2.9843	14.0	.0	14.0	42
DQv	1.333	1.3190	6.0	.0	6.0	42
DQv/+	.857	1.0948	4.0	.0	4.0	42
PSV	.119	.3952	2.0	.0	2.0	42
OBS	.000	.0000	.0	.0	.0	42
HVI	.095	.2971	1.0	.0	1.0	42
W	6.833	3.3197	15.0	.0	15.0	42
M	1.762	1.6201	5.0	.0	5.0	42
Valid N (listwise)						42

Table A-12. Descriptive Statistics for Cognitive Mediation Variables

	Mean	Std. Deviation	Range	Minimum	Maximum	N
Popular	3.214	1.5067	6.0	.0	6.0	42
X+%	.4286	.15055	.66	.20	.86	42
F+%	.4488	.19074	.87	.13	1.00	42
X-%	.2521	.12213	.50	.00	.50	42
S-%	.0724	.15523	.67	.00	.67	42
Xu%	.3038	.11914	.47	.06	.53	42
Lambda	.8388	.54839	2.62	.13	2.75	42
WDA%	2.1907	9.29657	60.50	.50	61.00	42
XA%	2.2433	9.76237	63.50	.50	64.00	42
Valid N (listwise)						42

Table A-13. Descriptive Statistics for Ideation Variables

	Mean	Std. Deviation	Minimum	Maximum	N
R	19.833	5.3233	14.0	37.0	42
FM	3.976	2.0301	.0	10.0	42
m	2.405	1.7677	.0	7.0	42
FM+m	6.381	2.5371	1.0	12.0	42
Morbid	2.024	1.9937	.0	6.0	42
M minus	.381	.6608	.0	2.0	42
M none	.000	.0000	.0	.0	42
2AB+Art+Ay	1.571	2.8124	.0	13.0	42
Wt Sum6	32.024	22.9033	6.0	93.0	42
Active Mov	3.929	2.5509	.0	13.0	42
Pass Mov	4.238	2.4175	.0	10.0	42
Ma	1.190	1.3111	.0	5.0	42
Mp	.571	.9663	.0	4.0	42
Level 2	1.976	2.5035	.0	10.0	42
Sum 6	9.548	5.9107	1.0	24.0	42
Valid N (listwise)					42

Table A-14. Comparison of Means in Alzheimer Group to Exner Norms

Rorschach Variable	Alzheimer Group	Exner Norm
R	19.83	22.67
FM	3.97	3.70
m	2.41	1.12
FM+m	6.38	4.82
Morbid	2.02	.70
M minus	.38	.03
M none	.00	.01
2AB+Art+Ay	1.57	1.55
Wt Sum6	32.04	3.28
Active Mov	3.93	6.48
Pass Mov	4.24	2.69
Ma	1.19	3.04
Mp	.57	1.31
Level 2	1.98	.03
Sum 6	9.55	1.62
Popular	3.21	6.89
X+%	.43	.79
F+%	.45	.71
X-%	.25	.07
S-%	.07	.08
Xu%	.30	.14
Lambda	.84	.58
Zf	10.05	11.81
W ratio	.37	.38
D ratio	.46	.57
Dd ratio	.17	.05
Zd	-.48	.72
DQ+	5.86	7.31
DQv	1.33	1.30
DQv/+	.86	.41
PSV	.12	.05
W	6.83	8.55
M	1.77	4.31

Table A-15. Descriptive Statistics of Geriatric Depression Scale

	N	Mean	Std. Deviation	Minimu m	Maximu m
GDS-SR	42	7.095	5.8260	.0	25.0
GDS- CR	42	13.357	7.4041	1.0	28.0

GDS-SR = Geriatric Depression Scale – Self-Report

GDS-CR = Geriatric Depression Scale – Caregiver Report

Table A-16. Wilcoxon Signed Ranks Test for Geriatric Depression Scale

		N	Mean Rank	Sum of Ranks
GDS CR - GDS SR	Negative Ranks	5 ^a	10.90	54.50
	Positive Ranks	35 ^b	21.87	765.50
	Ties	2 ^c		
	Total	42		

a. GDS CR < GDS SR

b. GDS CR > GDS SR

c. GDS CR = GDS SR

GDS-SR = Geriatric Depression Scale - Self-Report,

GDS-CR = Geriatric Depression Score - Caregiver Report

**Table A-17. Test Statistics for
Wilcoxon Signed Ranks Test**

	GDS CR - GDS SR
Z	-4.785 ^a
Asymp. Sig. (2-tailed)	.000

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test.

GDS-SR = Geriatric Depression Scale

- Self-Report, GDS-CR = Geriatric
Depression Scale-Caregiver Report

VITA

Lisa Oglesby was born and raised in various parts of Tennessee. She graduated from the University of Tennessee, Knoxville with a Bachelor's degree in Psychology in 1977, followed by a Bachelor of Science in Physical Therapy from the University of Tennessee Medical Center, Memphis in 1979. After practicing as a physical therapist for several years, she became a member of the Tennessee Air National Guard as a navigator on a KC-135 aircraft. In 1994, she received a Doctor of Philosophy in Education with a major in Exercise Science.

Interest in the psychological as well as the physical functioning of individuals led to the pursuit of a Doctor of Philosophy in Psychology with primary focus on psychodynamic theory within a biopsychosocial framework centering on adult development and aging issues.

