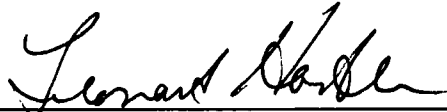


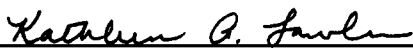
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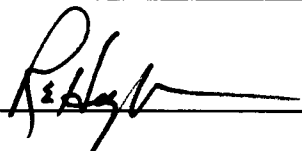


Leonard Handler, Major Professor

We have read this dissertation
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and Dean of The Graduate School

RHEUMATOID ARTHRITIS AND OBJECT RELATIONS

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Erlate Malveira Ascencao

August 1995

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DEDICATION

I would like to dedicate this dissertation to my parents for giving me life and teaching me how to live it. To my mother, Mrs. Adelia Malveira Ascencao, for all her love, trust, support, and encouragement to pursue my dreams, without which this work would not have been possible. To the memory of my father, Alvaro Azevedo e Ascencao, for teaching me to be free and that real freedom is in the mind.

DEDICATÓRIA

Eu gostaria de dedicar esta tese aos meus pais por terem me dado a vida e me ensinado a vivê-la. À minha mãe, Adelia Malveira Ascensão, por seu amor, confiança, apoio, e encorajamento para que eu buscasse a realização dos meus sonhos. Sem ela os meus sonhos e consequentemente este trabalho de tese jamais teriam sido possíveis. À memória de meu pai, Alvaro Azevedo e Ascensão, por ter me ensinado a ser livre e que a verdadeira liberdade reside no pensamento.

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ABSTRACT

The purpose of this study was to explore the object relations of Rheumatoid Arthritis (RA) patients in addition to examining the association, if any, of Alexithymia and RA for these patients. The sample was comprised of 50 subjects (20 RA, 10 UC, and 20 NP or Non-psychosomatic controls). Two- and three-group comparisons were made, using Analysis of Variance, Discriminate Analysis, and non-parametric Tests (Chi-Square and Fisher's Exact Probability Test).

The results show that hypothesis 1 was only partially confirmed since only 3 Westen Object Relations Scales -- the Capacity for Emotional Investment and Moral Standards (EI), Complexity of Representations of People (CR) , and Affect-tone of Relationship Paradigms (AT) -- showed statistically significant differences for RA and NP controls. The BORI Subscales failed to distinguish the 3 groups. Furthermore, RA and UC subjects differed at a statistically significant level on Affect-tone of Relationship Paradigms. The RAs turned out to be a bimodal group consisting of a less differentiated (below average) subgroup and a more differentiated (average or above) Object Relations subgroup on all 3 Westen Scales (CR, EI, and AT). The less differentiated RA subgroup may benefit more from psychotherapy since they may be more vulnerable to psychological stress. Further, only Affect-tone distinguished the 3 groups at a statistically significant level. The RA group was more heterogeneous and tended to score the lowest of the 3 groups on this variable (60% of the RAs scored below average as compared to 20% UCs and 10% NP controls.) These results suggest that there seems

there seems to be no specific pattern of object relations for all psychosomatic-autoimmune patients, that RA patients differ from non-psychosomatic controls in object relations, and that, within the RA group, some subjects are more and others are less differentiated in terms of object relations. Hypothesis 2 was rejected since RA did not differ statistically from the NP subjects. However, in the three-group-comparison, the RAs were the least and the UCs the most alexithymic subjects of all 3 groups. These results indicate that not all psychosomatic-autoimmune patients are alexithymic and that alexithymia is not the problem of RA patients.

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CHAPTER I

THE PROBLEM

Rheumatoid Arthritis (RA) is one of more than 100 types of arthritis affecting about seven million people in the United States, at any age (more commonly from the 20s to the 50s), but it tends to affect women three times more often than men.

It is a systemic disease. That is it is a disease which affects the whole body and the sense of well being, causing pain, stiffness, warmth, redness, and swelling in the joints. These symptoms are caused by a general process called inflammation. The disease process in the joints is called synovitis because the synovium membrane which lines the joint becomes inflamed. The inflammation causes the joint to appear swollen and feel both painful and warm. Further, given that RA is a chronic disease (it may last a lifetime), synovitis may damage the entire joint. This inflammation can also affect other areas of the body muscles, heart or lungs, causing chest pain or difficulty in breathing; skin, causing dryness; blood vessels, nerves, and eyes, causing mild pain in the eyes. Other symptoms of RA may include fatigue, weight loss, and a slight fever.

The course of RA is difficult to predict; it is an illness of ups and downs. That is, there are periods (called remissions) in which the pain and stiffness diminish or disappear even in severe cases. Such periods may last for weeks, months, or years. On the other hand, RA patients may have other periods when the pain and stiffness become worse. These are called flare-ups or exacerbations for which there is no apparent cause. However, these exacerbations usually follow physical or emotional stress. As with

remission, there is no reliable way of predicting how long a flare-up will last (Arthritis Foundation, 1984, 1990).

Rheumatoid Arthritis is considered a psychosomatic disorder. Researchers have been investigating the psychological factors associated with RA for the past forty years. These studies indicate that psychological factors play a role in the development of RA (Anderson, Brandley, Young, McDaniel, and Wise, 1985; Friedman and Booth-Kewley, 1987; Gallagher, Slife, Rose, and Okarma, 1983; Rimon, 1981). Further, since RA has been found to involve the immune system (Baker, 1982; Feingenbaum, Masi, and Kaplan, 1979; Justice, 1988; Levitan, 1981; Meyerowitz, Jacox, and Hess, 1966; Rimon, 1969; Rogers, 1989) psychological factors are likely to be important in the course and in the clinical manifestations of RA, regardless of the etiology of the disease (Friedman & Booth-Kewley, 1987). Finally, Genest (1983) has pointed out that current understanding of the psychological factors that mediate functional capacity in RA patients is still very limited. Even though other psychosomatic disorders (i.e., coronary disorders) have been receiving more attention with the development of the health psychology specialty, the interest of psychologists in RA seems to have decreased. For instance, out of ten recent survey volumes of health psychology, only five make reference to RA. Genest claims that this is not because psychologists have neglected research on the role of psychological factors in RA patients, but rather because the work remains to be done. (Genest, 1983).

RA patients can only be understood within the total life dynamics in which they live and operate (Rimon, 1981). Hence, physiological, psychological, and sociological approaches should be integrated into a comprehensive approach to a person as a

biological organism with a personality which unfolds within the dynamics of their social system. Such an approach may help the RA patient deal with the idea of having a chronic disease, comply with treatment, adjust psychosocially, and reduce the occurrence of flare-ups by reducing and learning how to cope with stress (Friedman & Booth-Kewley, 1987; Gallagher et al., 1983; Genest 1983; Rimon, 1981; Rogers, 1989).

The main purpose of this study was to examine the object relations of RA patients as compared to two control groups (one composed of patients diagnosed with other psychosomatic disorders and the other consisting of patients who have never been diagnosed with one of the latter disorders). Object relations theory focuses on how a person perceives and responds to interpersonal interactions and how such perceptions and interactions are psychically represented. Basically, object relations are an essential component of personality structure, as the formation of an identity is based on early interactions with others in particular those early mother-child interchanges which are later enacted with other relationships (Erikson, 1959; Fairbairn, 1952; Guntrip, 1960, 1961; Klein, 1948, 1975; Kohut, 1971; Mahler, 1968, 1975; Spitz, 1965; Sullivan, 1953 and Winnicott, 1965). The object relations aspect of personality may influence the RA patient's response to stimuli, stress and life changes, their emotional response and the level of arousal to such stimuli and life events as well as the degree to which affect is contained or inadequately expressed via speech, motor activity or other means (Rees, 1983). Further, it may also affect the way in which the patient perceives stresses and significant life events as threats and the way in which such persons deal with stress by defense mechanisms which can either relieve or aggravate the impact of such potential

stress upon the organism (Rimon, 1986). Therefore, it seems important to assess and study the object relations of patients suffering from Rheumatoid Arthritis with additional information about alexithymia, sociodemographic and disease information variables on these patients.

CHAPTER II

LITERATURE REVIEW

The present review is organized into four sections: (a) a brief description of the research models on the etiology of RA; (background setting events and psychoanalytic models); (b) a review of the empirical data on the relationship between personality and RA, (c) a review of the research on alexithymia and its relationship with RA, and (d) an overview of the additional correlates of RA (age, gender, marital status, race, socioeconomic status (SES), chronicity, and presence or absence of rheumatoid factor, all of which have been found to be relevant to the psychological aspects of RA patients.

A. ETIOLOGY OF RHEUMATOID ARTHRITIS

Background Setting Events

This section of the present review will consist of two parts: (I) A brief summary of the background setting events which are necessary but not sufficient factors to fully explain the development of RA factor, which are beyond the scope of this study. These are studies in the area of biological factors, immunological factors, psychoneuroimmunology, and life events. (II) This part includes a description of psychodynamic theoretical models (Early Psychoanalytic and Object Relations) as well as related research findings.

Biological Factors

In the 1970s, serologic research suggested the Epstein-Barr virus (EBV) or a bacterium caused RA (Alpaugh & Tan, 1975). However, subsequent studies failed to support the infection hypothesis (Depper & Zvaifler, 1980). However, later research development has shed new light on the infection hypothesis. Researchers have isolated a small virus from the synovial tissue of a patient with RA that when injected into neonatal mice caused a syndrome of Arthritis in those animals. This parvovirus, named RA-1, is a part of a group of viruses which are small and difficult to isolate. Although this seems to be a promising research development, it still requires further research (Simpson et al., 1984). According to the latest report by the Arthritis Foundation (1990), scientists still suspect that some agent, like a virus, may trigger Rheumatoid Arthritis. In spite of the latter hypothesis, they do not believe that every person who becomes infected with this "virus" will develop RA.

Genetic factors also seem to play a role in the susceptibility for developing RA. Current research indicate that this "virus or bacterium" only causes RA in individuals who have a genetic, or inherited, tendency for this illness (Arthritis Foundation, 1983, 1984, 1990). More specifically, researchers suggest that this "virus" may either trigger an immunological response, causing RA, or it can be directly involved in infecting the joint. The genetic susceptibility to RA is associated with the presence of the Human Leukocyte Antigen, best known as HLA-DR4, in the tissues of people who have been diagnosed with Rheumatoid Arthritis. Here it is important to point out that HLA-DR4 is found in three fourths of RA patients in comparison with one-fourth of the general

population. Therefore, not all people with the HLA-DR4 genetic marker will develop RA, but if they become infected with the "virus" they will be more likely to develop it than those who do not have the marker (Arthritis Foundation, 1984, 1990; Miller & Glass, 1981).

Immunological Factors

The immune system is an extremely complex surveillance system that guards the body by recognizing and removing bacteria, viruses, cancer cells or fungi, and other hazardous foreign substances or antigens (Pomerleau & Rodin, 1986). When such antigens are detected, the immune system responds by stimulating various types of lymphocytes, to attack and destroy the invaders. There are different types of lymphocytes, with different actions. There are the B lymphocytes, which produce antibodies that combine with specific antigens (i.e., bacteria) and inactivate them. In addition, there are the T lymphocytes, which regulate the production of antibodies by B lymphocytes. The T lymphocytes are subdivided into three categories: (1) The helper cells, which stimulate B lymphocytes to produce antibodies; (2) the suppressor cells, which turn off the production by antibodies by the B lymphocytes, and (3) the cytotoxic cells, which can destroy cells containing certain antigens. These lymphocytes work together to reach a balance response when needed and to turn it off when the potential threat is no longer serious. The action of these lymphocytes and the immune system responses are regulated in an extremely complex process. If the immune system is suppressed, people become more vulnerable to a variety of infections, cancer, and

autoimmune diseases, such as rheumatoid arthritis, systemic lupus erythematosus, ulcerative colitis, multiple sclerosis, among others. In autoimmune diseases (i.e., RA) the immunological process is reversed. That is, a breakdown in the body's system of checks and balances may cause the immune system to become overactive, turning on itself to attack and destroy the body tissues (self) which are mistaken for antigens (nonself) or foreign substances (Baltrusch & Waltz, 1985; Jemmott & Locke, 1984; Justice, 1988; Pomerleau & Rodin, 1986; Rogers, 1989). Specifically, in RA the lack of control of inflammation probably comes from this malfunctioning of the immune system, where self attacks self as if it were nonself. That is, the immune system errs at some point, and by mistake attacks healthy tissues as if they were antigens (Arthritis Foundation, 1984).

Research studies on the malfunctioning of the immune system and the development of RA are based upon three hypotheses (Rodnan, 1983; Keller, 1981). The extravascular immune complex hypothesis postulates an interaction between antigens and antibodies in synovial tissues, cartilage, and fluid. The antigens are considered to be part of articular tissue or by-products of the inflammatory process (such as collagen, cartilage, fibrinogen, or fibrin). The antigen-antibody interaction in the joint tissues is believed to trigger the complement sequence, increase vascular permeability, causing an accumulation of cellular blood elements. Polymorphonuclear leukocytes (attacked by complement derived chomataetic factors) release enzymes that cause inflammation, as well as tissue damage (Weissman, 1972). Researchers have found large amounts of

rheumatoid factor (an abnormal antibody) in the blood of RA patients (Arthritis Foundation, 1984).

The cellular hypersensitivity hypothesis proposes the presence of activated T lymphocytes in rheumatoid synovium and of soluble factors derived from T cells (called lymphokines) in the synovial fluid. Support for this hypothesis comes from the clinical improvement associated with removal of T lymphocytes by thoracic duct drainage or total nodal irradiation (Pearson, 1975).

Finally, the immune system imbalance hypothesis postulates a relative lack of suppressor T lymphocytes able to control helper T lymphocytes. This mechanism is believed to exist in RA as well as in other autoimmune diseases (Reinherz, Rubenstein, Geha, Stoelkauskas, Rosen, and Schlossman, 1979).

Psychoneuroimmunology

Psychoneuroimmunology can be defined as the study of immune system regulation by the central nervous system (Ader, 1981; Rogers, Dubey, and Reich, 1979; Udelman & Udelman, 1983). Research studies on the relationship between stress and immune system functioning have shown an interaction among the central nervous system, the endocrine and the immune system (Amkraut & Solomon, 1974; Amkraut, Solomon and Kraemer, 1971; Solomon, 1970, 1981).

Research shows that while diet, age, heredity, and general health all affect the functioning of the immune system, stress also has a remarkable influence on immunocompetence, which is defined as the immune system's ability to defend the body

successfully. According to research studies, the immune system has such a vital role in the maintenance of homeostasis and health that any malfunction in immunocompetence will have direct implications for the development of disease, especially in those diseases intimately associated with immunologic mechanisms (i.e., infection, malignancy, and auto-immune disease) such as rheumatoid arthritis (Ader, 1981; Arnetz, Wasserman, Patrin, Brenner, and Levi, 1987; Irwin Daniels, Bloom, Smith, and Weiner, 1989; Jemmott & Locke, 1984; Josselyn, 1965; Martin, 1987).

Researchers still do not know exactly how stress suppresses immunocompetence. However, several lines of evidence suggest that endocrine responses to stress may play a primary role (Arthur, 1987; Martin, 1987). According to Selye's General Adaptation Syndrome (GAS) during perceived stressful situations the sympathetic nervous system (SNS) is aroused, triggering the release of stress hormones (corticosteroid, epinephrine, and norepinephrine). These stress hormones are believed to function to suppress the immune system. It seems possible that this process may increase people's susceptibility to disease during stressful times.

In reviewing the literature in this area, Justice (1988) has concluded that patients with RA are very sensitive to stress, which often produces flare-ups, in particular. RA is believed to involve excessive levels of a neuropeptide called substance P. This short protein or protein fragment is secreted from the ends of nerve fibers into joints and seems to contribute to joint damage. Perceived stressful situations produce an arousal of the sympathetic nervous system, thereby increasing the activity of substance P. Here it is important to note that substance P is also found in the immune system and may be

the link between the immune system and the nervous system. Further, prostaglandin (another chemical messenger) has also been found in high levels in the inflamed joints of people with RA (Justice, 1988).

Some researchers have focused on decreases in immunocompetence among non-humans and humans subsequent to stressful events. Research studies of non-human animals experimentally manipulated by stressors (such as separation from others, isolation from peers, exposure to loud noise, and electric shock) have found that such stressors can markedly reduce immunocompetence by suppressing the activity of the lymphocytes (Borysenko & Borysenko, 1982; Esterling & Rabin, 1987; Laudenslager, Reite, and Harbeck, 1982; Monjan & Collector, 1977; Rogers, 1989). More specifically, RA has been found to be linked to experimentally induced stress in rats (Amkrat, Solomon, and Kraenes, 1971; Keller, Weiss, Schleifer, Miller, and Stein, 1981).

The limited research with human subjects has revealed similar results as that in animals. In a review of the literature, Anderson, Bradley, Young, and McDaniel (1985) have pointed out that there is only one study linking psychological stress, depressed immune system function, and the onset of RA (Hendrie, Paraskevas, Barager, & Adamson, 1971). These researchers compared immunoglobulin levels and life change scores in polyarthritis patients who had a history of joint disease of less than six months duration, and hospital staff controls. The sample size was not stated in the article. However, since the criteria was for polyarthritis patients (and RA eventually affects all the major joints), there is a chance that most patients were not diagnosed with RA *per se*. The results indicated that those polyarthritis patients whose immunoglobulin levels

were elevated produced a mean life change score (for the year prior to onset of arthritis) that was almost three times greater than the controls (Hendrie, Paraskevas, Baracar, and Adamson, 1971). This psychoneuro-immunological response in RA patients can be supported by the literature on stressful life events.

Stressful Life Events: Immune Response to Stress

For the last five decades, research evidence has indicated that emotionally traumatic life events, such as the loss of a key person by death or separation, divorce, marital crises/dysfunction, sexual problems, financial difficulties, serious illness of a family member, surgery, anger, conflicts with the authorities, intense competition, and other kinds of personal worries, frequently precede the first symptoms of RA, precipitate its onset, as well as determine its course (Alexander, 1950; Baker, 1982; Cannon, 1934; Cobb, Bauer, and Whiting, 1939; Cobb, Schull, Harburg, and Kasl, 1969; Crown, Brown, and Fleming, 1975; Geist, 1966; Gottschalk, Serota, and Shapiro, 1950; Horvath & Hollander, 1949; King, 1955; Levitan, 1981; Medsger & Robinson, 1972; Meyerowitz, 1968; Moos & Enger, 1962; Rimon, 1969, 1981; Rimon & Laakso, 1985; Rutter, 1979; Sochet, Lisansky, Schubart, Fioeco, Kurland, and Pope, 1969; Selye, 1956; Southworth, 1959; Weiner, 1977; Wyatt, 1969). However, even though research shows that these life situations can be relevant and important in the onset of RA, there is no evidence that any specific life event triggers the onset of the disease. The effect seems to vary from patient to patient with RA. All we know is that "stressful life events" seem to precede and

precipitate the onset and course of RA (Rees, 1983; Rimon, 1969; Rimon & Laakso, 1985; Sochet et al.; 1969; Wyatt, 1969).

Contemporary research in health psychology indicates that an adequate definition of stress should always take into account the interplay between external stressors and people's physiological, psychological and behavioral responses to them (Mason, 1971; 1975; Taylor, 1986). The pioneer research in the area of response to stress is the work of Hans Selye (1956, 1976, 1983). His observations of how rats responded to stressors led him to formulate the concept of the General Adaptation Syndrome (GAS). According to this concept, when an organism is confronted with a stressor, its body mobilizes for action. This mobilization effort is mediated by the sympathetic nervous system and it works basically through the action of specific stress hormones on the body's muscles and organ systems. The response to stress is nonspecific. That is, the same physiological reaction occurs regardless of the stressor. This reaction follows the sequence of "alerting response," "resistance response," and "exhaustion". Hence, GAS is a defense designed to protect the body from environmental challenges. In addition, Selye pointed out that prolonged and repeated exposure to stress (that is not adequately managed or reduced) can result in tissue damage (i.e., bleeding ulcers), increased susceptibility to disease, and even death in very extreme cases (Selye, 1956, 1976, 1983).

Mason (1971) disagreed with Selye's notion of the nonspecificity of the stress response. Mason's explanation for a general physiological response (in laboratory animals exposed to several stressors) was that the stress situations all share the element of emotional stress. In a later study, Mason (1975) maintained that emotional stimuli are

some of the most potent and prevalent natural stimuli capable of increasing pituitary-adrenal cortical activity. He hypothesized that it is this emotional reaction that produces the illusion of a generalized response to stress. Hence, he believes, the nonspecificity of response is an experimental artifact and is most likely to be a specific response. Further, he proposes that stress can be conceptualized as analogous to pathogens which are factors that can, but do not inevitably, cause disease (Mason, 1971, 1975).

Selye has been criticized for not taking into account the role of cognitive factors in stress response. In Lazarus' view (1984), cognitive variables that affect the interpretation of stressful events are more important than the events themselves. Hence, it is not the environmental events or the person's physiological response that define stress, but rather the person's perception of the psychological situation. This view proposes that when a person confronts situations that may be potentially stressful, the person first engages in a process of primary appraisal to determine whether the event is positive, neutral or negative. If the event is perceived by the person as positive, it may imply that the person knows or is learning new ways to cope with or neutralize the stressful event. However, if the event is perceived as negative, further appraisal is done to determine how harmful, threatening, or challenging it is.

Once the primary appraisal is completed, the person engages in a secondary appraisal to determine whether or not their coping abilities and resources will allow them to overcome the harm of threat and successfully meet the challenge. The end result (actual amount of stress experienced) represents a balance between the primary and secondary appraisals. If harm or threat is perceived as high, the individual is likely to

experience a high degree of stress. Conversely, if harm or threat can be perceived as manageable by the person, then they may experience less stress (Lazarus, 1984; Lazarus & Folkman, 1984).

In sum, in addition to the physiological, there is the psychological response of the immune system to stress which can be described as follows:

Cognitive: appraising the events (as harmful, threatening, or challenging), and responding to them.

Emotional: feelings (such as anxiety, irritability, anger, embarrassment, depression, helplessness, and hostility). Anxiety is one of the most damaging emotional reactions. It is especially likely to develop when people perceive a marked imbalance between the threat posed by a stressor and their potential resources to cope with it. People who are unable to cope effectively with anxiety become physically taxed, making them vulnerable to disease (Aden 1981; Arnetz, et al., 1987; Jemmott, Borysenko, McClelland, Chapman, Meyer, and Benson, 1983; Rogers, 1989; Taylor, 1986).

Behavioral: there are a myriad of possible behavioral responses to stress, including some kind of assertive action (fight) to confront the stressor, withdrawal from a threatening or harmful situation (flight), and adapting to the source of stress (Taylor, 1986).

In summary, the effects of stress in people involve not only the physiological responses of their bodies but also how they think, feel, and behave. These models, together, shed light on our understanding of stress and its association to diseases - especially the so-called psychosomatic and/or auto-immune diseases.

The literature on psychoneuroimmunology has been included in this review due to its importance in understanding RA patients' response to stress. However, it is beyond the scope of this study to deal with this model, instead it focused on the object relations of the patients.

Psychoanalytic Models

Research into the psychological aspects of Rheumatoid Arthritis has proceeded for the past four decades (Alexander, 1950, 1968; Anderson et al., 1985; Gallagher, Slife, Rose, and Okarma, 1983; Gardiner, 1980; Hoffman, 1974; King, 1955; McFarlane, Kalvey, and Brooks, 1987; Meyerowitz, 1966; Moos, 1964). The second part of this review represents an attempt to psychodynamically account for the development of Rheumatoid Arthritis.

Conversion Hysteria

Psychoanalysis contributed to the understanding of psychosomatic relationships by providing a procedure -- free association -- which made it possible to study sequences connecting psychological and physiological phenomena. Freud's discovery of unconscious mental phenomena and the process of repression threw new light on many bodily expressions of mental phenomena. These mental tensions can be discharged somatically into (1) muscular activities leading to a change of the body in relation to its environment; (2) laughter, crying, screaming, or speech, (3) respiratory, cardiovascular, and other visceral symptoms. The end effects of these modes of discharge are

subjectively experienced as feelings, affects, or emotions. These affects and emotions can be repressed and then are no longer experienced as such, even though the processes discharging them into specific somatic systems can still happen. In his study of the unconscious, Freud (1910) found that strongly charged but repressed fantasies, conflicts, and memories found distorted expression in somatic symptoms and in impairments of somatic functions. For Freud these somatic symptoms were expressions in symbolic body language, of psychological conflicts. They were called "conversion symptoms." In other words, the conflict was "converted" from a psychological one into a disorder manifesting itself mainly through somatic symptoms which had no identifiable organic pathological correlate. This could be illustrated by hysterical paralysis, hysterical vomiting, and hysterical amnesia (Freud, 1910). Therefore, according to the Freudian model, Rheumatoid Arthritis symptoms are the product of neurotic conflict and represent affects and fantasies, with hysterical conversion as the mechanism of symptom formation. The latter model has been reformulated by Alexander (1950) who suggested that repression of affect alone can produce chronic somatic discharge powerful enough to create pathological tissue changes in affected organ systems of patients with psychosomatic disorders such as Rheumatoid Arthritis (Alexander, 1950).

Specificity Theory

Alexander's psychosomatic model proposes a causal association between psychodynamic processes developed in early life based on and related to unconscious conflicts - and of ego defense mechanisms utilized in response. The model posits the

presence of a life event or situation immediately preceding the onset of Rheumatoid Arthritis which is emotionally significant to the person and will reactivate underlying conflicts, as well as a factor, which Alexander termed the X factor, which genetically predisposed organ susceptibility. Alexander assumed that people who develop RA early in life learn to suppress their aggression in various ways. A breakdown of the effective defense mechanisms would lead to increased muscular tension and joint damage which, in turn, would cause RA. More specifically, he asserts that RA patients tend to react to emotional stimuli by unconscious muscular contractions which also activate the opposing muscles, forming what he called a "psychological straitjacket." Over time, the repetition of this pattern of muscular reaction may injure the person's joints and intensify their susceptibility to RA (Alexander, 1950). Along this line, Josselyn (1965) has suggested that the increased tension in a joint may make the joint particularly susceptible to infection. Apparently, once an infection is introduced, tension in the joint increases even further. Consequently, arthritic changes in the joints may occur as part of the body's defense against the infection and pain (Josselyn, 1965).

In short, Alexander's model is based on the assumption that RA is at least partially a result of increased muscle tension in the joints. However, there is very limited empirical evidence to support this assumption. This model also fails to account for immunological changes which are believed to take place in RA. Further, although research shows that life situations can be relevant and important at the onset of RA, there is no clear evidence that any specific life event triggers the onset of the disease. The "effect" seems to vary from patient to patient (with RA) and their perception of how

stressful the event/situation is (Rimon, 1969, 1986; Rimon & Laakso, 1985; Schochet et al., 1969; Wyatt, 1969).

Moos and Engel (1962) found higher stress-related muscle tension in rheumatoid arthritics than in hypertensives. However, this was true only in muscles located near the affected joints, as opposed to muscles in the other parts of the body. Conversely, Anderson et al., (1981), who also have studied patients with hypertension, found even higher stress-related reactions in hypertensives than in RA patients. Therefore, the controversy remains as to whether muscle tension is the mediator between stress and RA onset and flare-ups.

Finally, it is important to point out the pros and cons of Alexander's model for RA. Even though his claims for specificity of stimulus, pathway and response have generated great controversy and have lacked validation, it should be pointed out that his formulations were comprehensive and the X factors (i.e., genetic marker HLA-DR 4, unknown until recently) may be related to genetic enzymological, biochemical and physiological processes. In addition, the strong emotions accompanying the activated response to perceived life events may be mediated by hormonal, autonomic and neuromuscular mechanisms to produce the dysfunction in the target organs, such as the joints for RA patients. In sum, the classical analytic orientation has attempted to explain psychosomatic symptom formation in terms of intrapsychic conflict and repression. In other words, when "conflicts" are not dealt with and expressed verbally, they will emerge via somatization.

Object Relations Theory

The object relations theory represents a development in psychoanalytic thought based on the role of early relationships and how these relationships then continue as objects, or images, within the mind as we grow up. Objects are people, or parts of people, to whom the individual relates. These units of object relations are assumed to exist within everyone and they are composed of stable and enduring representations or images of self linked to images of objects by intense affects. This explains why infants are believed to relate only to separate parts of people since the ability to perceive the parts as belonging to a whole person, with both their good and bad aspects, has to be learned. Only a whole person can be recognized as having their own feelings, needs (and so on) which ought to be respected. Therefore, only a whole person can be the object of a mature relationship. For instance, a positive internal object relation might consist of a mental representation of the person's self as a vulnerable and trusting child relating to a strong, caring, and nurturing parent (i.e., the mother) linked together by an affective experience of love and warmth. On the other hand, a negative internalized object relationship unit might be characterized by the hatred and rage a victimized child would feel toward a sadistic parent. These images would account for why different individuals would experience the same situation in entirely different ways. Thus, the person who has internalized a predominantly benevolent object relating to a healthy self will experience a blow to their self-esteem (such as being diagnosed with Rheumatoid Arthritis) quite differently from someone who has a basic identity as a victim, suffering under a cruel object. Disturbed object relations in childhood may play a role in

psychosomatic disorders, such as Rheumatoid Arthritis and colitis, which may reflect problems in earlier development - possibly in the first two years of life (Taylor, 1987). Hence, the goal of psychoanalytic therapy from an object relations perspective is to bring the fundamental units of personality (or object relationships) to the surface so that they can be exposed to further learning, and adaptation, and can be integrated into the entire adult personality in a healthier way. In other words, the patient can try to resolve the relationship with "bad or persecutory" objects they internalized so that they can form mature relationships with people and not just use them as vehicles for their own gratification. In reviewing the literature on the psychological aspects of Rheumatoid Arthritis, Anderson et al., (1985) concluded that RA patients seem to have a pattern of disturbed interpersonal relationships, both parental and marital, which are major stressors for them. This, in turn, may play a role in the onset and course of the disease.

In order to understand how object relations can be used as a model to explain some of the psychological difficulties found in RA patients, it is important to provide some background on the significant development of object relations theory. The roots of object relations theory are found in classical Freudian psychoanalysis. Freud first used the term **object** in 1905 in his **Three Essays on Sexuality**. In this work **object** refers to a person in the external environment who is the focus of instinctual interest. Freud developed the meaning of object further in **On Narcissism** in 1914. At this point, he discovered that a patient's own ego could become an internal object for his libidinal attachment. Such narcissistic patients experience love objects as aspects of themselves so that their external objects are experienced as self-objects. Later on, (1917) in **Mourning and Melancholia**,

Freud extended the importance of internal objects even further by identifying their role in the process of mourning and depression. He then concluded that mourning involves holding on to the lost love object by internalizing some of its aspects. In depression, anger, that is actually against a perceived lost love object, is turned inward against an internal representation of the lost object. From these roots psychoanalytic theorists have expanded Freud's overall theory of personality largely by explaining the role played by object relations, both internal and external. Broadly speaking, object relations theory has taken two major paths. One path follows the development in Great Britain by such theorists as Klein, Fairbairn, Winnicott, and Guntrip, and an American path which includes theorists such as Hartmann, Spitz, Mahler, Jacobson, Kernberg, and Kohut.

British Approaches to Object Relations

Some of the most significant developments in object relations theory have taken place in Great Britain. These developments are often identified as the British School of Object Relations which includes illustrious members such as Klein, Fairbairn, Winnicott, and Guntrip.

Melanie Klein, a Hungarian child analyst who emigrated to England just before World War II, produced the first comprehensive elaboration of Freud's discoveries about object relations (Klein, 1948, 1975). Like Freud, she saw the tie between instinct and object. However, Klein identified the connection as primarily internal. She believed that libido and the other basic motivating drive, the death instinct, have the capability of representing themselves mentally by creating internal images, or objects in fantasy.

Klein (1948, 1975) proposed that in the first six months of life the infant's objects are only part objects because the infant cannot yet comprehend that their experiences of frustration and gratification actually come from the same person. This condition of having split good and bad part objects, Klein labels the paranoid-schizoid position. The second half of the first year of the infant's life involves the beginning of unification of their experience and objects. The frustrating bad-object images and the gratifying good-object images come together. This results in the depressive position because at this point infants start to grasp that the object they have hated and attacked in fantasy is actually the same object they love and need.

Fairbairn was a British psychoanalyst who was greatly influenced by Klein. As Fairbairn developed his theory, he gradually discarded Freud's as well as Klein's focus on instincts and reinterpreted most of the latter theories in terms of relationships. For instance, he posited that libido was a drive for object relationship rather than an instinct for autistic gratification (Fairbairn, 1952). Further, he interpreted Freud's structure of the psyche in terms of object relations. Instead of the interpersonal mental processes of id, ego, and superego being the primary explanation for psychological functioning, Fairbairn proposed internal images or objects as the basic structures of the mind. For Fairbairn, it is the perception that people have of their significant others and how these key figures relate to themselves that most accurately accounts for people's emotions, reactions, and behavior.

Fairbairn's theory is somewhat different from Klein's in that his theory can be identified as a complete object relations theory. That is, he attempted to completely

reinterpret psychoanalytic thought in terms of objects relations while Klein's theory could be seen as more of an instinctual object relations theory due to her emphasis on the instincts in the formation of objects.

Two other important theorists in Great Britain who have made significant contributions to object relations theory are Donald Winnicott and Harry Guntrip. Winnicott, originally a pediatrician, was influenced by Klein. Like Klein, his focal point was the early years of life in the context of the mother-infant relationship. For Winnicott (1965) it is the mother being able to provide a holding environment (a safe, nonintrusive experience of human contact) that allows the infant to begin to experience their own primitive or original sense of self. Hence, when this kind of relationship is disturbed by mothers who continually impinge on their infants, they hide their true selves and create false "as-if" selves (Winnicott, 1965). This emphasis on the early years of life by object relations theorists has enabled psychodynamic/analytic psychologists to diagnose and treat more primitive pathologies that have their roots in the breakdown of preoedipal relationships. This treatment of earlier, more primitive, disorders entails a focus on the dyadic mother-child object relationship. Along with Winnicott, Guntrip (1960, 1961) describes this domain of object relations therapy as the unfolding and treatment of the patient's infantile or "original" self, which is terrified, retreating from life, and hiding in an inner core of one's personality.

American Approaches to Object Relations

While object relations theorists were making great strides in Great Britain, there was also a great deal of work being done in the United States to elaborate and expand upon psychoanalytic thought. Heinz Hartmann, an immigrant from Europe, contributed significantly to set the direction for how psychoanalytic thought would develop in this Country. Hartmann (1958) challenged psychoanalysis to become a general psychology by addressing human existence, not only in people's conflicts but also in their normal capacities and ego functions such as perception, memory, and object relations. Hartmann's work opened the door for other psychoanalytic theorists to investigate object relations.

Rene Spitz, a psychoanalytic pediatrician, undertook observational studies of the first year of life to actually examine the role of object relations. He found that many disorders of infancy were actually due to problems in the mother-infant relationship (Spitz, 1965). He found that internal representations or objects were crucial to the development of language, to psycho-logical growth in terms of the differentiation of emotions and the neutralization of intense instinctual drives, and to cognitive development. In fact, he found that in cases where infants were deprived of adequate object relations the result was the death of the infant, despite otherwise adequate care (Spitz, 1965).

Margaret Mahler is another psychoanalytic theorist who conducted observational research concerned with object relations. Her research emerged from her interest in childhood schizophrenia and autism. As she observed infants with their mothers, she

noted infants going through stages, from nonattachment (or autism), to intense attachment (or symbiosis), followed by a process of emotional hatching out of the intensive union with the mother, resulting in an internalization of the mother with the ability to tolerate separation from the maternal object (Mahler, 1968; Mahler, Pine, & Bergmann, 1975).

Jacobson (1964) worked out a comprehensive object relations theory by tracing not only the process of how relationships become represented in the internal world but also how the self comes to be represented.

Kernberg (1976) has contributed to object relations theory by tracing the development of object and self representations and then demonstrating the relationship between the earliest states of object relations and the more primitive disorders (such as schizophrenia, borderline and narcissistic personalities).

Kohut (1971) has written from the perspective of the development of healthy and pathological self-representations. He has added significantly to our understanding of narcissistic object relations.

In sum, object relations literature and research have contributed greatly to psychology's understanding of early human development and relationships, the relationship between internal objects and cognitive and affective process, and the etiology and treatment of more primitive disorders (schizophrenia, borderline and narcissistic personalities).

Object Relations Model and Psychosomatosis

The main focus of the present object relations model is the ego deficit in which the psychosomatic symptom serves as a substitute for the missing psychic structure, compensates for the deficit, and functions as a defense against separation and annihilation anxiety. Such a defense (the symptom) is self-destructive, but appears to serve the patient who does not have any other coping mechanism available to perform these functions. As Ammon (1979) postulates:

The psychosomatic symptom (has) the function of sparing the weak ego from having to work through the pain-causing event in the sense of 'suffering' and would be understood as a chronified form of the ego alien pain sensation in the sense of 'feeling'. As an 'equivalent' that replaces the actual experience and processing of the pain experience, it would at the same time be understood as an attempt to preserve the ego that is inadequately equipped with ego - unique ego cathexis, from the feared disintegration in a more or less self-destructive way (or) an attempt to fill out and compensate a narcissistic deficit, a 'hole in the ego,' that has evolved during the construction of the ego boundary and to thus preserve the integration of the person (Ammon, 1979, p. 70).

In this theory of object relations, the process of self-object integration takes place as the infant's somatic, sensory, motor, affective, and impulse experiences unfold within the presence of a consistent, predictable, mothering person who functions as a bridge between external reality and the infant's body experiences. Optimally, the child reaches a phase-appropriate capacity to soothe and calm themselves with mental representations (acquired incrementally from interaction with an optimally nurturing/ functioning mother) in her absence (Ammon, 1979; Fairbairn, 1952; Horner, 1984; Kohut, 1971; Mahler, 1968; Winnicott, 1965, 1966). A failure in the process of self-object integration or traumatic disappointment in the mother as psychic regulator can lead to a structural

defect in the self. In other words, the internal mental structure for psychic regulation is not developed. Consequently, anger and anxiety are experienced somatically (or through the body) rather than affectively and cognitively (Horner, 1984).

Research in psychosomatic medicine suggest a link between object relations and biological systems. Taylor (1987), Rees (1980); Schwartz (1981); and Weiner (1982) propose that disturbances in homeostatic regulatory processes can happen at the interpersonal and social level as well as at the cellular level. These disturbances can result in psychobiological dysregulation which, in turn, may increase one's susceptibility to diseases such as rheumatoid arthritis, hypertension, bronchial asthma, peptic ulcer, and several bowel disorders. Taylor (1987) has summarized these findings as follows:

While specific constitutional disturbances of physiological regulatory mechanisms may account for some predispositions to disease, there is mounting evidence that disruptions in object relationships can also dysregulate physiological processes, not necessarily by their impact on the mind. Indeed, Hofer's discovery (1983) that 'the regulation of the infant's milieu intérieur is partially delegated to processes within the relationship with it's mother' (p. 61) allows us to conceptualize all object relationships (commencing with the mother-infant relationship) in terms of the interplay of interpersonal regulatory processes complementing a person's self-regulatory processes (Taylor, 1987, pages 282 and 283).

The above disease model represents a bridge between the fields of psychosomatic medicine, psychobiology, and psychoanalytic theory. The conceptualization systems and identification of self-regulatory deficits (Taylor, 1987, p. 283) suggest that object relations is crucial not only at the intra-psychic but also at the psychobiological level which together may increase a person's susceptibility to disease.

As pointed out by Taylor (1987), Mahler's (1968, 1975) outline of developmental phases of early childhood is helpful in providing a framework for conceptualizing the

child's first object relationship. This early mother-child relationship forms a homeostatic regulatory system in which interactional processes stimulate the development of a primitive mind from the infant's bodily experiences. For Mahler (1968) it is the attachment bond and "synchrony" that develop between the mother and her infant (during the first two years of life) that are the basis for all subsequent object relationships. She conceptualizes growing up as a process in which the child moves from a nonattachment (or autistic) to an intense or symbiotic attachment with the mother toward a distinct individual identity, separation-individuation, which includes the following subphases: differentiation, practicing, rapprochement, and individuation.

Mahler's (1968) non-attachment or autistic phase (0 to 2 months) has been challenged and refuted by later neonate research. These studies showed that the mother-child interaction serves as an organizer and regulator of the infant's behavior and physiology from the time of birth (Emde & Robinson, 1979; Lichtenber, 1983; Sander, 1975; Stern, 1977).

In the symbiotic phase (2 to 6 months) the infant develops a very intense attachment with the mother where they behaves as a unit. As mentioned above, symbiosis may start before age 2 months. Taylor (1987) asserts that there is increasing evidence that disruptions in this intense symbiotic mother-child regulatory processes in early years may disregulate physiological processes which, in term, may predispose the individual to disease later in life. In other words, the mother-child relationship serves as an external physiological regulatory system for the child.

The last phase of Mahler's (1968) model is separation-individuation which is subdivided into: differentiation, practicing, rapprochement, an individuation. This phase is postulated to start around 6 months and extends until about 24 months (2 years).

Differentiation begins at around 6 months. It is characterized by the behaviors of interaction with the mother, such as a smile preferential to the mother, pulling her hair, and pulling the body away from the mother to see her better. Bodily dependence on the mother decreases as awareness of the outside world increases. Exploration of this world expands with the development of sensory capacities and locomotor skills. The second subphase is called the practicing subphase. After 6 months of age the infant tentatively experiments with both psychological and physical separation from the mother. The child progressively becomes more interested in people and objects, and with the development of the ability to walk they explore the world more actively. During this subphase these movements take place in close proximity to the mother. Intrapsychically there is a parallel increase in the sense of a separate self or individuation. The third subphase, "rapprochement", coincides with the beginning of symbolic play and more complex speech, resulting in the toddler's awareness of separateness and of the mother's love. Here the child begins to be aware of the dangers of the world and the need to cope with these dangers on their own. Finally, the child reaches the separation-individuation which is the child's awareness of his/her individuality apart from the mother.

These three subphases culminate in a consolidation period of separation-individuation, in which there are firm foundations for the development of a lifelong concept of individuality and object constancy. This includes not only the ability to

maintain an internal representation of an absent love object, but also bringing together the good and bad part objects into a realistic whole. The ability to perceive the parts as belonging to a whole person, with both their good and bad aspects, has been learned. At this point the child can be said to have been psychically "born", to have a separate self from that of the mother. The "pains" of this psychological birth are increasing anxiety over fusion, or symbiosis, with the mother. This process moves against a gradually decreasing anxiety over the loss of this primitive security. In Mahler's terminology, separation anxiety is not simply a fear of being apart from the physical presence of the mother, but rather, it is more a signal anxiety relating to the loss of attachment to the intrapsychic mother-object, occurring at the time when this inner representation has become clearly separate enough and distinct to be meaningful (Mahler, 1968; Mahler, Pine, & Bergman, 1975).

Sander (1975; 1983) has found that as infants progress through Mahler's (1968) subphases of separation-individuation, they show increasing capacity to regulate their own behavior. This follows the symbiotic stage, when the mutually reinforcing relationship between mother and child is dominant.

Rinsley (1968) postulates that the mother's needs during the separation - individuation process may interfere with the infant's growth to autonomy by leaving a weak ego with unresolved symbiosis. This, in turn, can affect future object relationships as well as function as a predisposing factor in the susceptibility to disease. Similarly, for Winnicott (1965) it is the mother's ability to provide a holding environment (a safe, nonintrusive experience of human contact) that allows the infant to begin to experience

their own sense of self. When this kind of relationship is disturbed by a mother who continually impinges on the infant, the infant hides their true self and develops a false, "as-if" self. Finally, Masterson and Rinsley (1975) have found that mothers who are themselves struggling with strong symbiotic needs may resent their children's growing independence and discourage separation-individuation in them. Conversely, the mothers who present fewer symbiotic needs tend to reinforce/reward their children's efforts to separate and to gain mastery. These are mothers who give their children the message that it is safe to venture out because they will be available when their children need them (Masterson & Rinsley, 1975). The mothers of psychosomatic patients have been described as both overprotective and rejecting with both types of behaviors often detected together, despite their contradiction. These mothers supposedly transfer their own unresolved narcissistic conflicts to the child, and use the child and their body in the attempt to come to terms with the conflicts. Hence, they try to keep their children in symbiosis by overprotecting and withholding their love (rejecting) as punishment when the children try to individuate (McDougall, 1980; Sperling, 1949). More recently, Sackin (1985), in reviewing the literature on parental influences, has found a relationship between the character of the mother and psychosomatic disorders in the child. Further, the mothers seem to play a role in the etiology of these disorders. Sackin has coined the term "psychosomatic mother", by which he means a mother who is domineering, overly involved and intrusive, very demanding, smothering, and clinging. He concludes that the mother's personality is organized around narcissistic attitudes, motives, and behaviors, which may explain her lack of empathy and sensitivity to the child's need.

This mother will be rejecting any time the child attempts to separate, individuate, or show autonomous striving. This is her strategy for keeping the child in symbiosis with her (Sackin, 1985). On the other hand, the father seems to be passive, controlled by the mother, and less involved with the child. Once again, the author based this conclusion on a review of the literature on parental influence.

Halliday (1942) found that RA patients often perceived one or both of their parents as rather strict and uncompromising in discipline (especially the mother). Johnson et al., (1947) reported findings indicating that in the family background of female RA patients there was predominantly a strong, domineering, demanding mother along with a gentle, compliant father. Cleveland & Fisher (1954) carried out a similar study with a sample of male RA patients. They found that RA men perceived their mothers as hard working, efficient, and "Christian" women (as measured by self-sacrifice to the point of being a martyr), but also behaving as the primary disciplinarian (and a strict one in that regard). As for the fathers, they were perceived as inconsistent in their behavior (being both weak as well as strong) and somewhat unpredictable (in terms of emotional outbursts to situations where they usually show minimal affect).

Cobb et al., (1969) found that RA female patients tend to recall their mothers as being arbitrary, severe, unreasonable, and controlling. Further, they reacted to their mothers with a high degree of covert anger, but with little overt aggression and resistance. However, despite their recollections of their mothers in the "negative way", the RA women chose them as role models as frequently as did the women without RA. As for recollections and reactions toward their fathers, there was no difference between

the RA and control groups. In their current personality functioning, the RA women showed a continuation of conflicts over the expression of aggressive impulses. They revealed a high level of anger, but wanted to control it. The RA group reported a greater number of poor mental health symptoms compared with the control group. The RA women tended to come from homes in which there were high discrepancies in social status indicators between the mother and the father. Interestingly enough, the marriages of the RA women were characterized by discrepancies in their own and their husbands' status; they also tended to marry men who came from families with discrepant social status. Their relationships with their husbands were characterized by a great deal of anger and aggression expressed toward one another. As for the RA men, they did not show the same attitudes toward their mothers as did their female counterparts. Similar to the women, the RA men reported more symptoms of poor mental health than their control group (non RA men). In comparison to the women, the RA men were found to be lower on anger and aggression. The marriages of RA men and healthy women were found to be low on marital hostility. Conversely, the RA women and healthy men scored high on anger, aggression, and marital hostility (Cobb et al., 1969).

Baker (1982) carried out interviews with all patients from a rheumatology clinic. The sample consisted of patients who were diagnosed to be developing early Rheumatoid Arthritis. The results indicated that 86% of the RA sample reported either a negative relationship with their mother or a perceived stressful life event before the onset of RA symptoms (Baker, 1982). No control group was mentioned in the article.

Research findings in this literature have indicated that the histories of RA patients predominantly show loss of a parent or significant others by some means: death, separation, or psychological absence due to illness or other "reasons". This loss took place in childhood or, at least, by adolescence (Blom & Nicholls, 1954; Booth, 1937; Cleveland & Fisher, 1954; Halliday, 1942; Ludwig, 1949; Schochet et al., 1969).

The issue of not being able to deal with loss may be related to inadequate mothering/parenting in the early years of life. Ludwig (1949) found that the mothers of RA patients seem to have given an inadequate feeling of security in early years. This was shown by a rejection of the child either overtly, or by an extreme degree of overprotectiveness and overanxiety. As a result of this inadequate feeling of security, the child's development toward a free, independent existence is hampered which, in turn, will foster attitudes of dependence and helplessness. Blom & Nicholls (1954) in a study of RA children, observed a frequent history of severe emotional or physical deprivation early in life. These researchers suggested that the issue of separateness or individuation seems to start in early childhood with an extreme mother-child interdependence and great conflict in the child about trying to move apart from the mother.

The difficulty around the issue of separateness/individuation from mother may be at the core of RA problems in forming close relationships. Booth (1936) found that over half of a sample of 43 patients with RA reported that they had difficulty in making friends. Other researchers such as Ludwig (1949) and McLaughlin et. al., (1953) have also reported that RA patients have difficulty in developing satisfying relationships with other people. These investigators describe the RA patients as very sensitive and highly

perceptive of other's feelings (particularly if these feelings were of a hostile or unfriendly nature), allowing themselves to be imposed upon by others as opposed to risk offending them. Blom and Nicholls (1954) maintained that this problem was also present in the RA children of their sample in that they could not transfer feelings of security from parents to hospital personnel. That is, they could not balance off the frightening aspects of hospitalization with positive feelings of trust and support from the hospital staff.

In short, putting together the above findings and this object relations model, RA "proneness" may result from a failure in the process of self-object integration or traumatic disappointment in the mother as psychic and partly physiological regulator, which can lead to a structural defect in the self. Hence, the internal model structure for psychic regulations may not develop which may also alter the infant's physiology which together may predispose the person to the development of RA especially if there is a history of this disease in the family. In this case, anger and anxiety are experienced somatically through the joints rather than affectively and cognitively (Horner, 1984). These objects relations problems in RA patients may occur during the first two years of life (Taylor, 1987). Although the literature on the object relations of patients with RA per se is non-existent, the findings reviewed above seem to be consistent with the psychosomatic mother-child relationship pattern described above (Blom & Nicholls, 1954; Booth, 1937; Cleveland & Fisher, 1954; Cobb et al., 1969; Halliday; Ludwig, 1949; Sachin (1985). Therefore, the above results illustrate the need of the present study which aimed to explore the object relations of RA subjects.

To summarize, this section of the review presents theoretical models which can be used to explain the psychodynamic aspect of RA. Here an attempt was made to review the role of biological, immunological, psycho-neuroimmunological, life events, and psychodynamic alexithymic factors on the etiology of RA. The RA patient must be understood as a bio-psycho-social being who has had to adapt to their environmental demands and whose behavior is a joint product of individual differences and environmental variables. Therefore, an integrated view (based on the models described in this present study) would postulate that many people prone to RA will not always develop the disease, but on the other hand, relatively fewer people who are not prone to RA develop it.

B: PERSONALITY AND RA: SPECIFICITY OR GENERALITY

Alexander's approach may be the best known model of the early psychosomatic models. He proposed that there were seven psychosomatic diseases: peptic ulcer, essential hypertension, bronchial asthma, thyrotoxicosis, ulcerative colitis, neurodermatitis and Rheumatoid Arthritis. According to Alexander, each of these diseases has a different underlying unconscious conflict, which increases the person's susceptibility to the disease. When circumstances occur that activate the conflict, specific emotions such as anger, anxiety, and depression are produced and these affects trigger autonomic, neural, or hormonal outflow, stimulating the anatomical and physiological changes characteristic of the disease (Alexander, 1950). Although Alexander suggested

that these conflicts or emotional states can be found in different personalities, Krantz & Glass (1983) asserted that "the tendency was to describe the constellations of underlying conflicts in language conducive to the interpretation of these constellations as personality traits or types" (Krantz & Glass, 1983, p. 42). The next paragraphs represent a review of the literature on the role of personality in the etiology, onset, and course of Rheumatoid Arthritis.

More recently, there seems to be some consensus among researchers that the patient's personality may be an important predisposing causal factor in the etiology of psychosomatic disorders. That is, personality may influence the patient's response to stimuli, stress and life changes, their emotional response and the level of arousal to such stimuli and life events as well as the degree to which affect is contained or inadequately expressed via speech, motor activity or other means (Rees, 1983). Further, personality may also affect the way in which the patient perceives stresses and significant life events, such as threats and the way in which they deal with stress by defense mechanisms, which can either relieve or aggravate the impact of such potential stress upon the organism (Rimon, 1986).

Psychosomatic research relating to RA has focused more specifically on the etiological role that personality might play in this disease (Genest, 1983). This is the specificity personality hypothesis, which postulates that the person who develops RA has identifiable psychological characteristics or traits.

This review will focus on three aspects of the literature on RA and personality:

(I) Psychosomatic models, (II) An overview of RA personality topology through the

decades (from the 1930s through the 1980s), and (III) Some methodological flaws which may affect the reliability of this research area.

Three major psychosomatic models can be identified in the literature dealing with RA and personality which seem to have had a significant impact in this research area: (a) Alexander's psychodynamic model (in the 1950s) (b) Graham's psychosomatic attitudes model (in the 1960s), and (c) Achterberg & Lawlis' alexithymia model (1980s)

Psychosomatic Models

Alexander's Psychodynamic Model (1950s): Specificity Hypothesis

Franz Alexander (1950) is probably one of the most influential psychoanalytic theorists of psychosomatic disorders. His view integrates genetic organ vulnerability, personality factors, and life stress. Those individuals who are genetically vulnerable in a specific organ and have specific psychodynamic conflicts will develop disease of that organ when the stress of living arouses those psychodynamic conflicts and they are no longer able to defend against such conflicts. All three factors - a vulnerable organ system, an underlying dynamic conflict, and a precipitating life event/situation interact to produce the disorder.

According to Alexander (1950) the specific dynamic pattern in RA can be described as follows:

Restrictive and (in women) overprotective parental influence (usually mothers's) —> rebellion against restrictive parental influences —> anxiety —> repression of rebellious tendencies due to excessive dependence nurtured by parental overprotection —> expression of rebellion in competitive sports and outdoor activities in childhood and early adolescence —> expression of hostility in combination of serving

and controlling environment (benevolent tyranny) in later life; also rejection of feminine role (masculine protest) —> interruption of successful pattern of serving and at the same time dominating the environment —> increase of muscle tonus —> RA. (Alexander, 1950, p. 208-209).

Basically, according to Alexander, the RA personality develops as a consequence of excessively restricting parental attitudes, especially from the mother. In small children the more primitive expression of frustration is random motor discharge. If, through strict punishment, such discharge becomes associated with fear and guilt, then later on in life, whenever a feeling of guilt or other fears are stimulated, the child will react to these emotional stimuli by unconscious muscular contraction, which also activates the opposing muscles forming a "psychological straight- jacket" (Alexander, 1950). Over a period of time, the repetition of this pattern of muscular reaction may injure the person's joints and intensify susceptibility to RA. Dynamically these patients attempt to achieve a balance between aggressive impulses and control. It appears that they learn to discharge aggression through muscular activity (i.e., in sports, hard work) and release the sense of restrictiveness by serving others. Whenever the balance between aggressive impulses and control is disturbed, this results in the "psychological straightjacket" which, in turn, may lead to joint injury and, perhaps, RA. Here it is important to point out that these results were based on a sample of predominantly female patients (33 patients from which 29 were females and 4 males). In sum, these (mostly) female patients tended to have been strictly disciplined as children, they rebelled against their disciplinarians (parents - especially mother) as adolescents (expressing rebellion and resentment through tomboy-like behavior and sports), and became tyrants like their parents as adults (punishing other

people and complaining about their own unhappiness in life). Apparently, RA has its onset when their tyrant parents part with them. Supposedly these people are unable to tolerate separation and they become ill, depressed, stoical or embittered. In the process of developing RA, the resentment over the loss of the object of tyranny is expressed through increased musculoskeletal tension which, in turn, produces the joint disease.

Graham's Psychosomatics Attitudes Model (1960s): Specificity Hypothesis

David Graham has hypothesized that specific attitudes set off physical symptoms of psychosomatic disorders such as urticaria, ulcerative colitis, eczema, psoriasis, bronchial asthma, essential hypertension, and rheumatoid arthritis among others. Here Graham defines the concept of attitude as "the perception of the stimulus situation and the response tendency around it, that is, what the individual feels is happening to him and what he wishes to do about it." (Graham, et. al., 1962, p. 257). Basically, he argues that the individual's perception of the world and what that person thinks is threatening predicts what psychosomatic disorder will develop.

Graham and his associates (Graham, etc., 1962) interviewed 36 patients in two studies with several psychosomatic disorders to investigate what situations immediately preceded the onset of the symptoms and what the subjects perceived was happening to them. These researchers found that specific attitude patterns were associated with specific disorders. For instance, patients with RA had an attitude which made them feel "tied down and wanting to get free." (Graham et al., 1962, p. 260). In other words,

they felt confined, restricted, restrained, and wished they were able to move about freely on their own.

Achterberg & Lawlis' Alexithymia Model (1980s): Generality Hypothesis

Alexithymia is the latest and perhaps the most promising psychosomatic model which may bridge knowledge from neuro-physiological and psychodynamic findings and may shed light on the onset and progression of RA. Achterberg & Lawlis (1981) have postulated that alexithymic personality traits may play a role in the development and course of RA through the following mechanisms:

- (1) Stress from the external environment may result in somatic change which can be expressed in any of the autonomic responses accompanying fear, anger, love or other feelings.
- (2) Due to this somatic change, neither the subjective right hemisphere nor the verbal hemisphere of the brain can process or label emotional information. Then what happens, in this case, is a complete somatic emotional response, but a "defective" cognitive one (response).
- (3) This somatic response may include muscle tension as an antecedent to symptoms. Muscle tension has been found to increase joint pain and intra-articular temperature (Harvath & Hollander, 1949). Therefore, muscle tension may accelerate destructive activity in the joints themselves.
- (4) The unlabelled, diverted emotions may also be concentrated on hypothalamic activity. If so, the whole autonomic system could be involved. By the same token, the

immune system (which is under central nervous system control and in particular influenced by hypothalamic activity) would be affected. Rogers et al., (1979) have maintained that CNS change leads to immunologic change via the mechanism of hypothalamic-pituitary-hormonal stimulation. In addition, Besdovsky et al., (1977) suggest there is evidence for an afferent link, triggered by an immune mechanism, in which a message is sent to the hypothalamus whenever an immune reaction occurs. Hence, this may be a two-way process, where the hypothalamus can both respond to immunologic changes as well as affect these changes. In the case of RA, Achterberg & Lawlis (1981) believe that the defect is not really in the antibody reactions per se but rather a defect in the signals from CNS areas (i.e., the hypothalamus) which initiate the reactions.

(5) As for the "denial of affect/emotion" appearing throughout the RA research, Achterberg & Lawlis (1981) explain that it is not denial in the psychoanalytic sense as in having a mental block that serves as a defense mechanism. Instead, it relates to a very serious problem of, literally, not having words for feelings; it may reflect an actual failure to process the cognition involved (Achterbert & Lawlis, 1981).

Rheumatoid Arthritis Personality: An Overview

For the past five decades psychological investigators have taken a trait-oriented or typological approach in researching RA. In other words, many of these researchers focused on delineating an "RA personality" or a configuration of traits with corresponding conflicts and demographic variables which might be unique to RA patients.

The present overview will include the investigating efforts on RA personality from the 1930s through the 1980s. In order to identify predominant themes in this literature, the decades will be collapsed into three categories: (a) literature from 1930-50s; (b) literature from the 1960s, and (c) literature from the 1970-80s. The basic intent of these investigators has been to determine parameters that can be used to identify high risk groups for developing RA and to help those who have been diagnosed with RA to better manage their disorder psychologically.

1930-50s

The early literature on RA personality has to be interpreted with the awareness that scientific rigor was not always observed in many studies. In addition, there is no guarantee that the patients studied at the time met the currently accepted diagnostic criteria for RA (Achterberg et al., 1981).

Possibly one of the earliest typological research studies was done by Ellman & Mitchell (1936) who investigated a sample of 80 arthritic patients (40 atrophic and 40 hypertrophic or extremely atrophic) both before and after the onset of disease. Retrospective results showed that in the cases of the atrophic patients, the premorbid personality included predominantly schizoid features with anxiety occurring in 25 and depression in 6 cases. Further, in 15 atrophic patients there was a history of worry, pressure of work, marital disharmony, and real or threatened loss of relatives immediately prior to the onset of RA. These investigators concluded that individuals who develop RA have specific personality characteristics which are identifiable before

the onset of the disorder, and to a large degree the make-up of the premorbid personality. At this point it is important to point out that this was a descriptive study which did not include a control group, either of people with another psychosomatic disorder or one with non-psychosomatic patients. Further, there seems to be no information about the psychological measures used in the study or more information about socio-demographic variables. Hence, these findings have to be interpreted with caution.

Booth was another leading and more scientific researcher in the area of RA personality during this time period. He published four papers (Booth, 1936, 1937, 1939, 1946) based on data collected from 73 arthritic patients. Further, Booth compared the latter patients to hypertensives (as a control group). The measures were an interview and the Rorschach Inkblot Test. His results indicated that, in comparison to hypertensives, arthritic patients were introverted, righteous, obstinate, strict and rigid on moral issues, eager to conform to acceptable social standards, unrelenting, and unforgiving. In addition, they showed poor sexual adjustment, hypersensitivity, quick arousal to anger, great need to be dominant and controlling, restlessness, and aimless muscular activities.

Believing he had identified "the rheumatoid arthritis personality," Halliday (1942) described a sample of 20 female RA patients as predominantly decent-looking, quiet, cheerful, reliable, conscientious people who tend to hold the same job over time, are self-limited and restricted in their expression of feelings/emotions, and who are domineering, and frigid. Further, these RA patients described their parents as strict and described themselves as shy and retiring at school, as being self-sacrificing, as having few friends (but being loyal to them) and as being punctual, orderly, tidy, and clean. During the

investigation, Halliday observed his RA patients in the waiting room, and noticed that they sat quietly, did not fidget, squirm, or show nervousness. He concluded that emotional factors such as shock following acute danger, anxiety over money situations, and separation were important in the precipitation of RA. These findings warrant caution due to methodological flaws. Halliday did not use a control group. He also failed to report on the psychological measures and procedures utilized.

Johnson, Shapiro, and Alexander (1947) reported research findings which basically supported the compulsive aspect of the personality configuration proposed by Halliday (1942). Johnson et al., (1947) investigated a sample of 33 RA patients (29 females and 4 males). From this sample, 18 patients were studied in psychoanalytic therapy and 15 were assessed in diagnostic interviews. Here it is important to note that no psychological tests or control groups were included in this study. Their findings led them to conclude that the central conflict in RA patients is in the handling of chronic hostile impulses discharged through the voluntary muscles (with an increase in muscle spasms as well as in tonus) which, in turn, precipitated an attack of RA. More specifically, these RA patients apparently learned to discharge hostile impulses through muscle activity in ego syntonic ways (i.e., hard work, sports, gardening, and serving others to relieve their guilt over the hostile impulses). The RA females tended to reject the "feminine role" (as measured by their being head of the house, by making important decisions, and by a preference for the masculine posture in sexual relationships). According to those researchers, the masochistic tendencies of RA women served two purposes dynamically, the discharge of hostility toward early parental dominance (by expressing anger) and

denial of dependent needs. Their competitive relationship with men served as a discharge of hostile feelings only. The most striking aspect of these findings was the feature of stoicism (lack of feeling or passion). The authors pointed out that the personality of advanced crippled patients was overlain by a chronic psychological adaptation to the state of being crippled.

The study described above was the first in a series of psychoanalytic studies that attempted to identify the unconscious emotional conflicts supposedly experienced by individuals with predisposition to RA which, supposedly, underlie the structure of their personality. In the late 40's and early 50's Ludwig (1949; 1952, 1954, 1955) studied psychoanalytically 8 patients who late developed RA (7 females and 1 male). He used the usual free association and dream interpretation psychoanalytic techniques but no control group of any kind. He concluded that his RA patients showed (across the board) the following personality characteristics: extreme dependence, perceived inadequacy, and difficulty coping with environmental demands and with other people. They were terribly blocked and unable to express affect or emotion. They often denied and disguised their dependency by over-compensating with a "front" (facade) of independence, self assurance, and self-control. They seemed to have an attitude toward work and responsibility that varied from trying to deny the dependency (both by accepting more responsibility than they could handle and by overwork) to showing dependency and inadequacy through avoidance of all responsibility and reliance upon others for guidance. That is, they tend to go to extremes in terms of their dependency, which leads to difficulty in relating to people, which, in turn, may leave their interpersonal needs

unmet. This may explain why (according to the present results) these patients avoided interpersonal closeness. They had trouble forming and maintaining close relationships, were aware of strong inexpressible angry feelings, reacted in an overly sensitive manner to any degree of criticism or rejection, and preferred to be imposed upon rather than risk upsetting people, which could result in losing their regard. Finally, Ludwig postulated that the most important precipitating factor for RA patients was loss of, or separation from, important key figures (i.e., like mother, father, or other close relative) on whom these patients depended for support. This investigator observed that RA exacerbations often occurred on the anniversaries of the deaths of relatives, or seemed to be influenced by other life events associated psychologically with their original bereavement. Further, Ludwig inferred that this inability to deal with loss, characterizing his RA sample, may stem from inadequate mothering/parenting in early life. This inference was based on observations that the mothers of all 8 RA patients seem to have given them an inadequate feeling of security in early years. That is, these mothers either overtly rejected or imposed an extreme degree of overprotectiveness and overanxiety upon their children. As a result of these experiences, their development toward a free, independent existence is hampered which, in turn, may foster dependency and helplessness in such children. For Ludwig this implied that these patients never accomplished separateness/individuation from the mother figure. This conflict between being interdependent versus moving apart from mother could contaminate all subsequent relationships. That is the reason, Ludwig concluded that RA patients could not form satisfying relationships. Finally, Ludwig concluded that this personality pattern was present before the onset of RA and, therefore,

it was not merely secondary to the disease (Ludwig, 1949, 1952, 1954, 1955). Along similar lines, Blom & Nicholls (1954) studied 28 hospitalized RA children and adolescents between ages 2 and 16. Their findings indicated that the onset of RA was usually correlated with an emotionally charged life event, such as the loss of an important relative due to either death or separation. These patients were described as depressed, apathetic, immobile, unresponsive, withdrawn, and uncomplaining. The researchers found a predominant history of severe emotional or physical deprivation in the early lives of these children and adolescent patients. Finally, upon very close examination of the data, the investigators came to the conclusion that the basic conflict of those RA patients was the child's inability to achieve separateness/individuation from the mother. The latter results support Ludwig's findings (1949, 1952, 1954, 1955) on the issue of loss, its origin, and ramifications for RA patients. Finally, it is also important to keep in mind, when interpreting the findings reviewed above, that these investigators, except for Booth, did not use control groups of any kind or psychological testing.

The following research studies show better methodology in that the investigators included a control group and made use of known psychological test such as the MMPI and Rorschach. Mueller & Lefkowitz (1956) studied a sample of 29 male RA patients and compared them to a control group comprised of 29 male neurotic subjects, matched by age, IQ, educational level, and occupation. They used the Rorschach Inkblot Test to assess personality. Their findings showed that RA patients tended to turn hostility inward, they were not as concerned as the neurotic controls with obstacles that might stimulate aggression, tended to seek solutions more than to justify problems, were less

defensive, and conformed, to a greater degree, to conventional modes of behavior. Furthermore, these RA patients had unsolved conflicts with parental authority, had problems with affect/ emotions (such as "defective emotional responsiveness," lacked emotional maturity, and were emotionally constricted), and liked sports.

Cleveland & Fisher (1954) carried out a well-controlled study utilizing 26 male RA and 20 control low back inpatients. They used measures such as the Rorschach Inkblot Test and the Thematic Apperception Test (TAT) plus a clinical interview. Results show that the male RA patients tended to exhibit an excess of exhibitionistic and voyeuristic fantasies in terms of concern about their looks, their clothes, and the impressions they made on other people. In the interview the RA patients appeared to be calm, composed, and optimistic, almost never expressing or even consciously feeling anger. They complained of social inadequacy, tended to shun the limelight, and wished to be just an average person. Further, they complained of the inability to say the right thing at the right time, and worried what others thought about them. Finally, RA men perceived their mothers as hard working, efficient, and "Christian" women (as measured by self-sacrifice to the point of being a martyr) in addition to behaving as the primary disciplinarian (and a strict one in that regard). As for the fathers, they were perceived by their RA sons as inconsistent in their behavior (being both weak as well as strong) and somewhat unpredictable (in terms of emotional outbursts to situations where they usually show minimal affect). The researchers also observed that in comparison to controls (back pain patients) male RA patients show a more predominant history of loss of a parent or key figure by death, separation, or psychological absence due to illness or other

"reasons." Further, these authors maintained that this loss happened in childhood or, at least, by adolescence. The latter results were also supported by Blom & Nicholls, 1954; Booth, 1936, 1937, 1939, 1946; Ludwig, 1949, 1952, 1954, 1955).

Cormier, Wittkower, Marcotte, and Forget (1957) utilized the siblings of RA patients as a control group. The sample was composed of 18 sib-RA patient pairs. As independent measures, projective tests such as the Rorschach and TAT were administered to 13 out of 18 pairs. The results indicated that RA patients were interested in games, sports, tended to be impulsive, and have competitive and aggressive fantasies. On the other hand, the siblings of RA were quite shy, reserved, conforming, and not very athletic. These siblings reported that they had been jealous of their more active and athletic sibs (now RA patients). The main difference between the siblings and their RA patient pairs was the way in which they dealt with their aggressive impulses. The now RA, patients were inhibited in displaying aggression before the development of RA in comparison to their siblings who did not show such inhibition. However, after the onset of the disease, RA patients were more likely to have more outbursts of rage and to be more violent than controls, especially in sports. In addition, they dealt with display of aggression differently. That is, the controls tended to forget those situations in which they showed aggression, while the RA patients were consumed by guilt, remorse, had a need for self-punishment, and feared that they had caused great harm to the object of aggression. Furthermore, the RA patients tried to be punctual, tidy, perfectionistic, to value financial security, and to exhibit self-sacrificing, and forgiving attitudes. Both sibling and RA patients in each pair described their parents as strict. However, RA

patients tended to perceive parental demands as excessive and to react to their parents with impulsive defiance, compared to their siblings who tended to accept such demands without complaining or bypassing them unprovocatively. These investigators concluded that the severity of RA appeared to be proportional to the severity of the impairment of the capacity of the patient to handle aggressive impulses (Cormier et al., 1957). At this point it is important to point out that the differences found between RA patients and their siblings were not found in all subgroups across the board. In other words, in the difference in display of aggression, the difference was "very strong" for three pairs of siblings, "non-existent" in 3 pairs, and of "variable strength" in the other 12 pairs. Further, these researchers found that RA patients tended to liberate their energy in "an introversive way" as compared to their siblings who seemed to liberate it in "an extroversive manner," and that RA subjects showed more restrictive control than their siblings. This difference held for eight pairs, only slightly for three pairs, and for the other two pairs the latter difference was even reversed (the siblings were more introversive than the RA subjects). In addition to the above differences not holding for all 13 pairs, Cormier et al., (1957) failed to consider age and sex of the siblings. Hence, these data do not seem to support the assertions of the investigators with the clarity they seem to suggest in the article.

In short, the early literature (1930-1950s) on the personality of RA patients has to be interpreted with caution due to methodological flaws, such as failure to use control groups and/or known psychological tests. However, given the latter lack of scientific rigor, most of these studies had a psychoanalytic orientation and attempted to identify the

unconscious emotional conflicts underlying the "RA personality." The controlled studies indicated some similar and some dissimilar findings. Several investigators agreed that RA patients, when compared to controls, were more active and more interested in sports and games as children and adolescents, were shy, introverted, inhibited, and had difficulty expressing affect/emotions. For instance, they tended to repress anger and aggressive impulses. Cormier et al., (1957), using siblings as controls, found that as children RA patients were more impulsive, defiant (as children) before the onset of RA but they inhibited aggressive impulses. However, as adults, after developing the disease, they showed more common and more violent outburst of rage. Similarly, Booth (1936, 1937, 1939, 1946) found that RA patients were easily aroused to anger. The latter findings support those by Cormier et al., (1957) [which show the patients after they developed RA, they expressed anger or aggression to a greater extent than they did before the onset of the disease]. However, both sets of findings are contradicted by those reported by Cleveland and Fisher (1954), who concluded that RA patients seldom, if ever, consciously felt and expressed anger. As for the studies which did not use a control group, they tended to be consistent, for the most part, with the latter findings, except for the difficulty with affect. Halliday (1942), Johnson et al., (1947), Ludwig (1949, 1952, 1954, 1955), and Blom & Nicholls (1954) all found that RA patients had difficulty experiencing and expressing anger, as well as aggressive or hostile impulses. Hence, they discharged their affect through the soma (body). Further, these patients seemed to be hypersensitive to rejection, criticism, and would rather be imposed upon than risk losing people's regard by confrontation. They seemed to have difficulty not

just forming, but also maintaining relationships. This interpersonal difficulty can be traced to early years of life in which the child is not able to achieve separateness/individuation from a strict, domineering, cold mother. This, in turn, hampers the child's ability to deal with loss and form subsequent relationships. To summarize, the latter researchers have identified two basic conflicts in RA patients. One is related to the modulation of affect - being able to feel and express anger, aggressive or hostile impulses. The other is around the issue of loss - not being able to deal with separation - which may be associated with RA patients' inability to relate to people (form and maintain relationships).

1960s

Investigative research in the 1960s suggested additional descriptive personality traits of RA patients, and the speculations about childhood dynamics continued. However, these were more adequately controlled studies than some of the earlier ones in terms of including control groups and relatively objective psychological tests such as the Minnesota Multiphasic Personality Inventory (MMPI).

Moos and Solomon (1964, 1965 a,b) conducted a series of some of the best controlled studies in this area. For instance, they (a) utilized carefully matched control groups; (b) used different assessment methods and compared their results, and (c) combined observations of investigators of different theoretical orientations trying to "balance bias." In the first study, Moos and Solomon (1964) compared the MMPI profiles of 49 female RA patients with those of 53 of their healthy female family

members. The results showed that the RA patients were significantly different from their healthy relatives on scales reflecting (a) physical symptoms; (b) depression, apathy, and lack of motivation; (c) general neurotic symptoms (ie., anxiety and overcompliance); (d) psychological rigidity, and (e) similarity to other psychosomatic conditions. Similarly Boureston & Howard (1965), as well as Naven & O'Brien (1964), compared the MMPI responses of RA patients to those of normal controls and found a neurotic pattern consisting of a high degree of bodily concern, depression, and somatization. In 1965, Moos and Solomon published several articles based on a sample of 36 subjects (18 female RA patients and 18 of their closest aged, healthy sisters as a control for age, sex, parental occupational status, and the other background variables). The authors identified 140 statements from the literature, each suggested by at least one investigator, to be characteristic of patients with RA. The 140 statements were independently rated in personality traits by three raters. These personality trait dimensions were measured as three independent ways: (a) by regularly constructed scales for the MMPI (b) by ratings done separately by two raters for a recorded 45-minutes semi-structured interview, and (c) by a specially constructed personality test (no further detail was given about this test in the articles). Two raters categorized all 556 MMPI items as relevant to one of the fifteen personality dimensions which were measured in bipolar scales (i.e., dependency vs denial of dependence, etc.) Raters scored interviews on a five-point scale on the dimensions and achieved very high inter-rater reliability. The results indicated that RA patients (as compared to their healthy sisters) scored significantly higher in terms of perfectionism, compliance and subservience, nervousness and restlessness, reserve and

introversion, depression, sensitivity to anger, masochism and self-sacrifice, and bound (constricted) as well as repressed affect/emotion. There were also great differences in self-description between the two groups. That is, RA patients tended to describe themselves as nervous, tense, worried, struggling, depressed, moody, highly strung, and easily upset. On the other hand, their sisters described themselves as liking people, as active and constantly busy; as easy to be acquainted with; as good, hard, productive employees, and as enjoying life. Interestingly enough, both groups showed a strong need to perceive themselves as hard working, productive, energetic, constantly busy people who successfully accomplished a large variety of tasks and were achieving goals in their lives. However, in reality, siblings appeared to achieve many of these goals as opposed to the RA patients, who could not accomplish their goals. When describing the RA patients as children, their sisters used phrases such as "poor little girl," "always felt inferior," "sickly and inactive," and "shy, worried, and lazy." Conversely, the latter phrases were hardly ever used in the RA patients' descriptions of what their sisters were like as children. Finally, both as well as their sisters tended to view both their parents as being strict in discipline (Moos & Solomon, 1965a, 1965b).

Cobb et al., (1969) studied a sample of 49 family clusters comprised of a key person with RA, his/her spouse, a sibling and the sibling's spouse, two cousins, and an unrelated person, all of whom were interviewed three times. Personality variables were measured by four indices constructed from a checklist of symptoms (physically ill health, physical anxiety, psychological anxiety, immobilization, depression, self-esteem, self-confidence, job satisfaction, desire for change, impulsiveness, frequency of anger-

irritation, impulse to overt aggression, frequency of overt aggression, duration of anger, guilt about spouse-directed aggression, interviewer's ratings of respondent's irritability, need for independence, and need for emotional dependence) used previously in a national interview study of mental health (Gurin et al., 1960). The index construction was based on the factor analysis done by the original investigators (Guring et al., 1960). The 49 family clusters resulted in 324 subjects (169 men and 155 women). Of the total, sixty-six patients were classified as having RA (49 women and 17 men). The results indicated that RA women showed continuous conflicts over the expression of aggressive impulses. That is, these women revealed a high level of anger, but wanted to control it as opposed to RA men who scored lower on anger and aggression. Further, RA females tended to recall their mothers as being arbitrary, severe, unreasonable and controlling. They reacted to their mothers with a high degree of covert anger, but with little overt aggression and resistance. However, despite the anger toward their mothers, these RA women chose them as role models as often as did women without RA. However, RA men did not show the same attitudes toward their mothers as did their female counterparts. In addition, the relationship of RA women with their husbands was characterized by a great deal of anger and aggression expressed toward one another. On the other hand, the marriages of RA men and healthy women were found to be low on marital hostility/aggression. As for the subjects' recollection and reaction toward their father, there was no difference between the RA (female and male) and control groups (Cobb et al., 1969).

Rimon (1969) compared 100 RA patients and 100 matched controls, using careful clinical observations based on interviews and life events scales. He identified two subgroups of patients within the sample that differed with regard to the presence or absence of psychological stress prior to the initial manifestation of RA. The main conflict subgroup was characterized by (a) negative family history of RA, (b) presence of acute, distinct RA symptoms following the experience of psychological conflict, and (c) rapid RA progression. Here psychological conflict was based on stressors, such as family mental illness, broken home background, personal mental illness, sexual problems, and several other major life crises. Further, Rimon observed that psychological stress often could be identified among the major conflict patients prior to exacerbation of disease activity. However, the no-conflict subgroup did not experience any apparent psychological conflict prior to the onset of RA. The latter subgroup was distinguished by (a) a relatively large number of positive family histories of RA, (b) insidious RA onset, and (c) slow symptom progression (Rimon, 1969). Similarly, Schochet et al., (1969) found that, in a sample of 12 rheumatoids, the onset and exacerbation of RA to be significantly related to the occurrence of life crises, especially loss of loved ones.

In short, in the 1960's the findings supported a neurotic pattern of personality characterized by a high degree of body concern, depression, and somatization in addition to difficulties with experiencing and expressing anger, hostility or aggressive impulses as well as problems dealing with loss and object relations.

1970-80s

In the 1970s some researchers observed that most findings on "RA personality" were more likely to be significant when compared to normal controls (Polley et al., 1970). Consequently, they started questioning whether RA shared a "chronic -disease personality" with other psychosomatic patients, as opposed to a "RA personality" per se (Spergel, Ehrlich & Glass, 1978). However, one should be cautious when interpreting the latter findings since those researchers (Spergel et al., 1978) did not perform any statistical analysis of the data. They only did an "eyeball" comparison of the MMPI profiles of RA patients and those of patients diagnosed with other chronic-psychosomatic diseases such as multiple sclerosis, gastric ulcers, and low back pain and found no difference among or between these groups of patients. Along the same line, other researchers failed to find differences between RA MMPI profiles and those of subjects with spinal cord injuries, multiple sclerosis (Boureston & Howard, 1965), hypertension, and ulcers (Moos & Solomon, 1964). In short, there is a significant difference characterized by a greater neurotic pattern in RA patients when compared to normal controls but not when compared to patients with other chronic diseases.

Robinson, Kirk and Frye (1971), with greater scientific rigor, attempted to validate early findings which described RA patients (in terms of personality) as repressing and controlling their feelings, as being shy, feeling socially inadequate, being self-sacrificing, and compulsive. Robinson et al., (1971) tried to replicate these findings using selected controls and Form A of the Sixteen Personality Factor (16PF) Questionnaire. This was a better controlled study, with more sophisticated methodology. They divided the RA

group into new (NRA, diagnosed less than six months) and old (ORA, diagnosed more than three years). The results showed that the 16PF profile scores of NRA correlated with those of the ORA group. According to the investigators, these findings could mean that either there is some RA personality type (predicting the disease and playing some role in the onset and course of it), or the pain and crippling brought about by RA, shapes the patients' personality to a common type regardless of their previous makeup. Further, in a later study, Robinson et al., (1972) compared NRA and ORA patients to new "other" arthritics and new and old pain controls. The results indicated partial support for the hypothesis. That is, out of ten profile correlations between patient groups, four were significant at or beyond the .05 level, three approached the .05 level, and the other three were not significant at the latter level (even though they were in the predicted positive direction) (Robinson et al., 1972). Again, there was a difference when compared to normals, but not when in comparison to other chronic disease control groups. Finally, these authors offered two explanations for the latter findings. "One is that there is some RA personality 'type' which predict the disease and plays some role in the onset and progression of the disease process. Another is that the pain and crippling associated with RA forces patients to common type regardless of their previous makeup" (Robinson et al., 1971, p. 800).

In the early 1970s the concept of "alexithymia" was introduced to the scientific world and subsequently was applied to explain the personality of RA patients. Alexithymia refers to personality traits such as the inability to fantasize and to verbalize feelings, a tendency to behave impulsively and to describe endless details and symptoms

rather than feelings (Sifneos, 1972) which have been found to be present in RA patients (Fernandez et al., 1989; McLaughlin et al., 1953; Moldopky & Chester, 1970; Vollhardt et al., 1982, 1986; Suran et al., 1989) and other psychosomatic patients (Nemiah et al., 1976).

As described by Lesser (1981), the "alexithymic individual describes endless physical symptoms, has an absence of fantasy production, has speech characterized by repetitive details, rarely dreams, and has interpersonal relationships characterized by dependency or aloofness" (Lesser, 1981, p. 532). Halliday (1942) was one of the first researchers to observe that RA patients are devoid of affect/emotion.

McLaughlin et al., (1953) studied dream recall and Moldofsky & Chester (1970) investigated mood patterns in RA patients. The results of these studies show that those RA patients who expressed relevant mood states or fantasies did better physically than those who did not express their moods and fantasies. Patients with RA may typify alexithymia in that they have been found to have constricted emotional expression (Halliday 1942; Ludwig, 1952, Moos & Solomon, 1965c, 1964b) and characteristics of language which can be interpreted as "alexithymic" (Shands, 1975; Lesser 1981).

Vollhardt et al., (1982) studied the psychological symptoms reported by three groups of RA patients. The first group was comprised of RA patients who were positive for serum rheumatoid factor and had erosive joint changes as measured by X-ray (SERA group). The second group consisted of RA patients who did not have rheumatoid factors or erosive joint changes (non-SERA group). The third group had arthritic diseases other than RA. These three groups were matched in terms of age, socioeconomic class, illness

duration (chronicity), extent of disability, and amount of pain experienced. The measures used were the Profile Mood States (POMS) and Brief Symptom Inventory (BSI). The results indicated that even though the SERA patients had the same number, intensity, and duration of arthritic symptoms as the other two groups, they had fewer associated emotional or psychological symptoms (Vollhardt et al., 1982). Four years later, Vollhardt et al., (1986) using 64 RA patients, (out of 68 from the original 1982 sample) attempted to assess whether alexithymia was only associated with the SERA group. Here it is important to point out that in this study characteristics of alexithymia were defined operationally and measured by the Thematic Apperception Test (TAT). Interrater reliability was determined by a research assistant blind to the hypothesis and study design. Average interrater agreement was 86.5% (range 80.1% to 89.3%). Regression analysis was utilized in this study. The results showed no difference among the three groups. In other words, RA patients as a whole (positive or negative for serum rheumatoid factor, with or without joint changes) and other arthritic patients may have the same degree of alexithymia.

More recently, Fernandez et al. (1989) have found a significant relationship between alexithymia and RA. These researchers tested 40 RA patients and 40 healthy controls (matched on socio-demographic variables) who were tested for alexithymia using the Beth Israel Hospital Psychosomatic Questionnaire (BIQ) and the Toronto Alexithymia Scale (TAS). Their results indicated that the RA patients scored significantly higher as compared to controls on both alexithymia scales (BIQ and TAS). Further, RA patients

who had greater functional impairment had significantly higher alexithymia scores (Fernandez, et al., 1989).

In short, research in the 1970s and 80s focused on "RA personality" versus "chronic-disease personality" and alexithymic personality traits characterizing RA patients in terms of their inability to fantasize, their description of endless details and symptoms rather than feelings, their total inability to verbalize feelings, and their tendency to act impulsively.

Methodological Flaws

While there is consistency regarding personality traits of RA patients among researchers, there is also some inconsistency, and the poor quality of the earlier research (1930-50s in particular) makes it difficult to make sense of this literature. Therefore, some of the findings described above warrant a great deal of caution due to the fact that this research area is limited by a full range of methodological weaknesses (Achterberg-Lawlis, 1982; Achterberg et al., 1981; Anderson et al., 1985).

According to Achterberg-Lawlis (1982) the main problem in this literature is that the diagnosis of forms of arthritis has been standardized by the American Rheumatism Association (ARA) only recently and adherence to the criteria by researchers is still incomplete. Achterberg et al., (1981) found that among the patients who responded to an advertisement put out requesting subjects diagnosed with RA for a study, two thirds did not fit the ARA's criteria for this disease. Other serious methodological flaws in the

RA personality literature has been outlined and discussed by Anderson et al. (1985) as follows:

(1) Differences across studies in theoretical orientations and in assessment procedures. These differences may vary from the use of a psychoanalytic orientation and projective measures to the use of behavioral perspective and standardized, objective questionnaires. In addition, Baum (1982) has reported that over 50% of research studies on the personality of arthritis patients utilized psychological tests that were developed by the researcher and which are usually not used by other investigators.

(2) Lack of attention to subjects' general medical condition and demographic characteristics. Moos and Solomon (1964) reported significant differences between the scores on the MMPI of RA patients for whom the disease course was fast and severe, compared to those for whom the course was slow and not severe. Vollhardt et al., (1982), in a well controlled study, have found that RA patients with positive rheumatoid factors showed fewer psychopathological tendencies compared to RA patients lacking rheumatoid factors and patients with other types of arthritis. Anderson et al. (1985) pointed out that the neglect of disease information and sociodemographic variables in this literature makes it impossible to distinguish potential differences within subgroups of RA patients.

(3) Overemphasis on "negative" personality characteristics such as hostility, dependence, and emotional constriction. This focus has provided little information about coping mechanisms employed by RA patients. On the other hand, Felton & Revenson (1984) and Felton et al. (1984) found a positive relationship between coping strategies

used by RA patients (i.e., information seeking and cognitive restructuring) and their self-reports of positive affect and disease adjustment.

(4) Lack of appropriate control groups (Blom & Nicholls, 1954; Holliday, 1942; Johnson et al., 1947; Ludwig, 1949, 1952, 1954, 1955; McLaughlin et al., 1953)

This review represents an attempt to address the controversial literature on the etiological role of personality in RA. Although the research area on "RA personality" has been severely challenged due to methodological flaws, it continues to stimulate scientific interest. The overemphasis on personality disturbance seen in the psychosomatic literature illustrates pervasive clinical views concurring personality pattern among RA patients (Genest, 1983).

In conclusion, it is important to point out that this literature warrants further research and methodological sophistication before one can draw more reliable conclusions about the role of personality in the etiology, onset, and course of RA.

C. ALEXITHYMIA

The purpose of this review is to describe the phenomenon of alexithymia, its etiological models, and its relationship to RA, if any.

Definition

The term "alexithymia" was coined by Sifneos (1972) to describe individuals with an inability to express their feelings verbally. He noticed this lack of affective vocabulary to be particularly characteristic of psychosomatic patients (Sifneos, 1972,

1973, 1977). Along with alexithymia, psychosomatic patients are thought to suffer from "pensee operateire" or an inability to fantasize (Achterberg-Lawlis, 1982). The phenomenon of alexithymia was described in a remarkably unanimous manner, at different times, almost all over the world (von Rad, 1984). According to Lesser (1981), the "alexithymic individual describes endless physical symptoms, has an absence of fantasy production, has difficulty finding appropriate words to describe feelings, has speech characterized by repetitive details, rarely dreams, and has interpersonal relationships characterized by dependency or aloofness. In treatment situations therapists find such patients dull and boring" (p. 532). Although the alexithymic individual is described in an unanimous way, researchers are still not completely clear as to whether (and if so, which) genetic, neuroanatomical or physiological, psychodynamic, developmental and/or sociocultural factors play a role in etiology of alexithymia (Alexander, 1950; Freyberger, 1977; Heiberg & Heiberg, 1977; Krystal, 1979; McDougall, 1974; MacLean, 1958; Nemiah, 1977; Sifneos, 1972, 1977; von Rad, 1977, 1984).

The studies discussed in the first part of this review suggest that thoughts and emotions can modify how the body reacts. One of the bodily reactions is disease. There is a good deal of evidence that illness or disorders such as RA, ulcerative colitis, peptic ulcer, cardiovascular disorder, neuro-dermatitis, and bronchial asthma are influenced, in terms of onset and course, by the psychological states of their sufferers. Such disorders are called psychosomatic and are defined as those disorders of the body (the soma) that influenced by, or triggered by, the mind (the psyche) of the individual (Alexander, 1950,

1956; Rimon, 1981; Rogers, 1989; Taylor, 1987; Vollhardt, 1986). Psychosomatic is the study of the relationship between emotions and bodily illness. According to Mallett (1965), people cannot weigh guilt or calculate which is an infective dose of fear and yet guilt and fear may have just as much potential to produce disease as a virus.

Historically, Hippocrates stated that to cure people doctors had to have knowledge of the mind and the body. Socrates came to the realization that the body could not be cured without the mind (in Lewis & Lewis, 1975). Over the centuries experts have studied the role of emotions in producing illness. The term "psychosomatic" was first used by John Christian August Heinroth in 1818, who viewed the body and the soul as one, and madness as a disease of the entire being. In 1838 Christian Friedrich Nasse stated, "The business of recognizing, preventing, and treating conditions of mental disorders rests upon the fundamental investigation of the simultaneously psychic and somatic activity of man. Here it finds its scientific support, from here it gains light and learns the road." (in Overholser, 1948, p. 231). Still in the 19th Century Pierre Cabanis maintained that emotions which were not dealt with could have pathological consequences on the body. He further suggested that the field of medicine needed to adopt a "psychosomatic approach" in treating diseases (in Lewis & Lewis, 1975).

In the early 1900's, Freud studied the somatic involvement found in conversion hysteria (i.e., paralysis of limbs) and believed it to be of psychogenic origin. For him conversion hysteria had a primary psychic cause and meaning. In other words, it represents the symbolic substitute expression of an unconscious conflict. It involves organs innervated only by the sensory-motor or voluntary neuro-muscular nervous

system. Ferenezi (1910) applied the concept of conversion hysteria to organs innervated by the autonomic nervous system. For instance, the bleeding of ulcerative colitis could be interpreted as representing a specific psychic fantasy (in Kaplan and Sadock, 1981).

In the 1940's through the 1960's, a number of psychoanalyst continued to focus their attention on psychodynamic processes in psychosomatic patients. Deutsch (1949, 1964) recognized the influence of repressed emotional conflicts and the unconscious on the functioning of an organ. Deutch asserted that psychosomatic symptoms are the end product of long-existing psychic dynamic processes that always have their origins in the past. That is, trauma during birth, infancy, and childhood predisposed the individual to adult psychosomatic disease. He claimed that the dysfunction of the organic process disappeared when unconscious conflicts were made conscious. Alexander (1950, 1968) is one of the most famous influential psychoanalytic theorists in the area of psychosomatic disorder. He postulated that people who are genetically vulnerable in a specific organ have specific psychodynamic conflicts and will develop disease of that organ whenever the stress of living arouses their psychodynamic conflicts, and they are no longer able to defend against these conflicts. All three factors (a vulnerable organ system, an underlying dynamic conflict, and a precipitating life situation) interact to produce the disorder.

The theorists described above have all contributed to our current understanding of the relationship between emotions and bodily illness or psychosomatics. Most of the latter literature was comprised of theoretical papers and some were research studies

which involved very unsophisticated methodologies. Nonetheless, they represent attempts toward understanding psychosomatic disorders.

Models of Alexithymia

Studies show that although the alexithymic individual is described in a similar way almost all around the world, researchers are still not completely clear as to whether (and if so, which) genetic, neuroanatomical/physiological, psychodynamic, developmental and/or sociocultural factors play a role in the etiology of the disorder (Alexander, 1950; Borens, et al., 1977; Heiberg & Heiberg, 1977, 1978; Krystal, 1979; Lesser, 1981; McDougall, 1974; MacLean, 1958; Nemiah, 1977; Sifneos, et al., 1972, 1977; von Rad, 1977, 1984). These models will now be discussed briefly.

Genetic

Heiberg and Heiberg (1977, 1978), have carried out two twin studies in Norway, using the Beth Israel Psychosomatic Questionnaire. Thirty three pairs of twins (fifteen monozygotic and eighteen dizygotic) were studied. The results showed that the intrapair differences on the questionnaire were statistically significant. Based on these findings, these researchers concluded that there was a strong hereditary predisposition to alexithymia. For instance, monozygotic twins appeared to have a higher concordance for alexithymic characteristics as compared to the dizygotic pairs, who did not share the latter findings. Lesser (1981) has criticized these findings on the basis of a small sample and the absence of socio-cultural variables. In sum, given the limited number of studies

and the small sample size used, it seems premature to conclude (with any degree of certainty) that there is indeed a genetic predisposition to alexithymia. That is to say that further research (of better methodological quality) is necessary before one can determine the role (if any) genetics play in the development of alexithymia.

Neuroanatomical/Neurophysiological

Both MacLean (1949) and Nemiah (1977) have suggested that due to deficits in the connections between the neocortex and the limbic system, emotions are then expressed directly in the organs of the body through neuroendocrine and autonomic pathways. Consequently, a discontinuity may occur in the functions of both systems (neocortex and the limbic system). Nemiah (1975, 1977) further elaborated this model. She argued that alexithymia may result from a neurophysiological defect influencing modulation by the stratum of input from the limbic to the neocortex. Similarly, Sifneos (1972, 1977) proposed that alexithymia is an unknown genetic or developmental defect which theoretically disrupts the neuronal connections between the limbic system and areas of the neocortex and may also involve the paleostriatal dopamine tract. Hence, neural activity related to drive arousal is not processed through higher cortical areas.

Finally, Hoppe and Bogen (1977) have also postulated that alexithymia represents a state of "functional commissurotomy," or lack of interhemispheric communication. Therefore, feelings and conflicts are not articulated but, instead, might be translated into somatic pathways. This implies that there may be literally no vocabulary for feelings and a failure to process the cognitions involved in these mental processes. "Pensee

opératoire" (which means the inability to fantasize) is believed to coexist along with alexithymia. Hence, the alexithymic patient may not only be unable to express feelings, but may also be unable to fantasize (Achterberg-Lawlis, 1982; Nemiah, 1977).

Developmental and/or Sociocultural Factors

Family and/or sociocultural-environmental factors may play a crucial role in the inability to learn to associate and to verbalize emotions with fantasies and thoughts which, in turn, may further predispose the individual to psychosomatic disorders. Thomas (1989) has studied the relationship between different modes of the expression of anger and the current health status of mid-life subjects. A significant relationship was found between somatic expression of anger and the level of subjects' health. Further, Thomas points out that this relationship had a stronger statistical significance for females than for males. In addition, females were more likely to express their anger through somatization. This relationship was found to be true even in those females who ventilated their anger outwardly, without suppression. These findings suggest that it may not simply be the expression of anger itself that is related to health but (more importantly) the "unhealthy" (somatic) mode of expression. The concept of alexithymia is contaminated by Western philosophy and thought, which postulates that expression of emotions (verbal or otherwise) is always healthy. Thomas' (1989) findings indicate that this implicit Western philosophy may not always be supported in this culture nor is it supported in other cultures. Researchers studying the expression of emotions and psychiatric illness in Eastern cultures have found that verbal expression of affects is not

common. Instead, psychological distress is usually expressed through either somatization or highly intellectualized verbal exchange (Kleinman, 1976; Lin, 1980; Marcella et al., 1973). In addition, Taylor (1987) and von Rad (1984) have claimed that the phenomenon of alexithymia has been described with remarkable unanimity, at different times, almost all over the world.

Given that alexithymia is as pervasive as argued above, then researchers need to speculate about socialization patterns and family dynamics. In a review of the literature on families, Haggerty (1983) has concluded that there is currently reasonable support for the concept of the "psychosomatic family" and its organizational variables (over-closeness, avoidance of conflict, and use of detouring mechanisms which include stable parent-child coalitions, focusing the conflict on a child, and presenting avoidant behavior by one or the other spouse, like alcoholism or leaving the home) that may influence the course of psychosomatic disorder in a family matrix. These conclusions were based on observations of psychosomatic disorders in children only. Finally, Borens et al., (1977) have found a relationship between alexithymia and social class in psychosomatic patients. Patients from the lower class showed fewer affect-laden responses, fewer fantasy responses, and less verbal ability during the interview situation. Similarly other researchers (Cremerius, 1977; Lesser et al., 1979; Pierloot & Vinck, 1977) have found support for the relationship among alexithymia, social class, and level of sophistication of the patient in terms of the ability to fantasize and verbally express emotions. Here it is important to point out that the latter two studies included the Wechsler Adult Intelligence Scale (WAIS) as a measure of IQ in order to partition out its possible

confounding effect on the relationship between social class and alexithymia. Finally, they also included adequate sample sizes.

Psychoanalytic/Psychodynamic

Psychoanalytic models have attempted to explain the development of psychosomatic symptoms as intrapsychic conflicts, repression, regression, and ego deficits. Alexander (1950) postulated that psychosomatic symptoms develop as a result of the repression of specific affects/emotions. In this process there appears to be chronic autonomic arousal which, due to the repression of emotions, cannot be discharged in overt emotional expression. Over time, this constant arousal may eventually cause lesions in the organs supplied by the autonomic nervous system. This, if severe enough, may lead to the onset of a psychosomatic disorder. Recent research has shed more light on the latter phenomenon. For instance, Loiselle and Dawson (1988) have found that alexithymia may not be a product of repression, but may be a different phenomenon. That is, alexithymic subjects show impairment in processing emotions, as compared to "repressors" who process affects but are less verbal than the average person. The alexithymics do not deny the relevance of affective/emotional disclosure. However, they seem to find it more difficult to discuss the latter emotionally charged material (Loiselle & Dawson, 1988).

Another model of alexithymia is that of McDougall (1974), which states that the specificity of psychological conflicts stem from interactions between mother and child, and predispose the psychosomatic patient to utilize such defense mechanisms as denial and regression in excess. This, in turn, leads to their inability to fantasize, and forces

them to utilize a concrete way of thinking ("pensee openatoire) in a compensatory manner (McDougall, 1974). Similarly de M'Uzan (1974) ascertained that some infants fail to make use of hallucinatory phenomena as a way of comforting and protecting themselves. This inability, in turn, would lead to the adult's inability to engage in mental activity (i.e., fantasy), which could serve similar functions (de M'Uzan, 1974). In addition, the study of Stephanos (1975) offers support for the hypothesis that very early or preoedipal difficulties seem to be of great importance in alexithymic patients (Stephanos, 1975). Finally, Krystal (1979) has postulated that massive regression in psychosomatic patients can lead to a primitive state of functioning, playing an important role in the development of alexithymia (Krystal, 1979).

The rigidity of alexithymic patients plus their resistance to psychoanalytic treatment led Nemiah (1977) and Sifneos (1977) to hypothesize the likelihood of a disturbance of ego functions resulting from developmental arrest or ego regression. Ludwig (1951) stated that, perhaps due to their inability to deal with loss, the two main dynamic issues for RA patients are crucial affects and ego alterations. "Affect is largely, or even solely, expressed through autonomic and somatic channels, with blocking of outward expression...The ego is very weak, precariously situated, and fragmented, crushed between overpowering primitive id forces, and a primitive archaic super ego" (in Deutsch, 1955, p. 129). Solomon and Moos (1965) compared the psychological health of RA patients with their physically healthy relatives and found that the "RA relatives" showed particularly high ego strength compared with the RA patients. These findings led Solomon and Moos to suggest that these relatives might have developed RA if they

had low ego strength. In addition, Solomon and Moos suggested that the combination of low ego strength and genetic predisposition might result in the onset of RA. Further, in a more recent study, Solomon and Moos (1984) found that female RA patients show more sensitivity to anger and denial of hostility than their healthy sisters.

Current psychodynamic theory supports the view that it is object relations and not tension reduction which is fundamentally crucial. According to this view alexithymic patients may unconsciously link the expression of affect with danger and activate its ego defenses such as denial, disavowal, splitting, projective identification, repression, reaction formation, and isolation to bar them from consciousness. These patients may not even be aware of how they betray their inherent disposition by the physiological arousal of a particular internal organ, by the tone of their voice, the flushed face or the tightening of their fists, jaw or neck muscles. The patient's preconscious appraisal of a situation as actually or potentially traumatic or dangerous brings about the formation of a painful affect. This affect triggers a reaction in which attention is redirected from disturbing affect to something else. Hence, denial is used to screen painful emotions or affect (Dorpat, 1983).

Alexithymia and Rheumatoid Arthritis

Based on the alexithymic hypothesis, Achterberg & Lawlis (1981) have proposed a psychosomatic model for RA. This model bridges knowledge from neurophysiology and psychodynamic findings which have contributed to our understanding of this chronic disease. Achterberg & Lawlis (1981) have postulated that alexithymic personality traits

may play a role in the development and course of RA through the following mechanisms:

- (1) Stress from the external environment may result in somatic change which can be expressed in any of the autonomic responses accompanying fear, anger, love or other feelings.
- (2) Due to this somatic change, neither the subjective right hemisphere nor the verbal hemisphere of the brain can process or label emotional information. Then what happens, in this case, is a complete somatic emotional response, but a "defective" cognitive one.
- (3) This somatic response may include muscle tension as an antecedent to symptoms. Muscle tension has been found to increase joint pain and intra-articular temperature (Harvath & Hollander, 1949). Therefore, muscle tension may accelerate destructive activity in the joints themselves.
- (4) The unlabelled, diverted emotions may also be concentrated on hypothalamic activity. If so, the whole autonomic system could be involved. By the same token, the immune system (which is under central nervous system control and in particular influenced by hypothalamic activity) would be affected. Rogers et al., (1979) have maintained that CNS change leads to immunologic change via the mechanism of hypothalamic-pituitary-hormonal stimulation. In addition, Besdovsky et al., (1977) suggest there is evidence for an afferent link, triggered by an immune mechanism, in which a message is sent to the hypothalamus whenever an immune reaction occurs. Hence, this may be a two-way process where the hypothalamus can both respond to immunologic changes as well as affect these changes. In the case of RA, Achterberg & Lawlis (1981) believe perhaps the defect is not in the antibody reactions per se but rather

a defect in the signals from CNS areas (i.e., the hypothalamus) which initiate the reactions.

(5) As for the "denial of affect/emotion" appearing throughout the RA literature, Achterberg & Lawlis (1981) explain that it is not denial in the psychoanalytic sense as in having a mental block that serves as a defense mechanism. Instead, this denial of emotions relates to a very serious problem of, literally, not having words for feelings. Denial may reflect an actual failure to process the cognition involved (Achterbert & Lawlis, 1981).

According to Achterberg-Lawlis (1982) RA patients are alexithymic in that they are poor at fantasizing and verbalizing feelings and they think operationally. However, the actual research literature on the relationship between Alexithymia and RA is very limited. McLaughlin et al., (1953) studied dream recall and Moldofsky and Chester (1970) investigated mood patterns in RA patients. The results of these studies show that those RA patients who expressed relevant mood states or fantasies did better physically than those who did not express their moods and fantasies. Patients with RA may typify alexithymia in that they have been found to have constricted emotional expression (Halliday, 1942; Ludwig, 1952) and characteristics of language which can be interpreted as "alexithymic" (Shands, 1975; Lesser 1981).

Vollhardt et al., (1982) studied the psychological symptoms reported by three groups of RA patients. The first group was comprised of RA patients who were positive for serum rheumatoid factor and had erosive joint changes as measured by X-ray (SERA group). The second group consisted of RA patients who did not have rheumatoid factors

or erosive joint changes (non-SERA group). The third group was mixed. That is, these patients had arthritic diseases other than RA. These three groups were matched in terms of age, socioeconomic class, illness duration (chronicity), extent of disability, and amount of pain experienced. The measures used were the Profile of Mood States (POMS) and Brief Symptom Inventory (BSI). The results indicated that even though the SERA patients had the same number, intensity, and duration of arthritic symptoms as the other two groups, they had fewer associated emotional or psychological symptoms (Vollhardt et al., 1982). Four years later, Vollhardt et al., (1986) using 64 RA patients (out of 68 from the original 1982 sample) attempted to assess whether alexithymia was only associated with the SERA group. Here it is important to point out that in this study characteristics of alexithymia were defined operationally and measured by the Thematic Apperception Test (TAT). Interrater reliability was determined by a research assistant blind to the hypothesis and study design. Average interrater agreement was 86.5% (range 80.1% to 89.3%). Regression analysis was utilized in this study. The results showed no difference among the three groups. In other words, RA patients as a whole (positive or negative for serum rheumatoid factor, with or without joint changes) and other arthritic patients may have the same degree of alexithymia.

Finally, in India, Fernandez, Sriran, Rajkumar, and Chandrasekar (1989) have found a significant relationship between alexithymia and RA. These researchers tested 40 RA patients and 40 healthy control subjects (matched on socio-demographic variables) for alexithymia using the Beth Israel Hospital Psychosomatic Questionnaire (BIQ) and the Toronto Alexithymia Scale (TAS). Their results indicated that the RA patients scored

significantly higher as compared to controls on both alexithymia scales (BIQ and TAS). Further, RA patients who had greater functional impairment had significantly higher alexithymia scores (Fernandez, et.al., 1989).

To summarize this literature, it surfeits to say that further research is necessary to determine if there is a significant relationship between alexithymia and RA. Although alexithymia has been described in an unanimous way almost all around the world, researchers are still not completely clear as to whether genetic, neuroanatomical/neurophysiological, psychoanalytical/psychodynamic, developmental and/or sociocultural factors play a role in its etiology.

As for the relationship between alexithymia and RA, the literature is still very limited in size and the few findings are inconsistent. Therefore, further research is definitely necessary to determine whether alexithymia plays a significant role in the etiology, onset, and course of RA. If it does indeed, one could infer that a coping style of inhibited emotional expression may contribute to the disease. Hence, in addition to object relations, this study is investigating the relationship between RA and alexithymia.

D. SOCIODEMOGRAPHIC FACTORS AND RHEUMATOID ARTHRITIS

This section will deal with the demographic variables such as age, gender, marital status, race, socio-economic status (SES), chronicity, and presence or absence of rheumatoid factor which have been found to be relevant to the psychological aspects of RA patients. Anderson et al., (1985) pointed out that the neglect of socio-demographic

and disease information variables is a serious methodological flaw that makes it impossible to partition out potential differences among subgroups and RA patients.

The present study represents a methodological improvement over previous ones because it will include such descriptive information on the participating subjects. The following paragraphs represent a review of the available research on each demographic variable as it relates to the psychological aspects of patients suffering from RA.

Age

"Rheumatoid Arthritis usually starts between the ages of 20 and 50, but it can begin as early as infancy or as late as 90 or more" (Arthritis Foundation, 1983, p. 4). Thus, arthritis is not a disease reserved for older persons. In the United States, according to the Arthritis Foundation (1984) about 100,000 children may suffer from some form of rheumatic disease, among which is juvenile Rheumatoid Arthritis (JRA). Until recent years, physicians and/or researchers believed JRA to be a single, chronic disease like RA for adults. However, they now realize that there are, at least, three forms of JRA: (1) Systemic JRA, usually affecting many areas of the body, including internal organs; (2) Polyarticular JRA, which affects many of the child's joints, and (3) Pauciarticular JRA, which only affects a few of the patient's joints.

Scientists recognize that RA in children is different from that in adults. First, the prognosis for children diagnosed with JRA is better than for adults with RA. Usually, JRA involves fewer joints and the flare-ups last for a short period of time, except for a few serious cases. For instance, JRA signs and symptoms can change from one day to

the next, and sometimes from one part of the day to the next. Joint stiffness and pain may be mild one day and very severe on the following day, to the point that the child can hardly move (Arthritis Foundation, 1984). In addition, Westbrook and Viney (1982) have found a significant relationship between age and RA in a sample of chronic patients.

Gender

According to the latest Nationwide Survey on Arthritis (Sobel & Klein, 1989), RA affects about three times more women as compared to men. Cobb et al., (1969) found greater psychological disturbance in female RA patients. For instance, these women showed continuous conflicts over the expression of aggressive impulses. Female RA patients revealed a high level of anger but wanted to control it (as compared to healthy women). The RA men (when compared to RA women) were found to be lower on anger and aggression. The marriages of RA men and healthy women were found to be low on marital hostility. On the other hand, the RA women and healthy men scored high on marital hostility (Cross, et al., 1969).

Apfel (1982), in an overview of psychosomatic problems in women, has pointed out that in terms of chronic diseases (such as RA) women report such diseases more frequently than men. In addition, women seem to restrict activity and to be disabled many more days due to problems related to the disease compared with men. Further, the author raises sociocultural explanations (i.e., women's perception of disability, acceptance of sick role, etc.) to account for the latter findings.

Contrary to the findings described above, Earle, et al., (1979) have found that gender is not associated with adjustment for RA patients. Zaphiropoulos and Burry (1974) found similar results when studying chronicity and depression in patients. However, these researchers did notice that for the specific patients for whom depression had an impact on adjustment, the effect seemed to have come early in the course of the disease in men, but later on in women. Nevertheless, these findings were not significant for the overall sample. Finally, the latter findings have to be interpreted with great caution, since the reliability and validity of the measures of adjustment are questionable.

Marital Status

Liang et al., (1984) have found that married patients showed a trend to have higher MMPI hypochondrias scores. Other researchers such as Cobb et al., (1959, 1969) Levitan (1981), as well as Medsger and Robinson (1972) found high levels of marital dysfunction to be significant stressors among RA patients. However, Rimón (1969) reported that marital status was not associated with depression scores for RA patients.

Ethnicity

According to the Arthritis Foundation (1990) RA affects people from all races. However, this researcher was unable to find specific studies comparing RA patients of different races and ethnic backgrounds.

Socioeconomic Status (SES)

Earle et al., (1979) has found a significantly positive relationship between SES and measures of adjustment in RA patients. More specifically RA patients in the higher SES groups showed better adjustment in each measure. However, Rimon (1969) failed to find a relationship between SES and depression in RA patients.

Meenan et al., (1981) studied the impact of RA on the patients' work, finances, and psychosocial adjustment. They found that 59% of the patients who reported having a job at the time of the RA onset were no longer employed at the time of the study (on the average 9 years later). Out of this group, 82% attributed the change in the work-status to RA.

Other researchers have found an over-representation of low SES children JRA and a disproportionately low representation of JRA children in the upper SES group (Hill & Walters, 1969; Rimon et al., 1977). Previously, Cobb et al., (1939) had reported similar findings among adult RA patients.

Chronicity

Robinson, Kirk, and Frye (1971) used selected controls, the Form A of the Sixteen Personality Factor (16PF) Questionnaire, and divided the RA patients into new (NRA, diagnosed less than six months) and old (ORA, diagnosed more than three years). The results showed that the 16 PF profile scores of NRA subjects correlated with those of the ORA group. According to the investigators, these findings could mean that either there is some RA personality type (predicting the disease and playing some role in the onset

and course of it) or the pain and crippling brought about by RA shapes the patients' personality to a common type regardless of their previous makeup. Further, in a later study, Robinson, Kirk, Frye, and Robertson (1972) compared NRA and ORAs to "new other arthritics". The results indicated partial support for this hypothesis. That is, out of ten profile correlations between patient groups, four were significant at or beyond the .05 level, three approached the .05 level, and the other three were not significant at the latter level, even though they were in the predicted positive direction (Robinson et al., 1972). Again, there was a difference when compared to normals but not when in comparison to other chronic disease control groups.

Crown and Crown (1975) reported a positive relationship between psychological disturbance (as measured by MHO) and chronicity. However, Zaphiropoulos and Burry (1974) failed to find a relationship between chronicity and depression. However, the authors note a tendency in RA patients, for whom this relationship was significant, that men tended to be depressed early in the course of the disease, while women tended to feel that way later on in the process. Finally, these findings warrant caution due to questionable reliability and validity of the measures of adjustment employed by the authors.

Rheumatoid Factor

Rheumatoid Factor (RF) is an abnormal antibody often present in the blood of people with rheumatoid arthritis. It is detected by RF blood test or RA latex test. These blood tests determine the presence or absence of RF, and if so, how much is

present. Rheumatoid factor is considered an antibody against the gamma globulin fraction of the blood. Given that globulin itself represents antibody molecules, RF is an antibody against other antibodies (or an abnormal antibody). Researchers have found large amounts of RF in the blood of RA patients (Arthritis Foundation, 1984).

Vollardt et al., (1982) have studied RA patients who were RF positive and negative. They divided their sample into three groups. The first group, comprised of 18 RA patients, were positive for serum RF and had erosive joint changes as measured by X-ray (SERA group). The second group consisted of 20 patients who met the American Rheumatologic Association criteria for rheumatoid arthritis but lacked a combination of serum RF and erosive joint changes or were RF negative (non-SERA group). Finally, the third group included a mixture of 30 patients diagnosed with various other forms of chronic nonrheumatoid arthritis (the mixed arthritis group). These three groups were matched in terms of age, socioeconomic class, illness duration (chronicity), extent of disability, and amount of pain experienced. The measures used were the Profile Mood States (POMS) and Brief Symptom Inventory (BSI). The results indicated that even though the SERA patients had the same number, intensity, and duration of arthritic symptoms as the other two groups, they had fewer associated emotional or psychological symptoms (Vollhardt et al., 1982). On the other hand, Crown and Crown (1975) reported that RA patients who were sero-positive for rheumatoid factor did not score as high on the measure of psychoneurotic illness as did those sero-negative subjects. Psychoneurotic illness was measured by the Middlesex Hospital Questionnaire.

Along the same line, Gardiner (1980) found that RA patients who were sero-positive were less vulnerable to psychiatric disturbance than those patients who were sero-negative for rheumatoid factors, as measured by the General Health Questionnaire. Finally, Pow (1987) found no difference between RA patients who were sero-positive and those who were sero-negative for rheumatoid factors, in terms of psychopathology, except that the sero-positive group experienced more phobias. However, Pow noticed a tendency of sero-positive patients to show a negative style of thinking, especially in regard to their disease, and they were more likely to believe in the power of external forces (Pow, 1987). Further research is necessary before one can determine the relationship between the presence/absence of serum for rheumatoid factor and the psychological health of RA patients.

This review included the literature on the following demographic and disease information variables - age, gender, marital status, SES, chronicity, and presence or absence of rheumatoid factor - as they relate to the psychological aspects of RA sufferers. The findings reflect inconsistencies which, in part, may be due to methodological flaws such as using different measures for the dependent variable (i.e., for psychological adjustment), some of which have not been tested in terms of reliability and validity. Therefore, this area warrants further research in order to determine the role these variables play in partitioning out differences between/among subgroups of RA patients. The present study will include the latter variables in the description of the sample.

CHAPTER III

METHODOLOGY

This is an exploratory study of the object relations of adult RA patients in comparison to other control groups. In addition, this research examined the association of alexithymia and RA. More specifically, the following **exploratory hypotheses** were investigated:

1. Rheumatoid Arthritis subjects will differ from normal controls in object relations scores as measured by the BORI four subscales and the WORSCS four scales. No specific hypothesis is stated regarding differences in object relations scores between the RA and the other psychosomatic (colitis) subjects.
2. Rheumatoid Arthritis subjects will differ from normal controls scores on alexithymia as measured by TAS. No differences were predicted in terms of alexithymia scores between the RA and the other psychosomatic (colitis) subjects.

A. SAMPLE

This study is a part of a larger research project to investigate differences in personality characteristics, emotions, and object relations among patients diagnosed with the following psychosomatic disorders: gastric ulcer, idiopathic hypertension, Rheumatoid Arthritis, and ulcerative colitis, in comparison with a healthy, non-psychosomatic control group.

The present sample was comprised of 50 subjects (20 RA patients, 10 colitis, and

20 healthy normal controls who have never been diagnosed with a psychosomatic/ mental disorder), ages 19 through 66 matched by gender, age and ethnicity. The Rheumatoid Arthritis patients were recruited from the following sources: (a) newspaper advertisements in The UT Daily Beacon, The Knoxville News-Sentinel, and The East Tennessee Catholic Newspaper (Appendix A); (b) the UT Psychology Department's Undergraduate subject pool (Appendix B); (c) the UT Evening School psychology classes; (d) the Knoxville Arthritis Association; (e) the Oak Ridge Arthritis Club, and (f) the word of mouth passed on by RA patients who had already participated or friends of this researcher who recruited their friends who had been diagnosed with rheumatoid arthritis. Each RA patient received \$15.00 for full participation except for four subjects who volunteered.

The colitis subjects were also obtained from the same sources as the RA participants in addition to cooperation of medical doctors in Morristown and Nashville (TN) who were primary care for these patients at the time. These data were collected mostly by Kid Keinath, this author's research partner, who is doing research with these patients. Some colitis patients received \$15.00 for full participation and others volunteered for the project.

The 20 non-psychosomatic healthy control subjects were recruited from (a) UT Evening School undergraduate psychology classes for those who are older and work out in the community full-time and are pursuing a degree part-time); (b) two subjects came from the UT Psychology Department's undergraduate subject pool; (c) healthy friends of psychosomatic patients who had already participated in this research, and (d) healthy, non-psychosomatic volunteers from physicians practice in Morristown, TN. Those

subjects who came from a psychology class received extra credit for full participation while the participants from other sources simply volunteered. Here, it is important to point out that this project was approved by the University of Tennessee (Knoxville) Board for Research Involving Human Subjects.

B. PROCEDURES FOR DATA COLLECTING

The RA subjects first were interviewed by this researcher to determine whether they were in the appropriate age range (19-60s) and for RA diagnosis screening (as opposed to the other 199 types of arthritis as determined by blood tests). Here it is important to point out that although in the proposal the age range stipulated was 20-60; in reality this researcher found that the majority of the RA population clustered around 65 through 80 years of age. For instance, 18 subjects were turned down because they were in their 70s and 80s and it was difficult to find comparable healthy, non-arthritic controls willing to participate in the research. Some of the RA patients (12 out of 20) were tested in their homes because they could not drive themselves or be driven to the UT Campus due to their crippling physical condition and pain. The other 8 RA patients were tested in the researcher's office, UT Psychology Department, room 416-E. At the interview this researcher explained the project, obtained informed onset and sociodemographic data (age, gender, marital status, ethnicity, and level of education) as well as disease information (chronicity and RA factor whether -/+) data. Specifically for the RA subjects the Informed Consent Form (Appendix C) in addition to agreeing to participate in the study, the patient gave permission for this researcher to obtain the following information from their rheumatologist: confirmation of RA diagnosis, duration of

diagnosis, and whether the patient was RA factor positive or negative (Appendix D). All 20 RA subjects signed the informed consent. However, 10 out of 20 of these participants presented copies of their medical records which provided the required medical information and requested that their physician not be contacted and some of them stated their doctors "would not like psychological explanations for RA." The other 10 RA participants agreed to have their doctors contacted to provide the requested medical information. This information was obtained from those doctors. The colitis patients were tested in the UT Psychology Department as well as in their doctors' office after their regular appointments. Usually, their doctors recruited them beforehand and explained the study. As for the normal controls, they signed up in class, on the UT Psychology research bulletin board, and just contacted them by phone. All the healthy controls were tested at the UT Psychology Department, in the researcher's office. During the testing session, all subjects were asked to fill out the following paper and pencil measures: The Bell Object Relations Inventory (BORI), The Toronto Alexithymia Scale (TAS). In addition, they were asked to respond to 6 cards from the Thematic Apperception Test (TAT), to fill out a background information sheet form (Appendix E) and (for RA patients) a medical history form (Appendix F). The data on chronicity (duration of disease) were provided by the rheumatologist with the patient's written consent (Appendix C).

Each subject was tested individually in one session. This researcher and/or her assistant were available throughout the testing session to provide assistance and answer questions. Some of the RA patients need help in completing the scales because it was

too painful to hold the pencil. The data collection procedure was uniform for all these groups.

C. MEASURES

Object relations theory focuses on how an individual perceives and responds to interpersonal interactions and how these perceptions and interactions are psychically represented. Fairbairn (1963); Jacobson (1952); Kernberg (1976); Mahler (1968), and Mahler, et al. (1975) all have contended that the root of personality comes from early mother-child interactions which are later enacted in other relationships. Basically, object relations are a result of mental representations of self and others which are internalized over the course of development. In other words, the construct of mental representation is thought to be the intrapsychic structures of the mind which help regulate affect and determine the capacity for human relatedness (Kernberg, 1976; Kohut, 1980; Mahler et al., 1975). These representations serve as templates for contemporary experiences which grow from little differentiation and integration to become more differentiated and flexible over the course of maturation. A disruption of the pattern of growth may lead to psychopathology and developmental arrest (Kernberg, 1976).

In the present study object relations were measured by The Bell Object Relations Inventory and The Westen Object Relations and Social Cognition Scales which is based on The Thematic Apperception Test.

The Bell Object Relations Inventory (BORI) is embedded within the Bell Object Relations and Reality Testing Inventory or BORRTI (Bell, Billington, and Becker, 1985) which was developed to yield an objective and empirical measure of the object relations

and reality testing ego functions as defined by Bellak, Hurvich, and Gedimanos (1973). That is, Bell and his associates took Bellak and colleagues measure of object relations and expanded it into an empirical and objective measure of object relations.

The Bell Object Relations Inventory which consists of forty-five true/false statements that represent a range of object relations in the form of quality of interpersonal relationships (Appendix G). Each item was previously assigned a value ranging from a low of 1 to a high of 6.5 on its correspondence to Bellak et al.'s (1973) clinical descriptions (from which was developed the scale of ego functions). Scoring object relations yields four subscales derived from factor analysis: Alienation, Insecure Attachment, Egocentricity, and Social Incompetence (Appendix H). In each subscale elevation is determined by a hand scoring system (Appendix I) developed by Bell et al., (1985). In terms of reliability, the subscales have shown good levels of split-half reliability ($r = .86, p < .001$). Further, they seem to be generally free of response bias as relating to age, sex or social desirability (Bell, Bellington, Cicchetti, & Gibbons, 1988; Gibbons, 1984). The validity of the subscales was investigated by comparing the following groups: psychotic inpatients, college students and community agency directors. Results from separate ANOVAS indicated significant differences between the psychiatric group and the combined student-director group.

Miripal (1982) compared the Bell Object Relations Inventory (BORI) to several projective measures of object relations and found the former Inventory (BORI) to be a reliable and valid measure of object relations. Other researchers have successfully used the Bell Object Relations Inventory to study interpersonal orientations and sexual decision making (Randolf, 1984), to assess object relations in terms of therapeutic outcome

(Engelman, 1985), to examine the object relations in bulimic college women (Becker, Bell, & Billington, 1987), and to distinguish borderline personality disorder patients from other groups with personality disorders in terms of object relations ego deficits (Bell, Billington, Cicchetti, & Gibbons, 1988).

The Westen Object Relations and Social Cognition Scale or WORSCS (Westen, Lohr, Silk, & Kerber, 1985) is a scoring system developed by Westen, based on TAT (Thematic Apperception Test) responses which measures four dimensions of object relations: (1) complexity of representations of people; (2) affect-tone of relationship paradigms (the affective quality of the object world, from irrelevant to benevolent); (3) capacity for emotional involvement in relationships and moral standards (need-gratifying orientation to the social world vs investment in values, ideals, and committed relationships), and (4) understanding of social causality (tendency to attribute causes of behaviors, thoughts, and emotions in a complex, accurate, and psychologically minded way). Each dimension is measured with a 5-point scale, using a detailed scoring manual (Westen et al., 1985). The authors have found multiple coder reliabilities in the range of .85 to .95. Except for affect-tone, the other three scales attempt to assess developmental dimensions (i.e. Level 1 is relatively primitive, and Level 5 is relatively mature). These dimensions are based on object relations theory which assumes that an infant begins with very little differentiation of self from others and proceeds to a level where the self is well established and well integrated. People who are fixated at lower developmental levels have no cohesive sense of self or others. Their relationships are chaotic. For them objects are perceived and used in terms of their potential to gratify needs. At a higher level of object relations individuals are able to see others as whole

persons separate from themselves and relate to them with concern and interest (Kernberg, 1976; Winnicott, 1963). See Appendices J and K.

Several studies have been done on the validity of these four dimension of object relations with both normal and clinical populations. They have been used successfully to distinguish borderline patients from psychiatric and normal subjects in adult as well as adolescent samples with 80% accuracy using responses to five and seven TAT cards (Westen, Ludolph, Lerner, Ruffins, & Wiss, 1990; Westen, Ludolph, Silk, Kellam, Gold, & Lohr, 1990). In a sample of normal subjects, the four TAT object relations scales have been found to correlate with four similar scales. For instance, complexity of representations on the TAT correlates with complexity of representations as measured from interview data. In addition, TAT scales and Loevinger's (1976) Sentence Completion Test for Ego Development correlate in terms of affect-tone as well as capacity for emotional investment, and Blatt, Wein, Chevron, & Quinlan's (1979) measures of complexity plus affective qualities of parental representations as applied to descriptions of significant others (Barends, Westen, Byers, Leigh, & Silbert, 1990). These TAT scales have also predicted social adjustment as assessed by Weissman's Social Adjustment Scale (Weissman & Bothwell, 1976) in clinical and non-clinical samples (Westen et al., 1985). In sum, the present study will attempt to assess object relations in terms of (a) the quality of object relatedness (using the BORI) and (b) the dimensions of: complexity of representations of people; affect-tone of relationships paradigms; capacity for emotional involvement, and understanding social causality (utilizing the WORSCS) based on six TAT card responses (See Appendix E).

In addition to the measures described above, the present research study included a the Toronto Alexithymic Scale or TAS (Taylor, Ryan, & Bagby, 1985) which measures the degree of alexithymia through a 26-item self report questionnaire. Each item on this scale is rated on a 1-to-5 point Likert Scale (ranging from agree to disagree) with total scores ranging from 26 to 130. Recently, Taylor, Bagby, Ryan, Parker, Doody, & Keefe (1988) have established the cut off scores for the TAS. They defined the alexithymic range to be scores of 74 or greater, and the nonalexithymic range as scores of 62 or less. The TAS is scored as follows: items 1, 5, 6, 9, 11, 12, 13, 15, 16, 21, and 24 are negatively keyed. Therefore, to obtain total score one reverses the negatively keyed items. That is, a rating of 1 becomes scored 5; 2=4; 3=3; 4=2, and 5=1. The sum of all the item scores equals the total score (Taylor et al. (1988). Taylor et al. (1985) have reported in a study of 542 college students TAS to have adequate internal consistency ($r=0.79$), good test-retest reliability ($r=0.82, 0.75, 0.77$) for 1 week, 5 week, and 3 month periods respectively and that TAS is free from social desirability response bias. Bagby, Taylor, Parker, & Loiselle (1990) have also found the latter scale to be a reliable and valid measure of the alexithymia construct. Further, these researchers cited five other studies with similar results in terms of convergent, discriminant, and criterion validity plus test-retest reliability (See Appendix L).

D. DEFINITION OF THE VARIABLES

Gender: 0 = Male
1 = Female

Age: Actual chronological age

Ethnicity: 1 = White/Caucasian
2 = Black
3 = Asian
4 = Hispanic
5 = Other

Religion: 1 = Protestant (Baptist, Methodist, Presbyterian, etc.)
2 = Catholic
3 = Jewish
4 = Other
5 = None

Education: 1 = < 9th grade
2 = some high school
3 = High School graduate/GED
4 = Some College
5 = College graduate
6 = Some graduate/professional school
7 = Graduate degree

Marital Status: 1 = Single
2 = Engaged
3 = Married
4 = Living together
5 = Divorced
6 = Separated
7 = Widowed

Chronicity: Duration of RA/VC diagnosis in years (actual number of years). RA diagnosis is made using medical history, physical examination, blood tests, and X-rays (Arthritis Foundation, 1984).

RA Factor: 0 = Negative
1 = Positive

Alexithymia : 74 or greater = alexithymia
62 or less = non-alexithymia

OBJECT RELATIONS

Bell Object Relations Inventory (BORI) Subscales:

Alienation (Score $\geq$ 16.5 points)
Insecure Attachment (Score $\geq$ 13.5 points)
Egocentricity (Score $\geq$ 5.5 points)
Social Incompetence (Score $\geq$ 5.5 points)

Westen Object Relations and Social Cognition Scales (WORSC) Based on the TAT (Thematic Apperception Test):

Complexity of Representations of People
Affect-tone of Relationship Paradigms
Capacity of Emotional Investment in Relationships and Moral Standards
Understanding Social Causality

Obs: All Westen Scales are score object relation levels (1-5) ranging from undifferentiated (level 1) to highly differentiated (level 5). Levels 1 and 2 are considered more pathological or less differentiated levels of object relations (Westen, 1985).

E. DATA ANALYSIS

This sample consisted of 50 subjects divided into three groups (20 rheumatoids, 10 other psychosomatic disorders (colitis patients), and 20 non-psychosomatic controls). Descriptive data on the above subjects shows they were matched in terms of age, gender, ethnicity, educational level, and health status to reduce the potential confounding effects.

The BORI, TAT, according to the Westen System, and TAS were scored as follows:

The Bell Object Relations Inventory has four subscales on which high scores represent more pathological relations. (1) Alienation subscale scores of 16.5 points or above indicate pathological elevations; (2) Insecure Attachment subscale scores of 13.5 points or above represent pathological elevations; (3) Egocentricity subscale scores of 5.5 points or above indicate pathological elevations, and (4) Social Incompetence subscales

scores of 5.5 points or above represent pathological elevations. A hand scoring system developed by Bell (1985) was used to score the BORI (Appendices G and H).

The Westen Scoring System of Object Relations and Social Cognition was performed by two raters (the investigator and another UT clinical psychology graduate student). Six TAT cards were administered to each subject (Card 1,2,4,6GF, 7GF, or 7 BM, and 13 MF). The rater scored each TAT story or response on the four dimensions of objection relation/social cognition (complexity of representations of people, affect-tone of relationship paradigms, capacity for emotional investment in relationships and moral standards, and understanding of social capacity) ranging in levels from 1 to 5. Pathological object relations is determined by scoring on levels 1 or 2 on the dimensions of the Westen System. A scoring manual prepared by Westen et al., (1985) was utilized by the raters to score those four dimensions of object relations which are rated independently of each other for research purposes even though they are theoretically interdependent (Westen et al., 1985). In order to avoid the potential for bias on scoring the TAT using Westen's more subjective scales, and independent third party was hired to re-type the stories, one to a page, and re-code them. The two researchers (Ascencao and Keinath) were presented with each story randomly, so that each story was rated independent of the protocol. Each rater scored the obtained data by the other researcher and therefore was blind to the group from which the data originated (healthy, non-psychosomatic control, RA, or UC). When the ratings were completed, the third party re-instated the codes for inclusion into the original protocols. Inter-rater reliability was estimated for 20% of the data which according to Weiner (1991) is the adequate percentage to determine inter-rater reliability for projective data.

That is, the two raters will independently scored about 60 of the 30 TAT stories (See Appendix F). Inter-rater reliabilities for the TAT scales were determined using Pearson product moment correlation coefficients.

Finally, the Toronto Alexithymia is scored as follows: Items 1, 5, 6, 9, 11, 12, 13, 15, 16, 21, and 24 are negatively keyed. Therefore, to obtain total score one reverses the negatively keyed items. That is, a rating of 1 becomes scored 5; 2=4; 3=3; 4=2, and 5=1. The sum of all the item scores equals the total score (Taylor et al., 1988). The cut off scores of 74 or greater indicate the individual is alexithymic and 62 or less non-alexithymic (Taylor et al., 1985). Therefore, a score of 74 or greater represents a pathological level of alexithymia on the TAS.

F. Testing the Hypotheses

Chi-square analyses and One-Way ANOVA were utilized to identify discrepancies in matching the group demographically.

Group differences for alexithymia (as measured by TAS) and object relations (as measured by BORI Subscales and Westen Scales) were determined by One-Way ANOVA (with supplemental computations of the Duncan's New Multiple Range Test), Chi-Square, Fisher's Exact Probability Test, and Discriminant Analyses.

CHAPTER IV

RESULTS

The results are divided into two parts. The first part deals with a comparison between RA patients and healthy, non-psychosomatic (NP) controls. The second part focuses on a comparison between two psychosomatic-autoimmune groups (RA and UC).

A. TWO-GROUP-COMPARISON: RA AND NP CONTROLS (N=40)

Demographics

A summary of the statistical analyses for the demographic data matching the RA and NP groups for gender, ethnicity, religion, marital status and age are presented in Tables I and II.

Table I: Demographic Chi-Square Test

Groups: Psychosomatic RA and Non-Psychosomatic (N=40)

Demographic Variables	χ^2	DF	P
Gender	0.00	1	1.00
Ethnicity	0.00	2	1.00
Religion	4.63	3	.20
Education	4.57	5	.47
Marital Status	4.03	5	.55

As illustrated in Table I, there is no statistically significant difference between the RA and non-psychosomatic groups on the demographic variables. A breakdown of the above variables show the following group comparisons: The non-psychosomatic group (N=20) was comprised of 8 males and 12 females; 18 whites, 1 black, and 1 Asian; 11 Protestants, 1 Catholic, and 8 other religions/none; 3 had only a high school education, 14 had some college education (1 semester to 3.5 years), 1 had an undergraduate college degree, 1 had some graduate/professional school, and 1 had a graduate degree (MBA); 5 singles, 12 married, 2 divorced, and 1 widowed. The RA group (N=20) was composed of 8 males and 12 females; 18 whites, 1 black, and 1 Asian; 12 Protestants, 2 Catholics, and 6 other religions; 4 had only a high school education, 9 had some college education (1 semester to 3.5 years), 3 had undergraduate college degrees, 1 had some graduate/professional school, and 3 had graduate degrees (2 MA/MS and 1 Ph.D); 7 were single, 9 were married, 2 were divorced, 1 was separated, and 1 was widowed.

Table II: Demographic One-Way ANOVA

Groups: Psychosomatic RA and Non-psychosomatic (N=40)

Demographic Variable	Means		Mean Squares	F(1)	P
	RA	NP			
Age	38.8	38.4	1.60	0.00	.93

As shown in Table II, the One-Way Analysis of Variance for age variable ($F = .0086$, $df=1$, $p=.93$) indicates no significant differences between the two groups. Both groups ranged in age between 19 to 66. The average age for the non-psychosomatic group was 38.45 as compared to the RA group which was 38.85. Therefore, the groups were almost perfectly matched by age on a 1:1 basis.

ALEXITHYMIA BASED ON TAS

First, alexithymia was analyzed as a continuous variable in a One-Way Analysis of Variance (Table III) which showed no statistically significant difference between the two groups.

Table III: Alexithymia One-Way ANOVA

Groups: Psychosomatic RA x Non-psychosomatic (N=40)

Variable	Means		Mean-Square	F(1)	P
	RA	NP			
Alexithymia	58.1	61.1	119.03	1.19	.28

Although the above analysis indicates no difference between the two groups, this author decided to do a Chi-square test on alexithymia using the cut off scores established by Taylor, Bagby, Ryan, Doody, and Keefe (1988), the authors of TAS (Toronto

Alexithymia Scale), to categorize the groups (Table IV). These cut off points are alexithymia (score ≥ 74) and non-alexithymia (score ≥ 62). More specifically, these cut off points were derived from normative data which showed that TAS, for normal adults, ranges between 40-87 with a mean = 62.6 and SD = 10.9 (females) and a range of 38-92 with a mean = 62.1 and SD = 11.3 (males). As for college students, TAS ranges between 38-87 with a mean = 63.3 and SD = 10.6 (males) and 41-91 with a mean = 63.2 and SD = 10.8 (Bagby et al., 1990; Taylor et al., 1988). Even though the authors of TAS have established the cut off scores for alexithymia and non-alexithymia, they do not account for scores between 63 and 73. Hence, this researcher categorized those scores as average.

Table IV: Alexithymia Chi-Square Test showing Categories

Group	Non-Alexithymia scores ≤ 62	Average 63-73	Alexithymia scores ≥ 74	Range	Mean
Psychosomatic RA	12	6	2	40-74	58.15
Non-Psychosomatic	10	7	3	37-78	61.10
Variable	χ^2	DF	P		
Alexithymia	0.92	2	.62		

As illustrated by Table IV, the Chi-square analysis of Alexithymia variable ($=.92$, $df=2$, $p=.62$) showed no statistically significant difference. However, there were some

interestingly slight differences: more RA subjects fell in the non-alexithymic cell and less in the alexithymic one. Further, the range for RAs was slightly smaller than that for non-psychosomatic subjects. Finally, according to the mean, the RA subjects seem less alexithymic or more capable of verbalizing their emotions and having a fantasy life than the non-psychosomatic control group.

Object Relations Based on BORI

A between-group One-Way Analysis of Variance was performed on the subscales from the Bell Object Relations Inventory (BORI).

TABLE V: BORI Subscales One-Way ANOVA

Groups: Psychosomatic RA and Non-psychosomatic Controls (N=40)

BORI Subscales (Cut off Scores)	Means		Mean-Square	F(1)	P
	RA	NP			
Alienation (≥ 16.5)	10.1	8.0	44.10	1.13	.29
Insecure Attachment (≥ 13.5)	8.3	8.1	0.00	0.00	1.00
Egocentricity (≥ 5.5)	3.0	3.7	6.40	0.49	.48
Social Incompetence (≥ 5.5)	4.0	2.6	12.10	0.95	.33

As illustrated by Table V, the One-Way Analysis of Variance on the four BORI subscales show no statistically significant differences for the psychosomatic RA and non-psychosomatic control groups.

In order to identify pathological scores by group, a Chi-square test was performed (Table VI). The cut off scores were established by Bell et al., (1985).

TABLE VI: BORI Subscales Chi-Square Test

Groups: Psychosomatic RA x Non-psychosomatic (NP)

BORI Variables (Cut off Scores)	RA	NP	χ^2	DF	P
Alienation (≥ 16.5)	1	2	0.36	1	.54
Insecure Attachment (≥ 13.5)	3	3	0.00	1	1.00
Egocentricity (≥ 5.5)	4	5	0.14	1	.70
Social Incompetence (≥ 5.5)	5	2	0.00	1	1.00

As shown by Table VI, the Chi-square analysis indicates that there was no statistically significant difference on any of the four BORI Subscales for the psychosomatic RA and non-psychosomatic groups. However, it is important to point out that there were 5 RA subjects versus 2 non-psychosomatic controls on the Social Incompetence Subscale. Therefore, the Chi-square was not completed for the latter subscale due to empty cells.

Westen Object Relations Based on the TAT

The first step in measuring object relations according to the Westen Scoring System (WORSS) was to establish the inter-rater reliabilities which are presented in Table VII.

TABLE VII: Inter-rater Reliabilities using Westen Object Relations Scoring System based on 60 TAT Stories

Westen Object Relations Scales	Percent Agreement
Complexity of Representations	.81
Affect-tone of Relationships	.87
Emotional Investment	.84
Social Causality	.81

As illustrated by Table VII, the inter-rater reliabilities, as percent agreement, were very high for all of the four Westen Object Relations Scales. The raters blind-scored the 60 TAT stories (20 from each group: RA, NP, and UC). The stories were based on 6 TAT Cards (numbers 1, 2, 4, 6GF, 7GF/BM, and 13MF). The 60 TAT stories represent 20% of the total sample. That is, 50 subjects with 6 stories each (or 300 stories).

TABLE VIII: Westen Object Relations Scales One-Way ANOVA Across all 6 TAT Cards

Groups: Psychosomatic RA and Non Psychosomatic (N=40)

WOR Scale Variables	Means		Mean Squares	F(1)	P
	RA	NP			
Complexity of Representations	3.2	3.0	0.25	0.50	.48
Affect-tone of Relationships	2.9	2.8	0.43	1.45	.23
Emotional Investment	2.9	2.9	0.00	0.00	.95
Social Causality	3.2	3.1	0.06	0.12	.73

As highlighted by Table VIII, the between-group One-Way Analysis of Variance showed no statistically significant difference on any of the four Westen Object Relations Scales for the RA or non-psychosomatic controls. However, given the unevenness of the distribution a non-parametric test (Chi-square) was performed because it doesn't require normality of the underlying distribution. (Norusis, 1990).

Post Hoc Analysis

The Chi-square tests for the 4 Westen Object Relations Scales (Complexity of Representations of People (CR), Affect-tone of Relationships Paradigms (AT), Capacity for Emotional Investment (EI), and Understanding of Social Causality (SC)) were based on 4 categories derived from the means (based on scores ranging from 1-4) and standard deviations for each scale. Table IX shows the means and standard deviations for these scales using the overall sample (N=50).

Table IX: Westen Object Relation Scales' Means and Standard Deviations for all 3 Groups Together

Westen Scales	Means	Standard Deviations
Complexity of Representations	3.11	.65
Affect-tone of Relationships	2.95	.54
Emotional Investment	2.90	.50
Social Causality	3.23	.64

The next step on this analysis was to complete the frequencies for each scale and, using the means and standard deviations given on Table IX, estimate the 4 categories

which were used for the Chi-square tests. The following tables list the frequencies for which the means and standard deviations were derived to divide the 4 categories for each Westen Scale (CR, AT, EI, and SC).

Table X: Complexity of Representations of People (CR) Frequencies (N=50)

CR Levels	Frequency	Percentage	Cumulative %
2.00	1	2	2
2.17	2	4	6
2.33	2	4	10
2.50	5	10	20
2.67	7	14	34
2.83	6	12	46
3.00	6	12	58
3.17	5	10	68
3.33	2	4	72
3.50	3	6	78
3.67	2	4	82
4.00	2	4	86
4.17	3	6	92
4.33	3	6	98
4.50	<u>1</u>	<u>2</u>	100
Total	50	100	

Based on Table X, the mean for CR was estimated to be 3.00 from which the following 4 categories for CR were derived using standard deviations: 1=2 standard deviations below the mean (< 2.50); 2=1 standard deviation below the mean ($\geq 2.50 < 3.00$); 3=1 standard deviation above the mean ($\geq 3.00 < 3.67$), and 4=2 standard deviations above the mean (≥ 3.67).

Table XI: Affect-tone of Relationship Paradigms (AT) Frequencies (N=50)

T Levels	Frequency	Percentage	Cumulative %
1.83	2	4	4
2.17	3	6	10
2.33	6	12	22
2.50	3	6	28
2.67	3	6	34
2.83	4	8	42
3.00	5	10	52
3.17	12	24	76
3.33	2	4	80
3.50	4	8	88
3.67	3	6	94
3.83	1	2	96
4.00	1	2	98
4.17	<u>1</u>	<u>2</u>	<u>100</u>
Total	50	100	

Based on Table XI, the mean for AT was estimated to be 3.00 from which the following 4 categories for AT were derived using standard deviations: 1=2 standard deviations below the mean (< 2.33); 2=1 standard deviation below the mean ($\geq 2.33 < 3.00$); 3=1 standard deviation above the mean ($\geq 3.00 < 3.50$), and 4=2 standard deviations above the mean (≤ 3.50).

Table XII: Capacity for Emotional Involvement (EI) Frequencies (N=50)

EI Levels	Frequency	Percentage	Cumulative %
1.50	1	2	2
2.00	1	2	4
2.17	2	4	8
2.33	3	6	14
2.50	6	12	26
2.67	6	12	38
2.83	7	14	52
3.00	7	16	68
3.17	3	6	74
3.33	6	12	86
3.50	3	6	92
3.67	2	4	96
3.83	1	2	98
4.17	<u>1</u>	<u>2</u>	100
Total	50	100	

Based on Table XII, the mean for EI was estimated to be 2.83 from which the following 4 categories for EI were derived using standard deviations: 1=2 standard deviations below the mean (< 2.33); 2=1 standard deviation below the mean (≥ 2.33 < 2.83); 3=1 standard deviation above the mean (≥ 2.83 > 3.33), and 4=2 standard deviations above the mean (≥ 3.33)

Table XIII: Understanding of Social Causality (SC) Frequencies (N=50)

SC Levels	Frequency	Percentage	Cumulative %
2.17	2	4	4
2.33	4	8	12
2.50	5	10	22
2.67	1	2	24
2.83	5	10	34
3.00	5	10	44
3.17	3	6	50
3.33	7	14	64
3.50	4	8	72
3.67	1	2	74
3.83	3	6	80
4.00	5	10	90
4.17	1	2	92
4.33	3	6	98
4.50	<u>1</u>	<u>2</u>	100
Total	50	100	

Based on Table XIII, the mean for SC was estimated to be 3.17 from which the following 4 categories for SC were derived using standard deviations: 1=2 standard deviations below the mean (< 2.67); 2=1 standard deviation below the mean ($\geq 2.67 < 3.17$); 3=1 standard deviation above the mean ($\geq 3.17 < 3.83$); 4=2 standard deviations above the mean (≥ 3.83).

The following Tables show the Chi-square Tests for the Westen Scales using the 4 categories derived from the means and standard deviation reported above.

Table XIV: Capacity for Emotional Investment in Relationships and Moral Standards Chi-Square Test by Group (NP and RA) using Standard Deviation Categories (N=40)

Category by Standard Deviation	Groups		Row Total
	Non-Psychosomatic Controls	Psychosomatic RA	
1. (< 2.33)	3	1	4 10%
2. ($\geq$ 2.33 < 2.83)	3	8	11 27.5%
3. ($\geq$ 2.83 < 3.33)	11	5	16 40%
4. ($\geq$ 3.33)	3	6	9 22.5%
Column Total	20 50%	20 50%	40 100%
<u>Chi-square</u> 6.73	<u>DF</u> 3	<u>Significance</u> .08*	

As shown by Table XIV, the Chi-square analysis indicated that there was a statistically significant difference between the RA and non-psychosomatic subjects' object relations in terms of Capacity for Emotional Investment in Relationships and Moral Standards. This significant difference probably lies at the extremes (the highest and lowest categories). The RA group did better. That is, compared to NPs, there were

more RA subjects at the highest category (6 RA and 3 NP) and less at the lowest (1 RA and 3 NP).

Statistically, one should not use the Chi-square test if more than 20 % of the cells have expected values less than 5 since the observed significance level based on the chi-square distribution is invalid. In this case, the Fisher's Exact Probability Test (Siegel, 1956) is recommended in place of the Chi-square test. Fisher's Exact Probability Test evaluates the same hypothesis as the Chi-square test, and it is suitable for tables having two rows and columns with small expected frequencies (Norusis, 1990; Siegel, 1956). The following three tables show the other 3 Westen Scales (Complexity of Representations of People, Affect-tone of Relationship Paradigms, and Understanding of Social Causality) for the NP and RA by the four standard deviation categories. However, given that more than 20% of the tables cells had expected frequencies less than 5, the Fisher's exact test was used collapsing the 4 categories into 2. That is, category 1 = one to two standard deviations below the mean and category 2 = one to two standard deviations above the mean. Tables XV to XVIII show these categories before and after being collapsed and of the Fisher's Exact Probability Test. As will be shown in the next paragraphs, this collapsing of the standard deviation categories, although statistically correct, resulted in diminishing of group differences and consequently the loss of statistical significance on the following 3 Westen Object Relations variables: Complexity of Representations of People, Affect-tone of Relationships Paradigms, and Understanding of Social Causality.

Table XV: Complexity of Representations of People Fisher's Exact Probability Test by Group (NP and RA) using Standard Deviation Categories (N=40)

Categories by Standard Deviation	Groups		Row Totals
	Non-Psychosomatic Controls	Psychosomatic RA	
1. (< 2.50)	3	5	8 20%
2. ($\geq 2.50 < 3.00$)	7	9	16 40%
3. ($\geq 3.00 < 3.67$)	5	2	7 17.5%
4. (≥ 3.67)	5	4	9 22.5%
<u>Collapsed Category by Standard Deviation</u>			
1. $< 2.50 < 3.00$)	10	14	24 60.0%
2. ($3.00 \geq 3.67$)	10	6	16 40.0%
Column Total	20 50.0%	20 50.0%	40 100.0%
Fisher's Exact Probability = .11			

Table XV shows, according to the Fisher's exact probability test, there was no statistically significant difference on Complexity of Representations of People (CR) for the RA and Non-psychosomatic groups. However, it is important to point out that CR

did approach significance. The RA group had fewer higher scores compared with lower scores (13 vs 61) compared with an equal number in the higher and lower categories (10 vs 10) in the non-psychosomatic group.

Table XVI: Affect-tone of Relationship Paradigms Fisher's Exact Probability Test by Group (NP and RA) using Standard Deviation Categories (N=40)

Categories by Standard Deviation	Groups		Row Total
	Non-Psychosomatic Controls	Psychosomatic RA	
1. (< 2.33)	2	3	5 12.5%
2. ($\geq 2.33 < 3.00$)	8	9	17 42.5%
3. ($\geq 3.00 < 3.50$)	8	6	14 35.0%
4. (≥ 3.50)	2	2	4 10.0%
<u>Collapsed Categories by Standard Deviation</u>			
1. ($< 2.33 < 3.00$)	10 45.5%	12 54.5%	22 55.0%
2. ($\geq 3.00 \geq 3.50$)	10 55.6%	8 44.4%	18 45.0%
Column Total	20 50.0%	20 50.0%	40 100%
Fisher's Exact Probability = .20			

As illustrated by XVI, the Fisher's exact probability test showed no statistically significant difference on Affect-tone of Relationships Paradigms for the RA and NP controls.

Table XVII: Understanding Social Causality Fisher's Exact Probability Test by Group (NP and RA) using Standard Deviation Categories (N=40)

Categories by Standard Deviation	Groups		Row Total
	Non-Psychosomatic Controls	Psychosomatic RA	
1. (< 2.67)	4	7	11 27.5%
2. ($\geq 2.67 < 3.17$)	5	6	11 27.5%
3. ($\geq 3.17 < 3.83$)	6	2	8 20.0%
4. (≥ 3.83)	5	5	10 25.0%
<u>Collapsed Categories by Standard Deviation</u>			
1. ($< 2.67 < 3.17$)	9	13	22 55.0%
2. ($\geq 3.17 \geq 3.83$)	11	7	18 45.0%
Column Total	20 50%	20 50%	40 100%
Fisher's Exact Probability = .11			

Table XVII indicates that, although it approached significance, there was no statistically significant difference on Understanding Social Causality for the RA and Non-psychosomatic groups. However, with complexity of Representations of People, more RA subjects had lower scores (13 vs 7) compared with an opposite trend for the non-psychosomatic group (9 vs 11).

In sum, according to the Chi-square Analysis, Capacity for Emotional Investment in Relationships and Moral Standards was the only Westen Object Relations Scale that distinguished the psychosomatic RA from the Non-Psychosomatic controls even though, according to the Fisher's Exact Probability Test, Complexity of Representations of People and Understanding Social Causality approached significance.

B. THREE-GROUP-COMPARISON: RA and UC and NP (N=30)

The second part of this chapter focuses not only on a comparison between two psychosomatic-autoimmune groups (RA and UC) but also between those groups and the non-psychosomatic (NP) groups. Given the fact that there were only 10 subjects in the ulcerative colitis (UC) group, only 10 subjects were selected from the two other larger groups (RA and NP) in order to match those with UC by gender and age. A summary of the statistical analyses for the demographic or background data on these 3 groups are presented in Tables X and XI.

Demographics

Table XVIII: Demographic Chi-Square Test

Groups: Psychosomatic RA and UC and Non-Psychosomatic (N=30)

Demographic Variables	χ^2	DF	P
Gender	0.00	2	1.00
Ethnicity	4.46	4	.35
Religion	9.36	6	.15
Education	20.31	10	.02
Marital Status	6.64	8	.57

As illustrated by Table XVIII , there is no statistically significant difference for the three groups in gender, ethnicity, religion, or marital status. However, there is a significant difference in terms of education. In other words, the 30 subjects (10 UC, 10 RA, and 10 NP) were distributed as follows: the NP group consisted of 3 males and 3 females; 9 whites and 1 black; 5 Protestants and 5 other religions/none; 3 singles, 6 married, and 1 divorced; 2 had only a high school education, 7 had some college education (1 semester to 3.5 years), and 1 had some graduate/professional school. As for the RA group, it was composed of 3 males and 7 females; 9 whites and 1 Asian; 5 overall Protestants, 1 Catholic, and 4 other religions; 4 were single, 4 were married, 1 was divorced, and 1 was separated; 2 had only a high school education, 3 had some college education (1 semester to 3.5 years), 2 had undergraduate college degrees, and 3 had graduate degrees (2 M.A./M.S. and 1 Ph.D.). Finally, the UC group consisted of 3 males and 7 females; 10 whites; 5 Protestants, 3 Catholic, and 2 other religions; 4

were single and 6 married; 4 had some college education (1 semester to 3.5 years), 3 had some graduate degrees (2 M.A. and 1 M.D). In terms of education, the psychosomatic-autoimmune groups were more educated (graduate degrees) in comparison to the non-psychosomatic controls.

Table XIX: Demographic One-Way ANOVA

Groups: Psychosomatic RA and UC and Non-psychosomatic (N=30)

Demographic Variable	Means			Mean Squares	F(1)	P
	RA	UC	NP			
Age	34.0	35.1	35.4	6.30	0.5	.94

As shown in Table XIX, the One-Way ANOVA for age ($F = .06$, $df = 1$, $p = .94$) found no significant difference when comparing the 3 groups. All the groups ranged in age from 19 to 59. The average age was distributed as follows: NP = 35.4, RA = 35.1, and UC = 33.9. Therefore, the 3 groups were fairly well matched.

Disease Information

Chronicity is defined by length of time since RA/UC diagnosis, ranging from months to years. The RA group (N=20) ranged from 1 month to 29 years (frequencies: 13 subjects = 1 to 7 months; 4 subjects = 11 to 19 years, and 3 subjects = 22 to 29 years). As for the UC group, it ranged in chronicity from 1 month to 13 years (frequencies: 7 subjects = 1 to 7 months and 3 subjects = 12 to 13 years). Hence, in

proportional comparison, RA subjects have longer chronicity. Once the RA group was matched with the UC subjects (N=10) for gender and age, the composition of the RA patients in terms of chronicity changed to: 6 subjects = 1 to 7 months and 4 subjects = 11 to 23 years. Table XII shows a comparison in terms of chronicity between the 2 psychosomatic groups (matched for gender and age).

Table XX: Chronicity One-Way ANOVA

Groups: Psychosomatic (RA) and Psychosomatic (UC) (N=20)

Disease Information Variable	Means		Mean Squares	F(1)	P
	RA	UC			
Chronicity	6.66	4.46	25.35	0.42	.52

Obs.: The RA factor variable is not included because it was obtained for only 8 to 20 RA subjects.

As illustrated in Table XX, the One-Way ANOVA for chronicity ($F = .42$, $df = 1$, $p = .52$) showed no statistically significant difference for the two psychosomatic-autoimmune groups (RA and UC). However, on the average, the RA patients have been diagnosed with that disease a little longer than the UC patients.

ALEXITHYMIA BASED ON TAS

First, Alexithymia was analyzed as a continuous variable in a One-Way Analysis of Variance (Table XXI) which showed no statistically significant difference between the three groups.

**Table XXI: Alexithymia One-Way ANOVA
and the Duncan's New Multiple-Range Test**

Groups: RA and UC and NP (N=30)

Variable	Means			Mean-Squares	F(1)	P
	RA	UC	NP			
Alexithymia	58.4	69.3	60.4	377.43	3.26	.056

Duncan's New Multiple-Range Test for Alexithymia

	NP	RA	UC
NP	--	NS	< .05
RA		--	< .05
UC			--

As indicated by Table XXI, the One-Way Analysis of Variance showed a statistically significant difference for the 3 groups in terms of Alexithymia.

Furthermore, supplemental computations for the ANOVA, the Duncan's new multiple-range test (Bruning & Kintz, 1977), indicated that the above difference can be found between the RA and UC as well as between NP and UC groups. In order to illustrate the latter between-group-difference, Table XXII shows the categories of alexithymia as defined by the cut off scores established by the authors at TAS (Bagby et al., 1990; Taylor et al., 1988).

Table XXII: Breakdown of Alexithymia by TAS Categories
Groups: UC and RA and NP (N=30)

Group	Non-Alexithymia scores ≤ 62	Average 63-73	Alexithymia scores ≥ 74	Range
Psychosomatic UC	2	4	4	44-85
Psychosomatic RA	8	1	1	48-74
Non-Psychosomatic	6	2	2	37-74

Although this was a small sample (only 10 subjects per group), some interesting differences should be pointed out: the RA group had the smallest and the UC the largest number of subjects in the alexithymia category. This suggests that, when compared to UCs, the RA subjects are more capable of verbalizing their emotions and having a fantasy life. In addition, the same difference may hold true for the UC in comparison to the NP subjects. However, the difference between the RA and NP subjects was negligible. Hence, according to these results, there seems to be no specific pattern of alexithymia for psychosomatic-autoimmune patients.

Object Relations Based on BORI

A between-group One-Way Analysis of Variance was performed on the subscales from the Bell Object Relations Inventory (BORI).

Table XXIII: BORI Subscales One-Way ANOVA
Groups: RA and UC and NP Controls (N=30)

BORI Subscales	Means			Mean-Squares	F(2)	P
	RA	UC	NP			
Alienation (≥ 16.5)	11.8	9.8	10.0	12.13	0.14	.86
Insecure Attachment (≥ 13.5)	9.0	6.7	8.5	14.63	0.54	.59
Egocentricity (≥ 5.5)	4.3	1.4	4.3	28.03	1.92	.16
Social Incompetence (≥ 5.5)	4.2	3.6	3.0	3.60	0.17	.84

As illustrated by Table XXIII, the One-Way Analysis of Variance on the four BORI subscales showed no statistically significant difference for the three groups. Egocentricity ($F = 1.92$, $df = 2$, and $p > .16$) was the only BORI Subscale that even approached statistical significance. Therefore, the above results concerning the Bell Object Relations self report inventory suggest that the subjects in the RA, UC and NP groups fall within the same level of object relations which seems to be more under conscious control.

The Bell Object Relations Inventory was considered in this study for its unique properties as a self-report inventory. It was hoped that a scale of this nature would contribute to the construct validity of a projective test such as the Westen Object Relations Scales (based on the TAT) by offering empirical or behavioral evidence to support the theoretical constructs on which they are based. However, the BORI Subscales failed to distinguish the 3 groups and the question of whether the Bell Object Relations Subscales is tapping the underlying construct of object relations remains unclear.

Westen Object Relations Based on the TAT

The first step in analyzing object relations according to the Westen Scales (WORSS) was to perform a One-Way ANOVA which is presented in the following Table.

Table XXIV: Westen Object Relations Scales One-Way ANOVA
Across all 6 TAT Cards
 Groups: RA and UC and NP Controls (N=30)

WOR Scale Variables	Means			Mean Squares	F(2)	P
	RA	UC	NP			
Complexity of Representations	3.0	3.1	3.5	0.68	1.78	0.18
Affect-tone of Relationships	2.7	3.2	3.2	1.09	4.03	.02
Emotional Investment	2.9	3.0	3.1	0.08	0.39	.68
Social Causality	3.1	3.4	3.5	0.21	0.50	.61

Duncan's New Multiple-Range Test for Affect-tone of Relationship Paradigms

	NP	RA	UC
NP	--	< .05	NS
RA		--	< .05
UC			--

According to Table XXIV, the One-Way ANOVA showed a statistically significant difference in affect-tone of Relationship Paradigms for the groups. The Duncan's New

Multiple-Range Test, a supplemental computation for this Analysis of Variance, indicated that the above statistically significant differences in Affect-tone of Relationship Paradigms are between the RA and NP controls as well as between the RA and UC psychosomatic-autoimmune groups. In addition, it is important to point out that Complexity of Representations of People did approach statistical significance. Finally, no statistical significance was found in terms of the Capacity for Emotional Investment and Moral Standards or Understanding of Social Causality.

Given that this is an exploratory study on the object relations of Rheumatoid Arthritis patients (as compared to ulcerative colitis and non-psychosomatic controls), other post hoc analyses were performed as attempts to capture groups differences, even subtle ones.

Post Hoc Non-Parametric Analysis

Considering that this was a 3-group comparison with a small sample and the unevenness of the distribution, Chi-square analyses were attempted using the 4 standard deviation categories on the 4 Westen Object relations Scales comparing the RA, UC, and NP groups. However, given that more than 20% of the table cells had expected frequencies less than 5, the Fisher's Exact Probability Test was used instead of Chi-square.

Table XXV: Complexity of Representations of People Fisher's Exact Probability Test by Group (NP and RA and UC) using Standard Deviation Categories (N=30)

Category by Standard Deviation	NP	Groups RA	UC	Row Total
1. (< 2.50)	0	3	2	5 16.7%
2. ($\geq 2.50 < 3.00$)	3	4	3	10 33.3%
3. ($\geq 3.00 < 3.67$)	3	1	5	9 30.0%
4. (≥ 3.67)	4	2	0	6 20.0%
<u>Collapsed Categories by Standard Deviation</u>				
1. ($< 2.50 < 3.00$)	3	7	5	15 50.0%
2. ($\geq 3.00 \geq 3.67$)	7	3	5	15 50.0%
Column Total	10 33.3%	10 33.3%	10 33.3%	30 100%
Fisher's Exact Probabilities: NP and RA = .07 RA and UC = .24				

As shown by XXV, the Fisher's exact probabilities indicated a statistically significant difference between the non-psychosomatic controls and the RA subjects.

However, the RA and UC group did not differ at a statistically significant level. Here it is important to point out that some trends, shown the top part of Table XXV: overall, the RA and UC scored lower on the Westen TAT variables than the NP subjects. Further, there was a clear difference between RAs and UCs in category 3 (1 to 5), and 2 RA subjects score higher than UCs. However, when the categories were collapsed these difference disappeared between these two psychosomatic autoimmune groups. In comparison to the other 2 groups, more RA subjects scored below the mean (level 3) on Complexity of Representations of People and seemed quite heterogeneous.

Table XXVI: Understanding Social Causality Fisher's Exact Probability Test by Group (NP and RA and UC) using Standard Deviation Categories (N=30)

Category by Standard Deviation	NP	Groups RA	UC	Row Total
1. (< 2.67)	0	5	1	6 20%
2. ($\geq 2.67 < 3.17$)	3	1	2	6 20%
3. ($\geq 3.17 < 3.83$)	4	1	4	9 30%
4. (≥ 3.83)	3	3	3	9 30%

Table XXVI, continued

<u>Collapsed Categories by Standard Deviation</u>	NP	Groups RA	UC	Row TOTAL
1. ($< 2.67 < 3.17$)	3	6	3	12 40%
2. ($\geq 3.17 \geq 3.83$)	7	4	7	18 60%
Column Total	10 33.3%	10 33.3%	10 33.3%	30 100%
Fisher's Exact Probabilities: NP x RA = .15 RA x UC = .15				

Table XXVI highlights that although the Fisher's exact probabilities showed that the NP and RA groups did not differ at a high enough statistical level, they approached significance. As can be noted on the top part of Table XXVI, the RA group was very heterogeneous in comparison to the NP and UC groups. That is, RA subjects scored at extremely low and high ends. Hence, some RA patients are the least and others are some of the most developed subjects in object relations on Understanding of Social Causality. However, in general, the RAs concentrated more at the lowest level. These results suggest that the RAs vary in terms of the accuracy with which they make attributions of other people's behaviors, thoughts, and feelings. In other words, although the RA group was quite different from the other 2 groups, such differences were lost when the standard deviation categories were collapsed. Therefore, the Fisher's exact probabilities only approached statistical significance.

Table XXVII: Affect-tone of Relationship Paradigms Fisher's Exact Probability Test by Group (NP and RA and UC) using Standard Deviation Categories (N=30)

Categories by Standard Deviation	NP	Groups RA	UC	Row Total
1. (< 2.33)	0	3	0	3 10.0%
2. ($\geq 2.33 < 3.00$)	3	3	4	10 33.3%
3. ($\geq 3.00 < 3.50$)	6	2	4	12 40.0%
4. (≥ 3.50)	1	2	2	5 16.7%
<u>Collapsed Categories by Standard Deviation</u>				
1. ($< 2.33 < 3.00$)	3	6	4	13 43.3%
2. ($\geq 3.00 \geq 3.50$)	7	4	6	17 56.7%
Column Total	10 33.3%	10 33.3%	10 33.3%	30 100%
Fisher's Exact Probabilities:				
NP x RA = .15				
RA x UC = .23				

Table XXVII showed that even though the Fisher's exact probabilities did not reach a statistically significant level on Affect-tone of Relationships Paradigms, the comparison

between RA and NP controls approached significance. As can be seen on the top part of Table XXVII, the RA scored the lowest of the 3 groups on Affect-tone (category 1) while the NP and UC subjects scored higher (starting on category 2). Affect-tone seems to be the only Westen Scale on which the RA group turned out to be more homogeneously distributed although 60% of those subjects scored below the mean (level 3). Here it is also important to remember that Affect-tone of Relationships Paradigms was the only one of the 4 Westen Object Relations Scales to distinguish the NP, RA, and UC groups at a statistically significant level. This may be due to the group distributions being more homogeneous.

Table XXVIII: Capacity for Emotional Investment and Moral Standards Fisher's Exact Probability Test by Group (NP and RA and UC) using Standard Deviation Categorized (N=30)

Categories by Standard Deviation	NP	Groups RA	UC	Row Total
1. (< 2.33)	0	0	0	0
2. ($\geq 2.33 < 2.83$)	3	3	4	8 26.7%
3. ($\geq 2.83 < 3.33$)	5	3	2	11 36.7%
4. (≥ 3.33)	2	4	4	11 36.7%

Table XXVIII, continued

<u>Collapsed Categories by Standard Deviation</u>	NP	Groups RA	UC	Row Total
1. ($< 2.33 < 2.83$)	3	3	4	10 33.3%
2. ($\geq 2.83 \geq 3.33$)	7	7	6	20 66.7%
Column Total	10 33.3%	10 33.3%	10 33.3%	30 100%
Fisher's Exact Probabilities:	NP x RA = .24 RA x UC = .32			

As illustrated by Table XXVIII, the Fisher's exact probabilities showed no statistically significant difference in terms of the Capacity for Emotional Investment in Relationships and Moral Standards for the 3 groups. In the two-group comparison (RA x NP), using the 20 RA and 20 NP controls, there was a statistically significant difference between these groups on Emotional Investment. However, in the present comparison using only 10 RA and 10 NP subjects, the difference disappeared probably due to the reduction in the sample size.

In sum, according to the Chi-square analyses and the Fisher's exact probability test, Complexity of Representations of People and the Capacity of Emotional Investment and Moral Standards distinguished the RA from the NP controls. On the other hand, the One-Way ANOVA Analysis (XXIV) showed that Affect-tone of Relationships Paradigms

was the only Westen Object Relations Scale to differentiate the NP, RA, and UC groups at a statistically significant level.

Given the results described above, the next step in the analysis was to locate the group differences by examining the average scores for each group on the Westen Object Relations Scales and Alexithymia. This allowed for a developmental comparison of Object Relations as measured by levels 1-5 of the Westen Scales and the presence and/or degree of Alexithymia as measured by TAS (Table XXIX).

Table XXIX: WORS and Alexithymia Ranges and Means (N=30)

WOR Scales	Non-Psychosomatic		Rheumatoid Arthritis		Ulcerative Colitis	
	Range	Mean	Range	Mean	Range	Mean
Complex. of Represent.	2.7-4.3	3.5	2.3-4.5	3.0	2.3-3.7	3.0
Affect-tone of Relat.	2.8-4.0	3.3	1.8-3.8	2.7	2.8-4.2	3.2
Emotional Investment	2.8-4.2	3.2	2.3-3.7	2.9	2.5-3.8	3.0
Social Causality	2.8-4.2	3.5	2.3-4.5	3.2	2.5-4.0	3.4
Alexithymia	37-74	60.7	48-74	57.4	44-85	69.3

As illustrated by Table XXIX, in comparison with NP and UC, the RA was the least developed group in 3 Westen Object Relations Scales: Affect-tone of Relationships Paradigms, Capacity for Emotional Investment in Relationships and Moral Standards, and Understanding of Social Causality. However, in terms of Complexity of Representations of People, the RA was just as developed as the UC group, although these two psychosomatic-autoimmune groups were less developed than the non-psychosomatic

controls. As can be expected, the non-psychosomatic group was the most well developed group in terms of object relations as measured by the Westen Scales, although some of these differences are small. As for Alexithymia, the UC was the most and the RA the least Alexithymic of the groups. This suggests that the RA subjects may be a more emotional group, more able to verbalize affect and fantasize than the UC group. Further, the RAs were slightly less alexithymic than the non-psychosomatic controls.

Finally, an attempt was made in this analysis to identify the independent variable which could best predict each of the groups (NP, RA, and UC). However, the small sample size made the reliability of such analysis questionable. Nevertheless, the following paragraphs examine the relationships among the independent or predicting variables which are Alexithymia and the 4 Westen Object Relations Scales.

Table XXX: Pooled Within-Group Correlation Matrix of Alexithymia and the Westen Object Relations Scales for the RA, UC, and NP Subjects (N=30)

	Alex	CR	AT	EI	SC
(ALEX) Alexithymia	1.00				
(CR) Complexity of Representations	-0.17	1.00			
(AT) Affect-tone of Relationship	-0.11	0.26	1.00		
(EI) Emotional Investment	-0.18	0.46	0.63	1.00	
(SC) Social Causality	-0.43	0.69	0.47	0.46	1.00

Correlations were derived from proportionally weighed scores.
Correlation of .50 or higher are printed in boldface type.

Table XXX contains the correlation matrix for the means of the independent variables for the 3 groups (RA, UC, and NP). As can be noted, most of the correlations

are low. The highest correlations are .69 (between SC and CR) and .63 (between EI and AT). The number of values that exceed .50 is small. This correlation matrix supports the relative construct distinctiveness of each of the independent variables. That is, the Westen Object Relations Scales (CR, AT, EI, and SC) and Alexithymia are statistically distinct variables that are not well intercorrelated.

Post Hoc Discriminant Analysis

The next procedure involves a canonical discriminant analysis to further explore the explanatory power of the Westen Object Relations Scales and Alexithymia in distinguishing the group. Here it is important to point out that this is a small sample ($N=30$) for the number of independent variables to be entered in the model (first the 4 Westen Object Relations Scales (CR, AT, EI, and SC; secondly, the 4 WORS plus Alexithymia = 5). Statistically speaking the rule is 10 subjects ideally and minimum of 5 per independent variable. However, in psychosomatic research it is extremely difficult to find subjects willing to participate in studies. Given the latter rule, the first discriminant analysis (involving the 4 Westen Scales) allowed for, at least, 7 subjects per independent variable. As for the second discriminant (involving the 4 Westen Scales plus Alexithymia) allowed 6 subjects per independent variable. Therefore, although both discriminant analysis procedures meet the minimum criteria, this is a limitation recognized by this researcher.

Classification of Subjects into Groups on the Basis of
the Westen Object Relations and Alexithymia

Canonical discriminant analyses were employed to determine if the Westen Scales (Complexity of Representations of People, Affect-tone of Relationships, Emotional Investment, and Social Causality) and Alexithymia are the strongest contributors to the statistical process of correctly classifying psychosomatic RA, psychosomatic UC, and Non-psychosomatic (healthy, normal) controls.

In discriminant analysis, "discriminant scores" are computed for each subject to predict what group he/she is in. These scores are obtained by finding linear combinations of the independent variables (in this case, the Westen Object Relations Scales and Alexithymia). A linear combination is calculated by multiplying each variable by some constant, and then adding up the products. Discriminant analysis utilizes mathematical techniques to determine the way of computing scores that results in the best separation among the groups; that is, the most accurate prediction of group classification for each subject. For the present research, SPSS (Statistical Package for the Social Sciences) was used to do all the computations for the discriminant analyses on which these results are based (Norusis, 1990).

According to Norusis (1990), the canonical discriminant is most appropriately applied when a number of variables are to be utilized to categorize subjects among mutually exclusive groups. In addition, it identifies the specific subset of variables that are the most important for assigning group membership. Consequently, only the variables which are the most significantly related with this process of classification into groups are included in the discriminant "function" which is the result of the discriminant

analysis. This function is then used to predict group classification for subjects whose group has not been assigned before. The discriminant function is a linear combination of coefficients that differentially weight the selected independent (or predictor) variables in linear equation form. The linear discriminant equation:

$$D = B_0 + B_1 \chi_1 + B_2 \chi_2 + \dots B_n \chi_n$$

Where the χ 's are the values of the predictor variables, and the B's are the coefficients that have been estimated, B_0 is a "constant" that is also produced by the analysis, and becomes a fixed part of the function. The coefficients are derived so that the ratio of between groups sum of squares to the within group sum of squares is maximized. Such linear equation is calculated for each subject resulting in a single score. This score may be high or low, positive or negative depending upon the type and number of independent variables given for each subject. Hence, it is on the basis of the discriminant score that the subject is assigned to a group. For instance, a high score might mean a placement in "group 1", a low score in "group 2" (Norusis, 1990).

When comparing three groups, the discriminant analysis calculates two separate discriminant functions (which is only to fulfill a mathematical requirement) and each subject receives two discriminant scores, and group classification is made on the basis of these scores. A two dimensional field (composed of two perpendicular lines) is used to plot the two discriminant function scores. Basically, the scores fall on an X and Y axis and the resulting position will determine the group that the subject is classified into. For instance, a subject with two negative scores would be placed in a different quadrant than would a subject with two positive scores which, in turn, each would be assigned to

a different group. Each variable that is used in the discriminant function is weighed by a coefficient score and contributes to the assignment of subject. The variables and function coefficients are determined by a multi-step algorithm procedure, in which a series of computations is performed several times. The stepwise procedure is based on the minimization of the Wilks' Lambda statistic for any given variable. The Wilks' Lambda is the ratio of the within-groups sum of squares to the total sum of squares. The stepwise procedure ends when no more variables can significantly reduce Lambda, and all significant coefficients have been added to the discriminant function. In addition to the percentage of subjects correctly classified, another way to determine the variability of the discriminant functions is to check the eigenvalue. The eigenvalue is the ratio of the between-groups to within-groups sums of squares. Unlike the Wilks' Lambda (the ratio of within-groups sums of squares to total sums of squares), it is large eigenvalues that are associated with good functions. A large value is considered to be anything above 1.0. Another important way to assess the discriminant functions is to evaluate the percent of the variance accounted by those functions and the canonical correlation. At the end of the discriminant analysis there is a table of final classification of all the subjects by group based on the final discriminant function or functions (Norusis, 1990).

The Discriminant Functions for the WORS

A canonical discriminant analysis was performed using the Westen Object Relations Scales (Complexity of Representations of People (CR), Affect-tone of Relationships (AT), Capacity for Emotional Investment (EI), and Understanding of Social Causality

(SC) as the basis for assignment to one of the groups (RA, UC, or NP). This analysis is reported in the following four tables.

Table XXXI: Westen Scale Variables that met the Inclusion Criteria to be in the Discriminant Analysis

WORS Variables	Wilks' Lambda	Significance
Affect-tone of Relationship	0.77	.02
Complexity of Representations	0.69	.04
Social Causality	0.63	.06

Table XXXI shows that the variable Emotional Investment was excluded from the discriminant analysis because this variable failed to significantly reduce Wilks' Lambda value. The Wilks' Lambda is the ratio of the within-groups sum of squares to the total sum of squares and the stepwise procedure is based on the minimization of the Wilks' Lambda statistic for any given variable. The stepwise procedure ends when no more variables can significantly reduce Lambda, and all significant coefficients have been added to the discriminant function. In this case, Affect-tone of Relationship Paradigms, Complexity of Representations of People, and understanding of Social Causality all met the criteria for inclusion in discriminant analysis and were statistically significant contributors to this object relations model. In sum, this analysis found 3 out of the 4 Westen Object Relations Scales to contribute significantly to the functions.

Table XXXII lists the two discriminant functions that were calculated for the 3 WORS variables (AT, CR, and SC), in rank order (most powerful coefficients first.

Positive and negative values have nothing to do with the predictive power of the variable but with the group assignment or classification process. This process will be further elaborated in the next paragraphs.

Table XXXII: Unstandardized Canonical Discriminant Function Coefficients using the Object Relations Scales (WORS) Variables for the RA, UC, and NP Groups (N=30)

WORS Variables	Function 1	Function 2	
Affect-tone of Relationships	2.05	-0.54	
Complexity of Representation	0.80	2.11	
Social Causality	0.73	-1.34	
(Constant)	-6.25	-0.64	
Eigenvalue	0.32	0.19	
% of Explained Variance	62.73	37.27	
Canonical Correlation	0.49	0.40	
<u>Wilk's Lambda</u>	<u>Chi-Square</u>	<u>DF</u>	<u>Significance</u>
0.63	11.79	6	.06

As shown by Table XXXII, the variable Affect-tone of Relationship Paradigms appears to be the most powerful predictor for the classification of subjects into the groups. Complexity of Representations of People seems to be the second most important and Understanding of Social Causality may play a lesser role for the classification of the subjects into the psychosomatic (RA and UC) and non-psychosomatic groups. Here it

is also important to note the somewhat low eigenvalue (0.32) which may suggest that this is not an extremely powerful model in classifying these groups. In addition, although this object relations model (AT, CR, and SC) is statistically significant ($p=.06$), it only explains about 63% of the variance.

**Table XXXIII: Canonical Discriminant Function Scores
Evaluated at Group Means (Group Centroids) (N=30)**

Group	WORS (AT, CR, and SC) Group Centroids	
	Function 1	Function 2
Non-Psychosomatic (NP)	0.56	0.39
Rheumatoid Arthritis (RA)	-0.72	0.18
Ulcerative Colitis (UC)	0.16	-0.57

The group centroids (the group means of the canonical discriminant functions) for the functions for each group give basic information about the "direction" of group assignment. Observe the sign (positive/negative) in front of each function coefficients in Table XXXIII, then try to match them with those signs before the function coefficients previously reported on Table XXXII. For instance, the group centroid for the non-psychosomatic (NP) group are both positive for function 1 and function 2. Table XIX shows that Complexity of Representations of People is also positive for both functions 1 and 2. Therefore, it is reasonable to assert that the Complexity of Representations of People (CR) weighting is associated with the non-psychosomatic group. That is, CR contributed most significantly to the classification of subjects into the NP group. Similarly the group centroid for the Ulcerative Colitis (UC) group is positive for function

1 and negative for function 2 (Table XXXIII). Referring back to Table XXXII, one can see that Affect-tone of Relationships (AT) also has positive and negative weighting for functions 1 and 2. Hence, AT may have greatly contributed to the classification of subjects into the UC group. Finally, the Rheumatoid Arthritis (RA) group does not seem to have a specific WORS discriminant. Social Causality may have contributed to the classification into the RA group for function 1 but not for function 2. Indeed the fact that the SC weighting is negative and the RA centroid is positive, suggests that the SC variable may have caused misclassification of subjects into the RA group. Therefore, the correctly classified subjects into the RA group may have been a result of the contribution of the other two WOR variables (Complexity of Representations of People and Affect-tone of relationships). See Table XXXIV.

Table XXXIV: Group Prediction and Classification Results of Discriminant Functions for all 3 Groups using 3 WORS (AT, CR, and SC) (N=30)

N	Group	Predicted Group Membership		
		(1) NP	(2) RA	(3) UC
10	(1) Non-Psychosomatic (NP)	6 60%	1 10%	3 30%
10	(2) Rheumatoid Arthritis (RA)	3 30%	6 60%	1 10%
10	(3) Ulcerative Colitis (UC)	3 30%	1 10%	6 60%
% of Subjects Correctly Classified = 60% Group Classification by Chance = 33%				

As shown by Table XXXIV, the discriminant functions calculated from the 3 Westen Object Relations Scales (AT, CR, and SC) were only moderately successful at the assignment of subjects to the RA, UC, and NP groups. Only 60% of the subjects were correctly classified for each group. The overall rate of successful classification for all subjects in all groups was also 60% compared with 33% by chance.

The discriminant function for the 4 WOR Scales and Alexithymia

A second canonical discriminant analysis was performed introducing Alexithymia into the model in addition to the 4 Westen Scales of Object Relations (CR, AT, EI, and SC). The results of this analysis are reported on the following four tables.

Table XXXV: Variables that met the Inclusion Criteria to be in the Discriminant Analysis (Alexithymia and WOR Scales) (N=30)

Variables	Wilks' Lambda	Significance
Alexithymia	0.61	.01
Complexity of Representation	0.67	.02
Affect-tone of Relationships	0.77	.02

Table XXXV suggests that once Alexithymia was introduced into the model along with the Westen Object Relations model (CR, AT, ET, and SC), the Capacity for Emotional Investment and Moral Standards (EI) and Understanding Social Causality (SC) were excluded from the discriminant analysis because they failed to significantly reduce the Wilks' Lambda value.

Table XXXVI: Unstandardized Canonical Discriminant Function Coefficients using Alexithymia and the WORS Variables for the 3 Groups (N=30)

Variables	Function 1	Function 2	
Alexithymia	0.06	-0.03	
Complexity of Representations	-0.12	1.24	
Affect-tone of Relationships	1.57	0.54	
(Constant)	-8.53	-3.75	
Eigenvalue	0.52	0.16	
% of Explained Variance	76.09	27.91	
Cononical Correlation	0.58	0.37	
<u>Wilk's Lambda</u>	<u>Chi-square</u>	<u>DF</u>	<u>Significance</u>
0.57	14.77	6	.02

Table XXXVI should be examined and interpreted in connection with Table XXV in order to identify the predictors that contribute the most to the classification into groups.

Table XXXVII: Canonical Discriminant Function Scores Evaluated at Group Means (Group Centroids) (N=30)

Group	Alexithymia + WORS (CR and AT) Group Centroids	
	Function 1	Function 2
Non-Psychosomatic (NP)	0.15	0.53 (AT)
Rheumatoid Arthritis (RA)	-0.90	-0.19
Ulcerative Colitis (UC)	0.74	-0.34 (Alex)

Tables XXXVI and XXXVII showed that Alexithymia is the most powerful or significant contributor to the classification of subjects into the ulcerative colitis (UC) group. Complexity of Representations of People (CR) is the second most important classification predictor in this model. CR may have contributed to correct classification of subjects into the RA group for function 1 and misclassification for function 2. Affect-tone of Relationships (AT) was the third (almost a tie with the second, see Table XVIII) most powerful contributor to the classification into the Non-psychosomatic (NP) group. The eigenvalue is slightly higher than that of the WORS only model (Table XIX). Furthermore, the present model explains almost 77% of the Variance and it is quite significant statistically ($p < .02$).

Table XXXVIII: Group Prediction and Classification Results of Discriminant Functions for the 3 Groups using Alexithymia + WORS (CR and AT) or WORS (AT, CR, and SC) (N=30)

		Predicted Group Alexithymia + CR + AT Model (1)NP 2(RA) 3(UC)			Predicted Group AT + CR + SC WOR Model (1)NP 2(RA) 3(UC)		
10	(1)NP	4 40%	1 10%	5 50%	6 60%	1 10%	3 30%
10	(2)RA	3 30%	6 60%	1 10%	3 30%	6 60%	1 10%
10	3(UC)	1 10%	1 10%	8 80%	3 30%	1 10%	6 60%
% of Subjects							
Correctly Classified = 60%						60%	
Classification by Chance = 33%						33%	

Table XXXVIII shows that the Alexithymia (Alex) plus Complexity of Representations of People, and Affect-tone of Relationship Paradigms Model was very successful at classifying the UC group (80%). However, the presence of Alexithymia in the model resulted in a 20% misclassification into the NP group. Further, the Alex + CR + AT Model did not affect the classification rate (%) for the RA group nor did the exclusion of Social Causality. Therefore, this suggests that the 60% correct classification into the RA group represents the contribution of Complexity of Representations of People and Affect-tone of Relationships. Paradigms and not due to Alexithymia or Understanding of Social Causality. In other words, Alexithymia and Understanding of Social Causality were not good predictors for the RA group. Although the percentage of subjects correctly classified is only 60% for both models, the Alex+CR+AT model explains more of the variance and is quite successful in classifying the UC group. Both models were only moderately successful in predicting the classification into the RA group. However, the Alex + CR + AT Model helped identify CR and AT as significant predictors for RA group classification. Finally, the AT + CR + SC Westen Object Relations Model appeared to be a slightly better model for predicting classification into the NP group although it was only moderately successful in doing so (60%).

A last statistical procedure of a Chi-square Analysis was also performed to identify any trend in the Westen Object Relations Scales when analyzed by individual TAT Card (Table XXXIX).

TABLE XXXIX: Westen Object Relations Scales (Based on the TAT)
Chi-Square Test by Card
 Groups Comparison: RA and UC and NP (N=30)

WOR Scale Variables	χ^2	DF	P
Complexity of Representations of People			
Card 1	5.21	8	.73
Card 2	7.36	8	.49
Card 4	7.46	8	.48
Card 6GF	4.36	1	.03
Card 7GF/BM	14.27	8	.06
Card 13MF	7.14	6	.30
Affect-Tone of Relationships			
Card 1	7.40	6	.28
Card 2	6.30	6	.42
Card 4	9.45	8	.30
Card 6GF1	15.81	8	.04
Card 7GF/BM	7.07	6	.31
Card 13MF	10.16	8	.25
Emotional Investment			
Card 1	8.04	8	.42
Card 2	8.92	6	.18
Card 4	9.18	8	.33
Card 6GF	3.74	1	.05
Card 7GF/BM	7.46	8	.49
Card 13MF	4.66	8	.79
Social Causality			
Card 1	11.12	6	.08
Card 2	10.89	6	.09
Card 4	10.40	8	.24
Card 6GF	12.87	8	.11
Card 7GF/BM	16.27	6	.01
Card 13MF	5.77	8	.67

As illustrated by Table XXXIX, the most interesting trend in the Object Relation according to the Westen Scales is Card 6GF which was statistically significant for 3(CR, AT, and EI) of the Scales. Here it is important to point out that among all the 6 cards

used in this research, Card 6GF was the only one that depicted people interacting in a non-threatening manner.

CHAPTER V

DISCUSSION

This chapter is organized according to the following format: first, the basic findings of the study are presented. This is followed by some tentative conclusions that can be drawn from the present study. The final section presents a discussion of some of the implications of the present findings for future research.

Findings

Overall, the 3 groups (RA, UC, and NP) were matched by gender, ethnicity, religion, and marital status to reduce the risk of bias. In terms of education, the two psychosomatic-autoimmune (RA and UC) groups were slightly better educated in comparison to the NP group. As for the disease information variable, chronicity, the more chronic RA patients (10+ years) tended to have been diagnosed longer than the UC patients, although this difference was not statistically significant.

As noted in the Results section, the Bell Object Relations Subscales (Alienation, Insecure Attachment, Egocentricity, and Social Incompetence) failed to distinguish the RA, UC, and NP groups. Thus, the expectation that the groups would differ in the behavioral manifestations of object relations, as measured by the BORI subscales, was not confirmed.

As for the Westen scales the two-group comparison between RA and NP subjects (N = 40) found a statistically significant difference in object relations only in terms of

the Capacity for Emotional Investment in Relationships and Moral Standards. In addition, RA and NP subjects did not differ in alexithymia at a statistically significant level.

In the three group comparison, when the subjects were matched for gender and age ($N = 30$), statistically significant differences were found for Complexity of Representations of People (between the RA and NP groups), Affect-tone of Relationship Paradigms (between RA and NP as well as between RA and UC groups), and Alexithymia (between RA and UC as well as between UC and NP groups).

Finally, the canonical discriminant analyses revealed the following significant predictors for each of the groups: for the RA group those predictors were Complexity of Representations of People and Affect-tone of Relationship Paradigms. In addition, according to these analyses, Understanding of Social Causality and Alexithymia were not good predictors for correct classification of subjects into the RA group. For the UC group Complexity of Representations of People, and Affect-tone of Relationship Paradigms turned out to be the most powerful predictors for correct classification into this group. As for the NP controls, Complexity of Representations of People, Affect-tone of Relationship Paradigms, and Understanding of Social Causality were significant predictors for correctly classifying subjects into the healthy (NP) group.

Conclusions

These results must be interpreted with caution given the small sample size and selection effect. Based on the present findings and limitations of the data, it is tentatively

concluded that there are a few small, but worthy of mention, differences among the groups.

I. Westen Object Relations Scales

The fact that the Westen Scales, a projective measure based on the TAT, were able to distinguish the groups, and the BORI which is an objective measure did not, is interesting. These findings may be due to the fact that the construct of object relations exists at a deeper, more unconscious level for these subjects, in which case only a projective measure could tap these dimensions. In this case, the responses on the BORI may be more under conscious control and may be influenced by social desirability. Hence, hypothesis 1, which predicted that the RA would differ from NP subjects in object relations as measured by WORSS and BORI, was only partially confirmed. That is, 3 Westen Object Relations Scales--the Capacity for Emotional Investment and Moral Standards, Complexity of Representations of People, and Affect-tone of Relationship Paradigms--showed statistically significant differences for RA and NP controls. Furthermore, RA and UC subjects differed at a statistically significant level on Affect-tone of Relationship Paradigms.

Inter-group Differences

The RA subjects turned out to be a very heterogeneous group. That is, on all 3 Westen Object Relations Scales which were statistically significant for RAs (Affect-tone of Relationship Paradigms, Complexity of Representations of People, and the Capacity

for Emotional Investment and Moral Standards) some RA subjects scored low ($\geq 50\%$) and others scored high ($\geq 30\%$). The following figures (I-III) illustrate that the RA group is heterogeneous with two subgroups (bimodal). Given that the RA group turned out to be very heterogeneous and bimodal and the other two groups (UC and NP) more homogeneous, the discussion of the inter-group differences will be based not on group means but on the scattering of the distribution.

Figure 1 (which represents a comparison between RA and UC subject scores on Affect-tone of Relationship Paradigms while controlling for NP) shows that about 60% of the RA subjects scored below level 3 (average) while the other 40% scored above average on Affect-tone of Relationship Paradigms. More specifically, those RA subjects who scored at the lower end indeed scored the lowest on this variable of the 3 groups. As for the UC group, it tended to be much more homogeneous than the RAs. That is, 80% of the UC subjects scored average or above average as opposed to 40% of the RAs on Affect-tone of Relationship Paradigms. Therefore, the RA group differed not only from the other psychosomatic-autoimmune group (UC) but also from the non-psychosomatic (NP) controls in that its subjects scored the lowest of all 3 groups. The RA group tended to cluster above and below the average value (level 3).

As shown in Figure 2 (Complexity of Representations of People comparing RA and UC while controlling for NP) 70% of the RA subjects scored below average (level 3) and 30% scored above average. In the Complexity of Representation of People, RAs scored and clustered at levels either very high or low. This suggests that the RA group

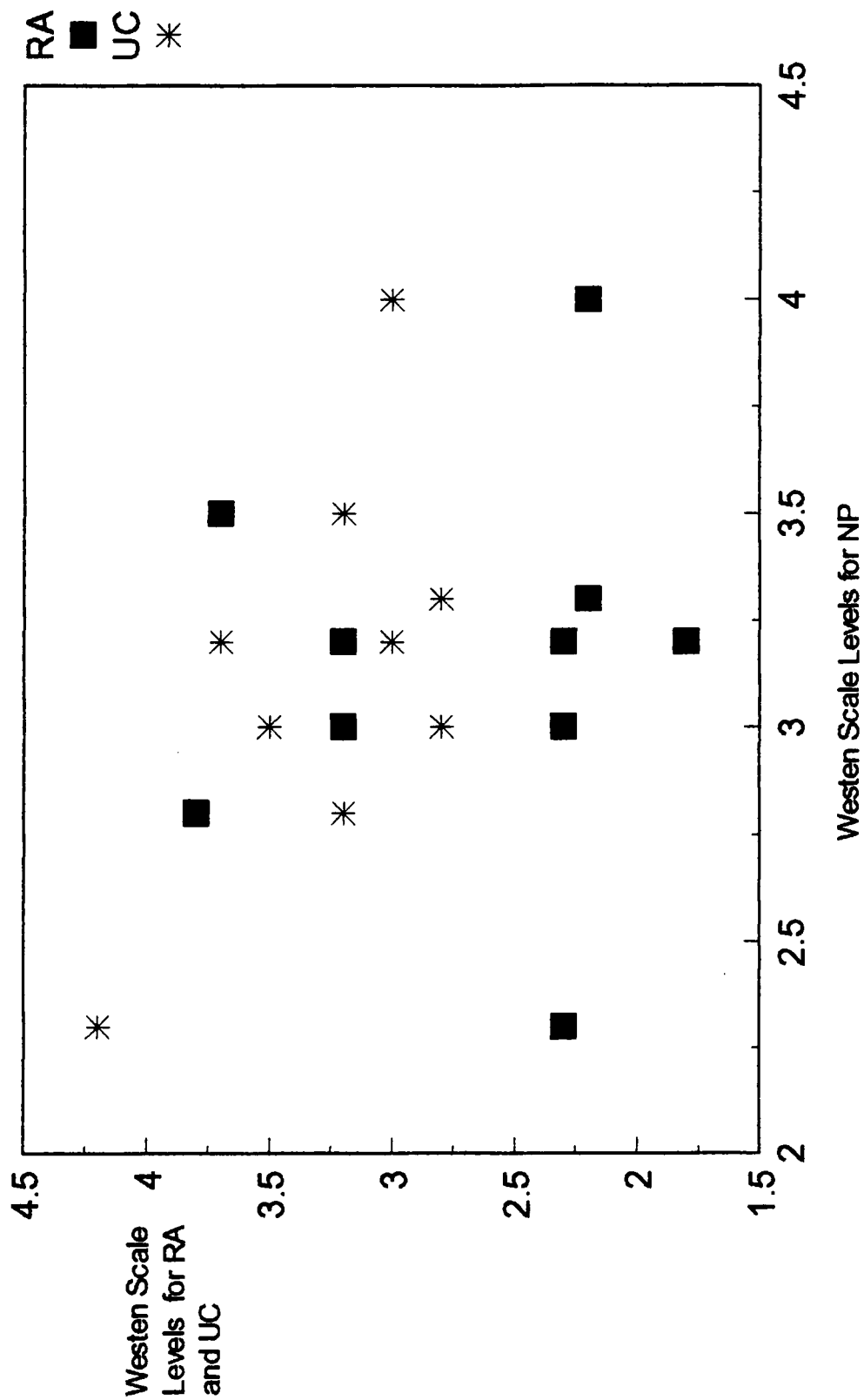


Figure 1: Affect-tone of Relationship Paradigms
Comparing RA and UC controlling for NP (N=30)

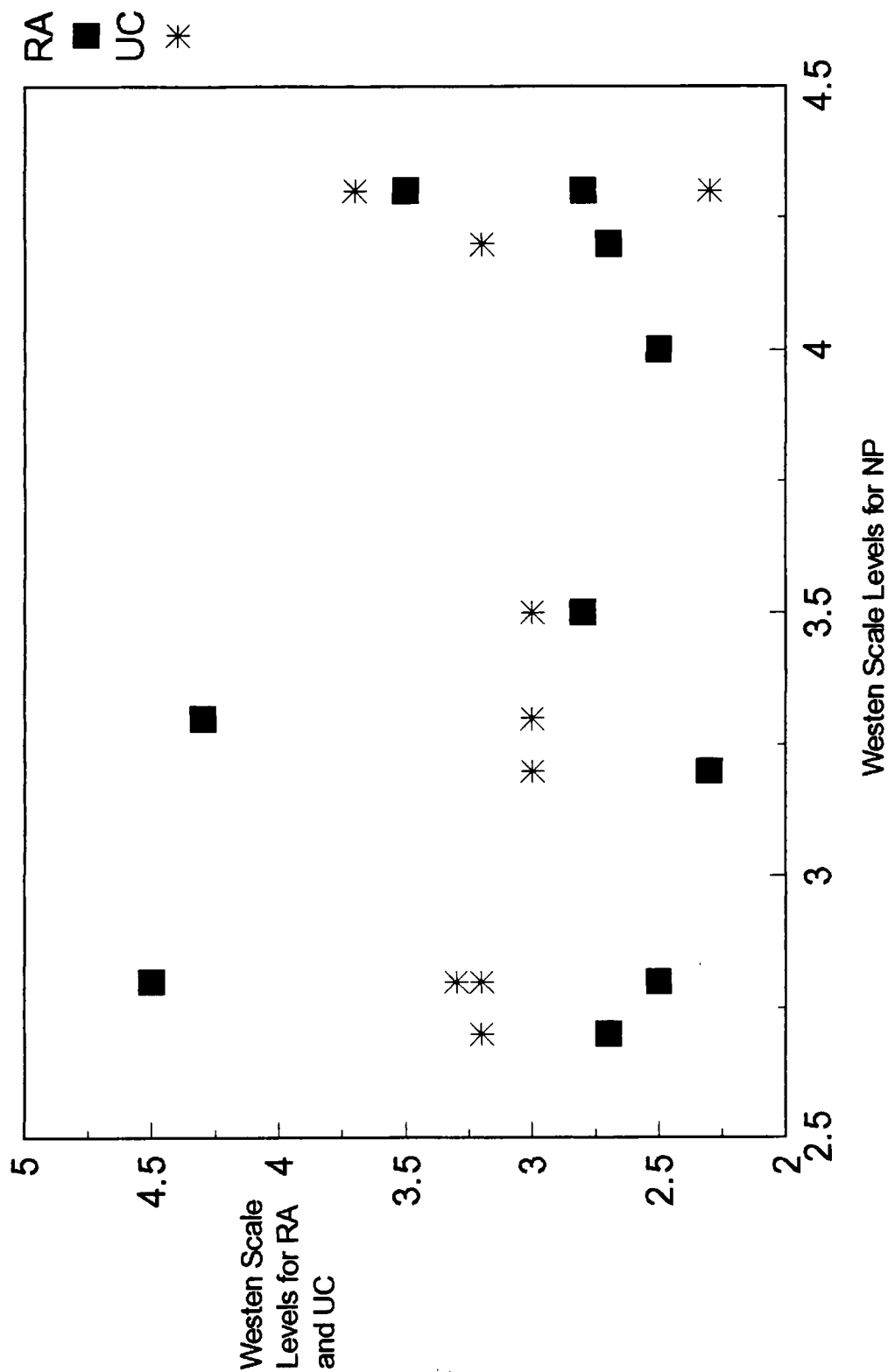


Figure 2: Complexity of Representations of People Comparing RA and UC controlling for NP (N=30)

is bimodal. That is, there are 2 subgroups (high and low) within this group. On the other hand, the UC group tended to be more homogeneous in that $\geq 80\%$ of the subjects scored average or above on this dimension of object relations.

Figure 3 (which illustrates a comparison between the RA and UC groups while controlling for NP on the Capacity for Emotional Investment and Moral Standards) shows that about 50% of the RA subjects scored below and 40% scored above average. The RA group did not seem to differ a great deal from the UC group. Once again, the RA group showed a bimodal tendency in scoring too high or too low on Capacity for Emotional Investment and Moral Standards.

Given the above findings, it seems reasonable to suggest that the RA group is heterogeneous and bimodal group. That is, there seems to be no uniform, specific pattern of object relations for all RA patients. Instead, the present study shows that the RA group consists of 2 subgroups in terms of object relations as measured by the Westen Scales (CR, AT, and EI). The first subgroup is composed of those people who scored average or above on all 3 scales (which is called the more differentiated object relations RA Subgroup). More specifically, this group scored level 4 on Complexity of Representations of People (CR), level 3 on Affect-tone of Relationship Paradigms (AT) and level 3 on the Capacity for Emotional Investment and Moral Standards (EI). On the other hand, the second subgroup consisted of those RA subjects who scored level 2 on all 3 Westen Object Relations Scales (CR, AT, and EI). This subgroup is called the less differentiated RA subgroup. The following paragraphs describe the profile for these two RA subgroups.

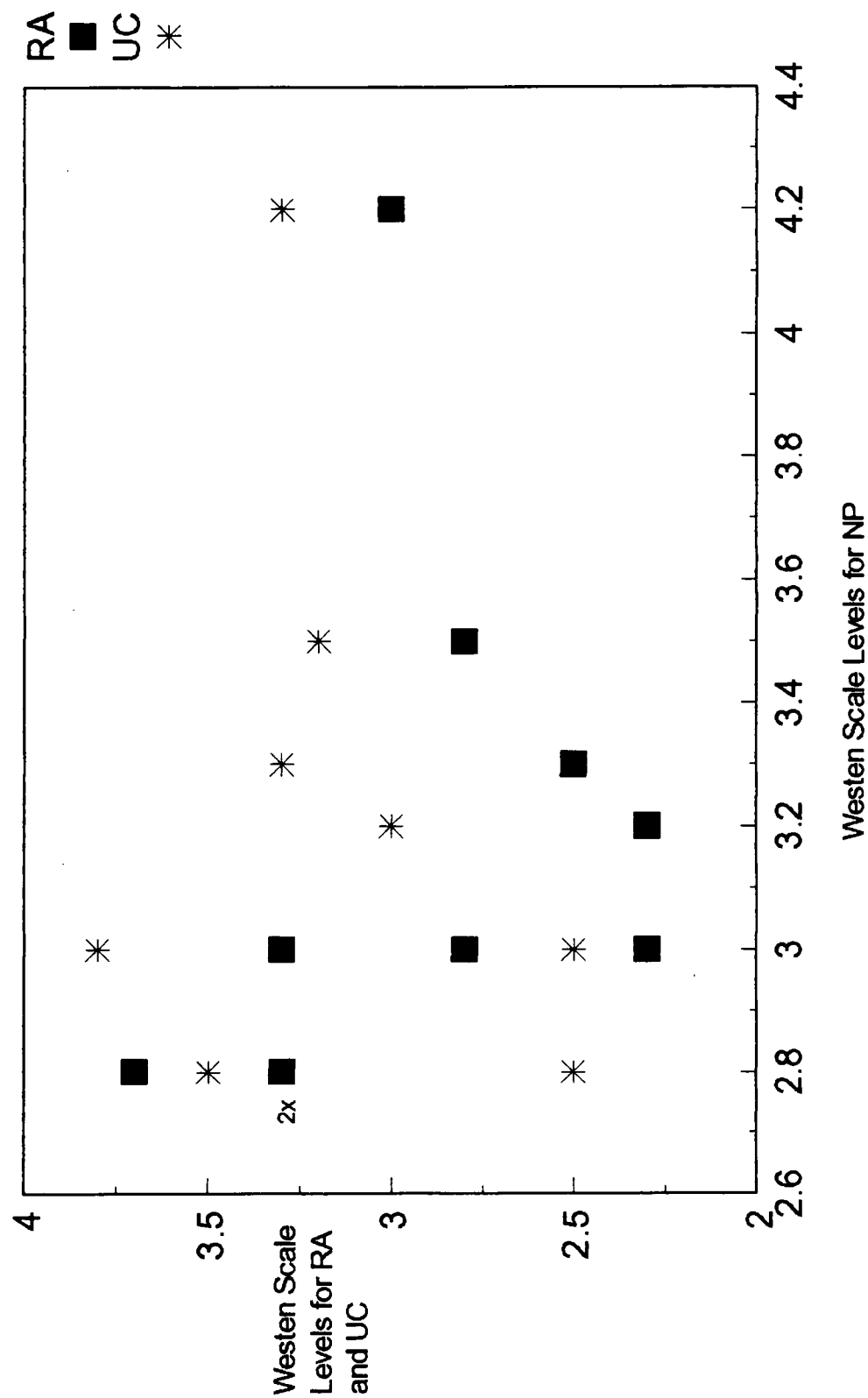


Figure 3: The Capacity for Emotional Investment and Moral Standards Comparing RA and UC controlling for NP (N=30)

The More Differentiated Object Relations (MDOR) RA Subgroup

In terms of Complexity of Representations of People, the more differentiated object relations RA subgroup seems to be able to appreciate the complexity of the subjective states of other people and appears to have some understanding that personality is a complex system of interacting dispositions. However, their understanding is still not sophisticated enough to realize that in this interactional system of personality certain enduring dispositions sometimes may come into conflict with each other, or that different dispositions can be brought to bear in different ways in different circumstances. More specifically, even though these subjects are capable of recognizing the potential for disparities among actions, self-presentations, and internal states, they seem to have less awareness of conflicts between conscious and unconscious mental events/processes.

Affect-tone of Relationship Paradigms is supposed to measure the individual's perceptions and expectations of the world, especially the world of people. This affect-tone continuum ranges from perceiving the social world as malevolent/overwhelmingly painful to benevolent/enjoyable. People can be experienced as malicious, abandoning, abusing on the one hand or loving and caring on the other hand. The subjects in the more differentiated object relations RA subgroup seem to see people as capable of loving and being loved, of caring and being cared for. However, on balance social interaction is perceived as mildly negative. This may suggest that these subjects are aware that there are people in the world who are capable of malevolence which, in turn, may be a reflection of painful experiences with people in the past.

The Capacity for Emotional Investment is a dimension of object relations that measures the individual's capacity for attachment. This dimension is assessed in a continuum ranging from regarding others in terms of need-gratification (narcissism) to interdependence based on the ability to give and take, love and be loved, respecting and being respected, and so on. The more differentiated object relations RA subgroup tends to consider the needs and wishes of significant others in making their decisions. However, they consider the needs and wishes of others at their own cost. That is, they tend to sacrifice their needs and desires for those of others in order to be liked by significant others and to avoid guilt when thoughts, feelings, or actions conflict with internalized standards. In terms of moral standards, these subjects see rules, norms, and conventions as important and natural. They seem to have a pronounced sense of duty, especially with significant others and value relationships.

This MDOR RA subgroup looks more like the UC and NP subjects who scored average or above, except on Complexity of Representations of People where the MDOR RAs scored even higher than their cohorts in the other two groups.

The Less Differentiated Object Relations (LDOB) RA Subgroup

Complexity of Representations of People aims at assessing the extent to which the person is capable of differentiating his/her perspectives of "self" and "other" and perceiving self and others as psychological beings possessing complex motives and subjective experience. The less differentiated RA subgroup subjects are capable of perceiving other people as clearly bounded, separate from self and from one another.

However, they seem to lack an elaborate sense of other people's subjective states, motives, or enduring traits. They tend to focus largely on behaviors and moment to moment actions. They see people as basically unidimensional, existing in specific situations instead of across situations. In cases when these subjects do see other people as having enduring qualities such qualities tend to be global traits (i.e., "good" or "bad").

As for Affect-tone or the emotional quality of object representations of people and relationships, the less differentiated RA subgroup patients seem to perceive the world--especially the world of people--as hostile, capricious, unpredictable, empty, or distant, but not necessarily as overwhelming. They may feel terribly alone and, at times, experience other people as unpleasant or uncaring, but not necessarily as threatening to their existence.

Regarding the Capacity for Emotional Investment and Moral Standards, the less differentiated RA subgroup subjects appear to have a clear sense of potential conflicts between their needs and desires and those of others, although the primary aim remains the satisfaction of their own needs. Although these subjects may clearly have attachments, emotional investment in other people (as in concern for other people and the pursuit of the good of significant others) remains secondary to self-interest. In terms of moral standards, they are not quite at the principled level of moral development yet, in that "bad actions" are bad because they may lead to punishment and subsequent remorse.

This less differentiated object relations RA subgroup showed the greatest intergroup difference in that these RA subjects scored the lowest among the 3 groups on

all 3 Westen Object Relations Scales (CR, AT, and EI). These results lend some support to the psychological as well as the biological etiology of Rheumatoid Arthritis. In other words, the less differentiated object relations subgroup may experience more psychological distress trying to deal with the disease and its limitations which, in turn, may further exacerbate the condition of the disease. In this case, the psychological aspect may be a more significant factor than it is for those RA subjects in the more differentiated subgroup. Linville (1985) has found that complex representations of self buffer affective extremity or emotionally charged experiences.

The main focus of the psychosomatic object relations model is the ego deficit in which the psychosomatic symptom serves as a substitute for the missing psychic structure, compensates for the deficit, and functions as a defense against separation and annihilation anxiety. Such a defense (the symptom) is self-destructive, but appears to serve the patient who does not have any other coping mechanism available to perform these functions.

In this theory of object relations, the process of self-object integration takes place as the infant's somatic, sensory, motor, affective, and impulse experiences unfold within the presence of a consistent, predictable, mothering person who functions as a bridge between external reality and the infant's body experiences. Optimally, the child reaches a phase-appropriate capacity to soothe and calm themselves with mental representations (acquired incrementally from interaction with an optimally nurturing/functioning mother) in her absence (Ammon, 1979; Fairbairn, 1952; Horner, 1984; Kohut, 1971; Mahler, 1968; Winnicott, 1965, 1966). A failure in the process of self-object integration or

traumatic disappointment in the mother as psychic regulator can lead to a structural defect in the self. In other words, the internal mental structure for psychic regulation is not developed (Horner, 1984).

Leading researchers in psychosomatic medicine and psychobiology have proposed that object relations may play a significant role not only at the intrapsychic but also at the psychobiological level in predisposing people to disease (Hofer, 1978, 1981, 1983, 1984; Rees, 1980; Schwartz, 1981; Taylor, 1987; Weiner, 1982). Taylor (1987) argues that even though constitutional factors may disregulate certain physiologic regulatory mechanisms and consequently predispose an individual to a disease of regulation such as rheumatoid arthritis, there is growing evidence that disruptions in object relationships can also disregulate physiological processes. This view of diseases of regulation is shared by other researchers (Rees, 1980; Schwartz, 1981; Weiner, 1982). These researchers propose that disturbances in homeostatic regulatory processes can happen at the interpersonal and social level as well as at the cellular level. Such disturbances can lead to psychobiological disregulation (Schwartz, 1979) and increase susceptibility to diseases such as rheumatoid arthritis, bowel disorders, essential hypertension, bronchial asthma, and peptic ulcer.

Hofer and his associates in a series of animal studies (1978, 1981, 1983, 1984) were able to identify nutritional, tactile, thermal, and vestibular mechanisms that regulate several biological functions in the infant animal until they are substituted by self-regulation mechanisms. Even though it is important to be cautious in extrapolating from

animal studies to humans, these researchers suspect that similar processes may also take place in the human mother-infant relationship.

Hofer (1978) has come to the conclusion that the mother

serves as the external regulator of the infant's behavior, its physiological state and the chemistry of its maturing brain and heart (Hofer, 1978, p.110)

Hofer ascertains that these regulatory processes are mediated by several of the infant's receptors and input channels. Further, he points out that these interactional regulatory processes are hidden within the usual/regular mother-child interaction and are only revealed on separation whenever the interaction is disrupted. This suggests that the mother, acting as the external psychobiological regulator of the infant's behavior and physiology, is fundamental for the maturation and development of the infant. Hofer asserts that at the point of weaning for animals (the gradual process of accustoming a mammalian offspring to do without the mother's milk or substitute thereof) where the mother is no longer essential to the infant's complete psychobiological functioning. Supposedly at that time behavior and bodily functioning become self-regulating and internal autonomic mechanisms take over to regulate the heart rate (Hofer, 1978). Given these findings, it seems reasonable to suggest the possibility of an increasing psychological and psychobiological susceptibility to psychosomatic or regulation disease such as rheumatoid arthritis.

Research done with human infants offers support to Hofer and associates' (1978, 1981, 1983, 1984) contention that the mother-infant interactional system functions as organizer and regulator of the infant's behavior and physiology from the time of birth.

Even though this regulatory system starts at a biological-neuropsychological-behavioral level of organization, it slowly shifts to a more psychological level as the infant's mind develops the ability to symbolize, to think, to make use of language, and as the infant becomes increasingly aware of being separate or individuated from their mother. That is, according to Mahler's model (1968, 1975), the child goes through a process of psychological weaning where he/she gradually separates and (one hopes) eventually breaks the psychological dependence on the mother/mother figure which symbolized the achievement of the separation-individuation phase (Taylor, 1987). Stern (1977) has described the human mother and infant in interaction as "virtuoso performers" referring to their reciprocal ability to regulate each other's behavior. In addition, Sander (1975, 1983) has found that as infants progress through Mahler's (1968) subphases of separation-individuation, they show increasing capacity to regulate their own behavior.

Although the literature on object relations of RA patients per se is extremely limited, some studies on early mother-child interactions and later relationships RA subjects may provide some important clues about these patients' object relations. Ludwig (1949) found that the mothers of RA patients seem to have given their children an inadequate feeling of security in early years. This was shown by a rejection of the child either overtly, or by an extreme degree of overprotectiveness and overanxiety. As a result of this inadequate feeling of security, the child's development toward a free, independent existence is hampered which, in turn, will foster attitudes of dependence and helplessness. Blom & Nichols (1954) in a study of RA children, observed a frequent history of severe emotional or physical deprivation early in life. These researchers

suggested that the issue of separateness-individuation seems to start in early childhood, with an extreme mother-child interdependence and great conflict in the child about trying to move apart from the mother.

The difficulty around the issue of separation/individuation from mother may be at the core of RA problems in forming close relationships. Booth (1936) found that over half of a sample of 43 patients with RA reported that they had difficulty in making friends. Other researchers, such as Ludwig (1949) and McLaughlin et al. (1953), have also reported that RA patients have difficulty in developing satisfying relationships with other people. These investigators describe the RA patients as very sensitive and highly perceptive of other's feelings (particularly if these feelings were of a hostile or unfriendly nature), allowing themselves to be imposed upon by others as opposed to risk offending them. Blom and Nichols (1954) maintained that this problem was also present in the RA children of their sample in that they could not transfer feelings of security from parents to hospital personnel. That is, they could not balance off the frightening aspects of hospitalization with positive feelings of trust and support from the hospital staff.

Earlier studies on the perception of RA patients and their mother suggest some difficulty in object relations. Holliday (1942) found that RA patients often perceived one or both of their parents, especially the mother, as rather strict and uncompromising in discipline. Johnson et al. (1947) reported findings indicating that in the family background of female RA patients, there was predominantly a strong, domineering, demanding mother, along with a gentle, compliant father. Cleveland & Fisher (1954) carried out a similar study with a sample of male RA patients. They found that RA men

perceived their mothers as hard working, efficient, and "Christian" women (as measured by self-sacrifice to the point of being a martyr), but also behaving as the primary disciplinarian (and a strict one in that regard). As for the fathers, they were perceived as inconsistent in their behavior (being both weak as well as strong) and somewhat unpredictable (in terms of emotional outbursts to situations where they usually show minimal affect).

Cobb et al. (1969) found that RA female patients tend to recall their mothers as being arbitrary, severe, unreasonable, and controlling. Further, they reacted to their mothers with a high degree of covert anger, but with little overt aggression and resistance. However, despite their recollections of their mothers in the "negative way", the RA women chose them as role models as frequently as did the women without RA. As for recollections and reactions toward their fathers, there was no difference between the RA and control groups. In their current personality functioning, the RA women showed a continuation of conflicts over the expression of aggressive impulses. They revealed a high level of anger, but wanted to control it. The RA group reported a greater number of poor mental health symptoms compared with the control group. Their relationships with their husbands were characterized by a great deal of anger and aggression expressed toward one another. As for the RA men, they did not show the same attitudes toward their mothers as did their female counterparts. Similar to the women, the RA men reported more symptoms of poor mental health than their control group (non RA men).

Baker (1982) carried out interviews with all patients from a rheumatology clinic. The sample consisted of patients who were diagnosed to be developing early Rheumatoid Arthritis. The results indicated that 86% of the RA sample reported either a negative relationship with their mother or a perceived stressful life event before the onset of RA symptoms (Baker, 1982). No control group was mentioned in the article.

The present study showed that the less differentiated object relations RA subgroup (LDOR), regarding the affect-tone of relationship paradigms, tend to perceive the world--especially the world of people--as hostile, capricious, unpredictable, distant, and to perceive people as uncaring. This may lead to difficulties in asking for help but, by the same token, these patients may also resent people for not offering to help in terms of managing life with RA. In terms of emotional investment, this RA subgroup (LDOR) seems to have difficulty taking into account other people's needs and desires and their view of moral standards appears to be somewhat concrete in that actions are considered "wrong" because they may lead to punishment and subsequent remorse. Finally, as for complexity of representations of people, these patients tend to have only a superficial and global understanding of other people's enduring qualities. That is, their ability to distinguish the perspective of self and other lacks elaboration and differentiation. All the object relations difficulties/deficits described above are, according to object relations theory, connected with separation-individuation (Mahler, 1968) from their mother/another figure (Alexander, 1950; Blom & Nichols, 1954; Ludwig, 1949). This inability of the less differentiated RA patient to successfully separate from mother may account for their difficulty in forming deep and meaningful relationships which has been shown in the

literature (Booth, 1936; Ludwig, 1947; McLaughlin et al., 1953). The present findings indicate that the RA patients with less differentiated object relations tended to feel alone. This subgroup of RA patients fit Alexander's conflict notion of constellations. He postulated that individuals, in seeking to move beyond dependency (failure to separate from mother/mother figure), incorporate the stress; such a move may result in an overstimulation of the sympathetic system, and the related chronic alertness can lead to the development of diseases such as arthritis. In sum, the present findings seem to be consistent with early mother-child interaction and later relationships in RA patients, in terms of the less differentiated RA subgroup. However, the earlier research does not include or acknowledge a more differentiated object relations RA subgroup such as the one revealed and described in this study. This may have to do, in part, with a lack of methodological rigor in the earlier literature but it may also be possible that RA patients indeed are a bimodal, group in terms of object relations as suggested by the present findings. Therefore, for those RA patients who showed object relations deficits in this research, it seems reasonable to ascertain that such difficulties may have developed in the first two years of life due to difficulty in separation-individuation. In sum, these results suggest that (a) there seems to be no specific pattern of object relations for all psychosomatic-autoimmune patients; (b) RA patients differ from NP controls on object relations, and (c) the RA group is bimodal in that it consists of a more differentiated and a less differentiated object relations subgroup.

II. ALEXITHYMIA

In terms of Alexithymia, the RA group was the least alexithymic of the 3 groups. On the other hand, the UC group was the most alexithymic of the 3 groups. The difference between RAs and NPs was not great or statistically significant, but noticeable. However, the greatest discrepancy was between the two psychosomatic-autoimmune groups (RA and UC).

The construct of alexithymia refers to the individual's ability to label, and to verbalize their feelings (Sifneos, 1972, 1973, 1977), to fantasize (Nemiah, 1977), and titrate (filter) emotions (Lesser, 1981). The present findings suggest that alexithymia is not the problem of RA patients. They seem to be able to label and express their feelings verbally, titrate (filter) emotions (which keeps one from feeling overwhelmed by the affect), and to have a fantasy life. This may help RAs deal with the shock of being diagnosed with RA and having to live with the limitations brought about by this disease. The present finding is consistent with some previous research. For example, McLaughlin et al. (1953) studied dream recall and Moldofsky and Chester (1970) investigated mood patterns in RA patients. The results of these studies show that those RA patients who expressed relevant mood states or fantasies did better physically than those who did not express their moods and fantasies. Vollhardt (1986) studied RA patients who were RA Factor positive or negative, with or without joint changes, and other arthritic patients in terms of alexithymia. The results showed no difference among the three groups.

In India, Fernandez et al. (1989) found a significant relationship between alexithymia and RA using the Beth Israel Hospital Psychosomatic Questionnaire (BIQ)

and the Toronto Alexithymia Scale (TAS). Here it is important to point out that cultural differences in labeling and verbalizing emotions may have influenced the results. Finally, Achterberg-Lawlis (1982), based on early studies, argues that RA subjects appear alexythymic in that they are poor in fantasizing, verbalizing feelings, and thinking operationally. However, it is important to keep in mind that the early studies on RA patients utilized little methodological rigor.

In sum, the present findings suggest that not all psychosomatic-autoimmune subpatients are alexithymic and that alexithymia does not seem to be the problem of RA patients.

Implications for Future Research

The results of this exploratory study on the object relations patterns of RA patients and Alexithymia presents several limitations. First, the sample size was too small ($N=30$) for the three-group comparison. Ideally this researcher would like to have obtained 20 subjects per group. The goal was reached for the NP and RA groups but not for the UC group. The psychosomatic groups, RA and UC, were extremely difficult to find. Finally, some RA patients reported they were very leery about psychological tests and studies and some of their doctors had a very paternalistic attitude toward their patients, which made it difficult to get them to participate. In addition, the fact that the UC patients were in general younger, limited the participation of older RA patients. It is recommended that the next researcher should include older RA patients because there is a large RA population (ranging from 60 to 80 years of age) that may not be receiving attention from the psychosomatic medicine community.

The heterogeneity of the RA group distribution on some of the Westen Object Relations dimensions (scoring extremely low and extremely high) lends some support to the psychological as well as the biological etiology of Rheumatoid Arthritis. In other words, the very low or less differentiated object relations RA subgroup ($\geq 50\%$) may experience more psychological distress in their attempts to deal with the disease and its limitations. In this case, the psychological aspect may be a more significant factor than for the other subgroup which shows a more differentiated level of object relations. These two subgroups are very different, not only in how they perceive and respond to their disease but also in terms of treatment. The more differentiated object relations RA subgroup may do well with medication, rest, special exercise, and social support from family and friends. On the other hand, the less differentiated object relations subgroup in addition to medication, rest, special exercises, social support from family and friends, may greatly benefit from psychotherapy and eventually (once they develop some object constancy) RA support groups. For the latter group the psychologist may play a more significant role in the course of RA. Therefore, the first thing any health care provider (physician, nurse, or psychotherapist) needs to do in treating these patients is to determine to which of these two subgroups the RA person belongs.

The results revealed in the present research suggest that this model is just the first step toward finding a more adequate psychological model, to explain RA. Future researchers should explore other variables, such as child and adulthood key objects, and significant loss in addition to the present model using a larger sample. In sum, this

research stimulated or raised more questions about the object relations of RA patients than it answered.

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APPENDICES

APPENDIX A

Attention Rheumatoid Arthritis Patients

UT researcher seeks participants in doctoral study

A University of Tennessee researcher is seeking rheumatoid arthritis patients who are willing to participate in a study involving the connection between personality and emotions, and illness.

Participation involves an interview and filling out questionnaires.

Each person will receive \$15 for full participation.

Patient's identity will be kept confidential.

If you would like to participate in this research project, or if you have questions, please contact:

**Erlete Ascencao, 673-6643
or Psychology Department
310 Austin Peay Building
University of Tennessee
974-6846 (message)**

APPENDIX B

Subject Recruitment Letter

The purpose of this dissertation research project is to study the connection between personality, emotions, and illness in rheumatoid arthritis and ulcerative colitis patients. Your participation requires that you fill out questionnaires or checklists, participate in a short interview, fill out data sheet, and make up some stories in response to pictures. Total participation time will be about two or three hours and can be done in more than one session. Each participant not receiving extra credit will receive \$15.00 for full participation.

You may stop your participation at any time without penalty. All subjects will receive a summary of our findings upon completion of this project.

Your identity will be kept confidential. All test forms will be identified by a code number. After completion of the study the data sheet with your name and phone number will be destroyed. Your participation in this study is voluntary and you may withdraw at any time. No information regarding your participation will be reported to your medical doctor without your written consent.

If you would like to participate in this research project, or if you have any questions about this research project or about your rights as a research subject now or later, please contact: Erlete Ascencao, the Psychology Dept., 310 Austin Peay Bldg., 974-6846 (leave a message), or call me at 673-6643.

Thank you for reading this letter and considering our request.

Sincerely,

Erlete M. Ascencao, Ph.D. (in Sociology)
Ph.D. candidate in Psychology at U.T.

Kim Keinath, M.Sc.

Leonard Handler, Ph.D.

APPENDIX C

**RA Patients
Informed Consent Document**

The purpose of this research project is to study the connection between personality, emotions, and illness in rheumatoid arthritis patients. Your participation requires that you fill out questionnaires or checklist, participate in a short interview, make up some short stories in response to pictures and fill out a data sheet. Total participation time will be about two or three hours and can be done in more than one session at your convenience.

You may stop your participation at any time without penalty. All subjects will receive a summary of our findings upon completion of this project.

Your identity will be kept confidential. All test forms will be identified by a code number. After completion of the study the data sheet with your name and phone number will be destroyed. Your participation in this study is voluntary and you may withdraw at any time. No information regarding your participation will be reported to your medical doctor without your written consent.

If you would like to participate in this research project, or if you have any questions about this research project or about your rights as a research subject now or later, please contact: Erlete Ascencao, the Psychology Dept., 310 Austin Peay Bldg., 974-6846 (leave a message), or call me at 673-6643 (home).

* * * * *

I have read and understood the explanation of this study and agree to participate, and authorize my rheumatologist to release medical information pertaining to my diagnosis of rheumatoid arthritis.

(Name)

(Date)

(Signature)

* (Erlete Ascencao, Ph.D., Leonard Handler, Ph.D., and Kim Keinath, M.Sc.)

**Normal Controls
Informed Consent Document**

The purpose of this research project is to study the connection between personality, relationships, emotions, and illness in ulcerative colitis patients. Your participation requires that you fill out five questionnaires or checklists, and make up some short stories in response to pictures. Total participation time will be about three hours and can be done in more than one session at your convenience.

There are no known risks to this study. A researcher or assistant will be available at all time to answer questions and provide any help necessary.

You may stop your participation at any time without penalty. All subjects will receive a summary of our findings upon completion of this project.

Your identity will be kept confidential as all test forms will be identified by a code number. Data cards containing your name and phone number will be kept in a locked filing cabinet and will be destroyed when all data has been gathered. Again, Your participation in this study is voluntary and you may withdraw at any time.

If you have any questions about this research project or about your rights as a research subject now or later, please contact:

Kim W. Keinath, The Psychology Clinic, 227 Austin Peay Bldg., Knoxville, TN, 37796-0900, or call 974-2161 (work) or 581-4841 (home).

or

Erlete Ascencao, The Psychology Clinic, 227 Austin Peay Bldg., Knoxville, TN 37996-0900, or call 974-2161 (work) or 673-6643 (home).

* * * * *

I have read and understood the explanation of this study and agree to participate.

(Name)

(Date)

(Signature)

**Colitis Patients
Informed Consent Document**

The purpose of this research project is to study the connection between personality, relationships, emotions, and illness in ulcerative colitis patients. Your participation requires that you fill out five questionnaires or checklists, and make up some short stories in response to pictures. Total participation time will be about three hours and can be done in more than one session at your convenience.

There are no known risks to this study. A researcher or assistant will be available at all time to answer questions and provide any help necessary.

You may stop your participation at any time without penalty. All subjects will receive a summary of our findings upon completion of this project.

Your identity will be kept confidential as all test forms will be identified by a code number. Data cards containing your name and phone number will be kept in a locked filing cabinet and will be destroyed when all data has been gathered. Again, Your participation in this study is voluntary and you may withdraw at any time.

If you have any questions about this research project or about your rights as a research subject now or later, please contact:

Kim W. Keinath, The Psychology Clinic, 227 Austin Peay Bldg., Knoxville, TN, 37796-0900, or call 974-2161 (work) or 581-4841 (home).

or

Erlete Ascencao, The Psychology Clinic, 227 Austin Peay Bldg., Knoxville, TN 37996-0900, or call 974-2161 (work) or 673-6643 (home).

* * * * *

I have read and understood the explanation of this study and agree to participate. I authorize my physician to release medical information pertaining to my diagnosis.

(Name)

(Date)

(Signature)

APPENDIX D

March 8, 1993

.....
.....
.....

Dear Dr.

Your patient, Mr/Ms....., is participating in my research project studying the connection between personality, emotions, and illness in rheumatoid arthritis (RA) patient. Enclosed you will find a copy of the consent form signed by the participant authorizing this researcher to request the following information from the patient's records:

- a) Confirmation of diagnosis. Does this patient indeed have the diagnosis of rheumatoid arthritis?
- b) Length of diagnosis. How long has this person been diagnosed with rheumatoid arthritis?
- c) RA factor. Is this patient currently RA factor positive or negative?

I would greatly appreciate your assistance in sending me this information as soon as possible. If you have any questions, please contact me at 673-6643 or leave a message at 974-6846 (UT Psychology Department).

Sincerely,

Erlete Malveira Ascencao, Ph.D.
Project researcher

Enclosure
EMA/mm

APPENDIX E

BACKGROUND INFORMATION

Date: _____

Identification #: _____

1. Sex: M F
2. Age: _____
3. Race: White Black Asian Hispanic Other
4. Religion: Catholic Jewish Protestant None Other
5. Education: _____ less than 9th grade
_____ some high school
_____ high school graduate or GED
_____ some college
_____ college graduate
_____ some graduate or professional school
_____ graduate degree (specify) _____
6. Occupation: _____
7. Marital Status: _____ single
_____ engaged
_____ married
_____ living together
_____ divorced
_____ separated
_____ widowed
8. If you hve children, please list their names and ages:
9. What was the marital status of your parents when you were a child (up to age 10)?
_____ married
_____ divorced
_____ widowed
_____ other (Please explain)
10. Who were you closest to while growing up?
_____ mother
_____ father
_____ sibling
_____ other (specify) _____

11. Who are you closest to now?

- ☐ mother
- ☐ father
- ☐ spouse
- ☐ friend
- ☐ lover
- ☐ other (specify) _____

12. What has been the most significant loss in your life? Please describe this loss and your age when it occurred.

13. Do you recall ever feeling hopeless, depressed, or like giving up?
☐ Yes ☐ No If so, please describe when and why?

14. Do you have any health problems? ☐ Yes ☐ No
If so, please describe:

15. If you answered No to the above question, do you consider yourself to be in good health? ☐ Yes ☐ No

16. Have you ever been treated for mental illness or emotional problems?
☐ Yes ☐ No If so, please describe:

APPENDIX F

BELL OBJECT RELATIONS INVENTORY

Answer according to your most recent experience. Please answer all questions:

1. (1) I have at least one stable and satisfying relationship.
true false
2. (3) If someone dislikes me, I will always try harder to be nice to that person.
true false
3. (4) I would like to be a hermit forever.
true false
4. (6) I may withdraw and not speak to anyone for weeks at a time.
true false
5. (8) I usually end up hurting those closest to Me
true false
6. (11) My people treat me more like a child than an adult.
true false
7. (13) If someone whom I have known well goes away, I may miss that person.
true false.
8. (14) I can deal with disagreements at home without disturbing family relationships.
true false
9. (16) I am extremely sensitive to criticism.
true false
10. (17) Exercising power over other people is a secret pleasure of mine.
true false
11. (18) At times I will do almost anything to get my way.
true false
12. (20) When a person close to me is not giving me his or her full attention, I often feel hurt and rejected.
true false
13. (22) If I become close with someone and he or she proves untrustworthy, I may hate myself for the way things turned out.
true false
14. (25) It is hard for me to get close to anyone.
true false
15. (26) My sex life is satisfactory.
true false
16. (28) I tend to be what others expect me to be
true false
17. (29) No matter how bad a relationship may get, I will hold onto it.
true false

18. (32) I have no influence on anyone around me.
true false
19. (34) People do not exist when I do not see them.
true false
20. (36) I've been hurt a lot in life.
true false
21. (37) I have someone with whom I can share my innermost feelings and who shares such feelings with me.
true false
22. (39) No matter how hard I try to avoid them, the same difficulties crop up in my most important relationships.
true false
23. (41) I yearn to be completely "at one" with someone.
true false
24. (44) In relationships, I am not satisfied unless I am with the other person all of the time.
true false
25. (47) I am a very good judge of other people.
true false
26. (48) Relationships with people of the opposite sex always turn out the same with me.
true false
27. (49) Others frequently try to humiliate me.
true false
28. (52) I generally rely on others to make my decisions for me.
true false
29. (54) I am usually sorry that I trusted someone.
true false
30. (55) When I am angry with someone close to me, I am able to talk it through.
true false
31. (58) Manipulating others is the best way to get what I want.
true false
32. (59) I often feel nervous when I am around members of the opposite sex.
true false
33. (61) I often worry that I will be left out of things.
true false
34. (62) I feel that I have to please everyone or else they might reject me.
true false
35. (65) I shut myself up and don't see anyone for months at a time.
true false
36. (66) I am sensitive to possible rejection by important people in my life.
true false

37. (68) Making friends is not a problem for me.
true false
38. (70) I do not know how to meet or talk with members of the opposite sex.
true false
39. (71) When I cannot make someone close to me do what I want, I feel hurt or
angry.
true false
40. (73) It is my fate to lead a lonely life.
true false
41. (76) People are never honest with each other.
true false
42. (78) I put a lot into relationships and get a lot back.
true false
43. (80) I feel shy about meeting or talking with members of the opposite sex.
true false
44. (81) The most important thing to me in a relationship is to exercise power
over the other person.
true false
45. (89) I believe that a good mother should always please her children.
true false

APPENDIX G

MANUAL
for the
BELL OBJECT RELATIONS INVENTORY (BORI)
HANDSCORING METHOD

Randal J. Billington, M.S., and Morris D. Bell, Ph.D.

September, 1985

Second Edition

V.A. Medical Center
Psychological Services
West Haven, CT 06516

1985

BORI SUBSCALE DESCRIPTIONS

Object Relations

Alienation (Aln). This subscale is composed of items that indicate a basic lack of trust in relationships. High scorers feel unable to attain closeness with anyone and have little hope of ever maintaining a stable and satisfying level of intimacy. Social relations are superficial with no real sense of connection or belonging. High scorers are often suspicious or guarded, and may isolate themselves, feeling they have nobody with whom to share their innermost feelings or thoughts. They are reluctant to invest themselves with others, believing that relationships will not be gratifying and that the "other" will inevitably fail them. Empathy is limited and the motivations and inner-states of others are frequently misjudged or ignored. Relationships may be stormy, dependent, and may be disrupted by anger or hostile withdrawal. This pattern of instability will repeat itself from one relationship to the next.

Aln contains loadings from the greatest number of items and appears to represent the broadest dimension of object relations measured. A number of concepts from object relations literature are suggested by the subscale description. Issues of basic trust are theoretically linked (c.f. Mahler, 1975; Spitz, 1965; Kernberg, 1975) to difficulties in the early mother-infant bond that lead to incomplete integration of part objects (e.g. good mother, bad mother). The instability and superficiality of relationships may result from profound disappointment and frustration in being unable to gratify such libidinal aims as unsublimated oral strivings in contemporary relationships. The power of these impulses leads to pressurized and volatile interactions ending in bitterness and perceptions of the self as victimized and abused. The failure to perceive others as separate from the self and separate from one's own needs and impulses may indicate ego boundary disturbance (c.f. Blatt and Wild, 1976; Freeman, Cameron and McGhie, 1958). One's own feelings are experienced as relatively undifferentiated and global, and important distinctions in feeling or appreciation for differences in other are also unnoticed (c.f. Winnicott, 1960). Projection of aggressive impulses onto others leads to paranoid attitudes such as animosity and contempt (c.f. Volkan, 1976).

In previous research this subscale is strongly identified with severe character disorders, especially borderline personality disorder, while non-pathological adults virtually never have high Aln scores. Interestingly, psychotic patients without known premorbid character disorder are relatively unlikely to have an elevation on this subscale. Possibly the alienation characterized by these items is different in quality or kind from schizophrenic isolation.

Insecure Attachment (IA). The common theme of high loading items on this subscale is the painfulness of interpersonal relations. High scorers are likely to be very sensitive to rejection, and easily hurt by others. Relationships may be sought out because of a desperate longing for closeness, but separations, losses and loneliness are not well tolerated. Neurotic concerns about being liked and accepted by others are present. Relationships are psychologically important but worry, guilt, jealousy and anxiety lead to recurrent maladaptive patterns often marked by intense sadomasochistic binds. High scorers frequently seek reassurance of the other's devotion and remain vigilant for any signs of potential abandonment. Traumatic reactions to rejection or loss of love are common.

IA items suggest a level of object relations somewhat higher than that represented by the Aln items. Internalized object representations are more integrated but there may be insufficient object constancy to sustain a sense of connectedness when the other is absent. Although being involved is very important, relationships are entered into as a result of an intensely painful search for security, not from enjoyment of the other as separate and unique. Intimates are experienced as extensions of the self and attempts by the other to achieve a differentiated identity are viewed as threatening. Sadomasochistic interactions may develop to present this threat to security. Mutuality and autonomy cannot be attained in relationships out of fear that it will lead to object loss.

IA reflects attitudes and personality traits most commonly associated with avoidant, dependent, compulsive or passive-aggressive personality disorders (DSM III) and may not be so severe as to cause serious social dysfunction. This is the subscale on which the adult and student respondents were most likely to receive elevated scores, with proportionally more students than adults receiving high scores. Elevations were common among the outpatients with less severe character disorders. Many high scorers on IA may also have an elevation on Aln, reflecting a relationship between interpersonal pain and a severe sense of alienation. Borderline subjects commonly had elevations on both subscales.

Egocentricity (Ego). Items with high loadings on Egc reveal three general attitudes toward relationships: mistrust of others' motivations; others exist only in relation to oneself; and others are to be manipulated for one's own self-centered aims. High scorers take a self-protective and exploitive attitude toward relationships and are likely to be intrusive, coercive, demanding, manipulating, and controlling. There is no real awareness or concern for others' feelings. High scorers believe that cooperation toward mutual goals is impossible because everyone is out for him or herself and anyone will try to humiliate and defeat anyone else if given the chance. The self is viewed as omnipotent and the center of the universe, or as powerless and under the control of some indomitable force.

This egocentric quality of object relations has been described in theoretical literature in relation to the very young child's perception of the mother's absolute control over the child's body functions and states of satisfaction or frustration (c.f. Jacobson, 1964; Klein, 1948; Winnicott, 1960). It is also associated with the magical and omnipotent belief that the child can force mother to appear and that she exists solely in his/her presence (c.f. Maher, 1975; Spitz, 1965). Such narcissism has been described in severe character disorders and also in psychotic disorders (c.f. Guntrip, 1968; Kernberg, 1975; Smith, 1983). It suggests the presence of severe ego boundary disturbance in the very poor differentiation of self from other.

Social Incompetence (SI). The highest loading items on SI indicate shyness, nervousness, and uncertainty about how to interact with members of the opposite sex. The remaining items describe an inability to make friends, social insecurity, absence of close relationships, and unsatisfactory sexual adjustment. SI portrays a self-experience of social incompetence in which the self is separated from human society by an unbridgeable gulf of confusion and fear. Relationships, especially with those of the opposite sex, appear bewildering and unpredictable, and may cause a generalized state of anxiety usually relieved by avoidance and escape from the interpersonal field. Elevations are most frequently found in our psychotic sample, and, in one large sample of college students, elevations were common among male undergraduates.

INSTRUCTIONS FOR HAND SCORING THE BORI

Lay out the BORI answer sheet (Appendix G) to be scored along with a copy of the scoring worksheet (Appendix I). Notice that there is an "F" next to item number 1 on the worksheet, and next to the weight value(s) in the row. Now look at the answer sheet. If item 1 is answered "F", circle every weight value on the score sheet in the row for item 1. (Item 1 has only one weight value, some items have several.) If item 1 is answered "T", skip to item 2. If item 1 is unscorable, write "NS" (not scorable) by the weight value(s) for item 1. For item 2, notice a "T" next to them item on the worksheet. If the questionnaire item is marked "T", circle the weight value(s) for item 2. If on the answer sheet item 2 is marked "F", skip to the next item. If item 2 is unscorable, write "NS" by the weight(s) for item 2. When you have checked every item and circled weights where called for, sum the circled numbers in each column separately; i.e. for each subscale. Write the sum in the space at the bottom of each column on the last page. Also, for each subscale, sum the weights with "NS" written on them, and enter each sum in the "Invalid Sum" space. A value above the invalidity criterion means that more than 20 percent of the scoring opportunities on that subscale are unscorable, and the validity of the subscale score should be questioned.

Whether or not the weights of unscorable items should be omitted from or added to an individual's score is a question we have left for users to answer based on particular applications of score results; i.e. whether a conservative or liberal identification of pathology is desired. Some scorers may find it appropriate to regard unscorable responses as pathological, and add those item weights to the respondent's score. In the analyses presented above, unscorable responses were not scored as pathological, but when the "invalid sum" surpassed the invalidity criterion, the subscale score was excluded from analyses (Bell et.al., 1985, p. 8).

The following table shows the specific cut off scores at or above which the elevation of object relations is considered pathological:

Subscales	Handscore Cutoff Scores
Alienation	16.5
Insecure Attachment	13.5
Egocentricity	5.5
Social Incompetence	5.5

As stated in Chapter III (Measures Section), the Bell Object relations Inventory (BORI) is embedded within the Bell Object Relations and Reality Testing Inventory (BORRTI) which is comprised of 90 items and 7 subscales. However, out of these 90 items only 45 and 4 subscales measure object relations per se. Therefore, only those 45 items were administered and scored for the subjects in this study. Appendix I shows these items which have been circled.

APPENDIX H

BORRTI HAND SCORING WORKSHEET

item number & direction	Item Weights for Each Factor							item number & direction
	Aln	IA	Egc	SI	RD	UP	HD	
1 F	2F							1 F
2					2		1	2
3 T			NO LOADINGS -- OR ITEM					3
4 T			NO LAODINGS -- OR ITEM					4
5 T					1		1	5
6 T		2						6
7 F						3F		7 F
8 T		2						8
9 T			NO LAODINGS -- OR ITEM					9
10 T					2			10
11 T	2							11
12 T							3	12
13 F			NO LOADINGS -- OR ITEM					13 F
14 F	1F	1F						14 F
15 T					2	1		15
16 T		1						16
17 T		1						17
18 T		1						18
19 T					1			19
20 T	1	1						20
21 F							1F	21 F
22 T	1	2						22

	Aln	IA	Egc	SI	RD	UP	HD	
23 F	-----	-----	-----	-----	-----	1F	-----	23 F
24 F	-----	-----	-----	-----	-----	3F	-----	24 F
25 T	3	1	-----	2	-----	-----	-----	25
26 F	3F	-----	-----	-----	-----	-----	-----	26 F
27 T	-----	-----	-----	-----	1	-----	-----	27
28 T	-----	-----	NO LOADINGS -- OR ITEM				-----	28
29 T	-----	-----	NO LOADINGS -- OR ITEM				-----	29
30 T	-----	-----	-----	-----	3	-----	1	30
31 T	-----	-----	NO LOADINGS -- OR ITEM				-----	31
32	-----	-----	1	-----	-----	-----	-----	32
33 T	-----	-----	-----	-----	2	-----	-----	33
34 T	-----	-----	1	-----	-----	-----	-----	34
35 T	-----	-----	-----	-----	-----	1	-----	35
36 T	2	2	1	-----	-----	-----	-----	36
37 F	3F	-----	-----	-----	-----	-----	-----	37 F
38 T	-----	-----	-----	-----	3	-----	1	38
39 T	-----	-----	3	-----	-----	-----	-----	39
40 T	-----	-----	-----	-----	1	-----	1	40
41 T	-----	1	-----	-----	-----	-----	-----	41
42 T	-----	-----	NO LOADINGS -- OR ITEM				-----	42
43 T	-----	-----	-----	-----	-----	1F	-----	43 F
44 T	-----	-----	1	-----	-----	-----	-----	44
45 T	-----	-----	-----	-----	2	1	2	45
46 T	-----	-----	-----	-----	2	1	2	46
47 F	-----	-----	NO LOADINGS -- OR ITEM				-----	47 F
48 T	2	1	-----	-----	-----	-----	-----	48

	Aln	IA	Egc	SI	RD	UP	HD	
49 T	1		2					49
50 T							3	50
51 F						1F		51 F
52 T	1							52
53 T					1			53
54 T	3		3					54
55 T	1F							55 F
56 T			NO LOADINGS -- RT ITEM					56
67 T					3	2		57
58 T			1					58
59 T	1			3				59
60 T					1			60
61 T		2		2				61
62 T	1	2						62
63 T					2			63
64 T			NO LOADINGS -- RT ITEM					64
65 T	2		1					65
66 T		2						66
67 T					3			67
68 F	3F			2F				68
69 T					2			69
70 T	2			3				70
71 T		2						71
72 T							3	72
73 T	3		2					73
74 T					1		3	74

	Aln	IA	Egc	SI	RD	UP	HD	
75 T	----	----	----	----	----	1	----	75
76 T	----	----	3	----	----	----	----	76
77 F	----	----	NO LOADINGS -- RT ITEM				----	77 F
78 F	3F	----	----	----	----	----	----	78 F
79 T	----	----	----	----	1	----	1	79
80 T	1	----	----	3	----	----	----	80
81 T	----	----	NO LOADINGS -- OR ITEM				----	81
82 F	----	----	----	----	----	1F	----	82 F
83 T	----	----	----	----	1	----	----	83
84 T	----	----	----	----	----	2	----	84
85 T	----	----	NO LOADINGS -- RT ITEM				----	85
86 T	----	----	----	----	----	2	----	86
87 T	----	----	----	----	----	----	1	87
88 T	----	----	----	----	----	1	----	88
89 T	----	----	2	----	----	----	----	89
90 T	----	----	----	----	----	1	----	90

Subscale Score	/ \	/ \	/ \	/ \	/ \	/ \	/ \	Subscale Score
	/	/	/	/	/	/	/	

Cut off Point	16.5	13.5	5.5	5.5
---------------	------	------	-----	-----

Invalid Sum/	/ \	/ \	/ \	/ \	/ \	/ \	/ \	Invalid Sum/
	/	/	/	/	/	/	/	

Invalidity Criterion	9.5	4.5	4.5	3.5	6.5	4.5	4.5	Invalidity Criterion
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Note: If a subscale's invalid sum surpasses its invalidity criterion, more than 20% of scoring opportunities are unscorable, and subscale validity is questionable.

APPENDIX I

**OBJECT RELATIONS AND SOCIAL COGNITION SCALES (ORSCS);
MANUAL FOR CODING TAT DATA**

Drew Westen, Ph.D.

**In collaboration with Naomi Lohr, Ph.D.,
Kenneth Silk, M.D., Kevin Kerber, M.D.,
and Sonya Goodrich, Ph.D.**

University of Michigan

**Department of Psychology
580 Union Drive
Ann Arbor, MI 48109-1346**

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SYNOPSIS OF SCALES

Complexity of Representations of People

Principle: scale measures the extent to which the subject clearly differentiates the perspectives of self and others; sees the self and others as having stable, enduring, multidimensional dispositions; and sees the self and others as psychological beings with complex motives and subjective experience.

Level 1: at Level 1 the person does not see others as clearly differentiated or bounded, and/or does not differentiate his own thoughts and feelings from those of others.

Level 2: at Level 2 the person sees people as clearly bounded, separate from self and from each other, but lacks an elaborate sense of people's subjective states, motives, or enduring characteristics. The focus is largely on behaviors and momentary actions. People are seen as primarily unidimensional, existing in situations rather than across situations. Where people are understood as having enduring qualities, these are generally global, evaluative traits like "nice" or "mean."

Level 3: at Level 3 the person makes inferences about subjective states in addition to focusing on behavior. Understanding of other people's psychological processes and subjective experience does not, however, delve far beneath the surface. The person has ideas or "theories" about others' enduring characteristics, but these intuitive theories are either unidimensional, overly general, or lacking in subtlety. There is little sense that people could do things "out of character" or experience psychological conflicts.

Level 4: At Level 4 the person has an appreciation for the complexity or the subjective states of others and has a multifaceted view of personality dispositions. Component parts of personality are not yet understood as aspects of an interacting system, in which enduring dispositions can come into conflict or be brought to bear in different ways in different situations. While the person recognizes the potential for disparities among actions, self-presentations, and internal states, he or she has minimal awareness of disparities between conscious and unconscious mental events.

Level 5: at Level 5 the person sees people in complex ways, making elaborate inferences about their mental states, motivations, points of view, and unconscious processes. People are seen as having conflicting feelings and dispositions, and as expressing different aspects of their personalities in different situations.

Affect-tone of Relationship Paradigms

Principle: scale measures affective quality of representations of people and relationships. It attempts to assess the extent to which the person expects from the world, and particularly from the world of people, profound malevolence or overwhelming pain, or views social interaction as basically benign and enriching.

Level 1: at Level 1 the person views the social world as tremendously threatening and/or experiences life as overwhelmingly capricious and painful. People are seen as abandoning, abusing, or destroying others and oneself with no reason, other than perhaps maliciousness or unconcern. People are often classified as victims and victimizers.

Level 2: at Level 2 the person views the world, and particularly the world of people, as hostile, capricious, empty, or distant, but not overwhelming. The person may feel tremendously alone. People may be experienced as unpleasant or uncaring, but not primarily as threats to one's existence.

Level 3: at Level 3 the person has a range of affectively charged object representations/person schemas and interpersonal expectancies, though these are not primarily positive. People are seen as capable of loving and being loved, of caring and being cared for, but on balance social interaction is evaluated as mildly negative.

Level 4: at Level 4 the person has a range of affectively charged object representations/person schemas and interpersonal expectancies. People are seen as capable of loving and being loved, or caring and being cared for, but on balance social relations are evaluated as neutral or mixed.

Level 5: at Level 5 the person has a range of affectively charged object representations/person schemas and interpersonal expectancies, but on balance relations with others are seen as positive. The person generally expects to like or enjoy other people, to be liked by them, and to be able to count on them with some consistency.

Capacity for Emotional Investment in Relationships
and Moral Standards

Principle: scale measures the extent to which others are treated as ends rather than means, events are regarded in terms other than need-gratification, moral standards are experienced as meaningful and committed.

Level 1: at Level 1 the person is primarily concerned with, and views good and evil in terms of, his or her own gratification (and expects that others do the same). People are seen as existing only in relation to oneself: they are treated as tools for the achievement of one's desires; as mirrors or audience for one's displays; or as impediments to one's gratification. People may be seen as useful or comforting at the moment but are not invested in emotionally for their unique characteristics. Rules and authorities are seen as obstacles unless momentarily useful.

Level 2: at Level 2 the person has a clear sense of potential conflicts between the needs or desires of self and others, though the primary aim remains the satisfaction of one's own wishes. There is a rudimentary sense of right and wrong, characterized by an equation of prudence and morality (i.e., bad actions are bad because they lead to punishment), and the person experiences some remorse following impulsive action. Moral injunctions that exist may be primitive and harsh. Although the person may clearly have attachments, investment in other people (i.e., concern for, and pursuit of the good of significant others) remains clearly secondary to self-interest. Friends are valued but in many respects remain interchangeable; the basis for friendship tends to be shared actively.

Level 3: at Level 3 the person considers the needs and wishes of significant others in making decisions. Pleasing other people, being liked, and behaving in accord with the standards of respected authorities are salient aims which often override self-interest. The person is concerned with being good and experiences guilt when his or her thoughts, feelings, or actions conflict with internalized standards. Rules are respected because they are rules; manners and conventions are seen as important and even natural. Moral rules are relatively rigid and concrete, and there may be a pronounced sense of duty, particularly to certain people. Relationships are valued but may not be very deep.

Level 4: at Level 4 the person is capable of forming deep, committed relationships in which the other is valued for his/her unique qualities. Commitment to others often overrides personal desires, but actions on behalf of another are undertaken without a rigid sense of duty or a predominant desire to be liked for one's good deeds. Moral judgments, values, and modes of conflict-resolution remain relatively conventional. The person is concerned with doing the right thing, as defined by society or respected authorities, which is frequently expressed in more abstract terms and is often self-abnegatory. Relationships are seen as lasting over time and involving considerable commitment and intimacy.

Level 5: at Level 5 the person treats self and others as ends rather than means. The person is interested in the development and happiness of both self and others, and attempts to achieve autonomous selfhood within the context of real involvement with, and investment in others. Conflicts between people with conflicting legitimate interest are understood as requiring compromise. Authorities and rules are not taken to be absolute: the person has a sense of the conventional nature of social rules and believes that at times these must be overridden or changed because they conflict with self-generated or carefully considered standards, or when they do significant harm to people in concrete circumstances.

Understanding of Social Causality

Principle: scale measures the extent to which attributions of the causes of people's actions, thoughts, and feelings are logical, accurate, complex, and psychologically- minded.

Level 1: at Level 1 the person does not understand the concept of causality in the social realm. There is either no sense of necessity to understand why behaviors, feelings, or situations emerge, or explanations that are advanced are grossly illogical.

Level 2: at Level 2 the person has a rudimentary understanding of social causality. Actions are explained as responses to environmental stimuli or as resulting from simple feelings or intentions. Explanations of behaviors, feelings, or interactions frequently have mild logic errors or inconsistencies.

Level 3: at Level 3 the person can logically and accurately explain social phenomena. Although the person recognizes the psychological processes influence action, causality is seen as largely external to the person.

Level 4: at Level 4 the person has a basic understanding of the role of psychological events in motivating action. There is considerable recognition of the importance of people's thoughts and perceptions in mediating between stimulus and response, though understanding of psychological causality is incomplete or applied only irregularly.

Level 5: at Level 5 the person understands feelings and behaviors as caused by psychological processes, which may or may not be elicited by environmental stimuli. Complex thoughts, feelings, and conflicts are seen as mediating action. The person makes complex inferences about the psychological processes of others and attempts to influence others' perceptions.

APPENDIX J

Complexity: Brief Scoring Chart for TAT Responses

	Differentiation and Integration	Feelings and Subjectivity	Traits	Psychological Processes and Conflicts
Level 1	Poor differentiation			
Level 2	Fluidity: split representations	Simple univalent feelings	Global, univalent; affect-driven	Minimal to no recognition
Level 3	Minor fluidity in context of relatively clear characterization	Stereotypic or minor elaborations of mental life; simple emotion with multiple causes; reality vs. appearance of emotions	Minor sense of trait continuity; enduring attitudes; elaborate portrait of character or roles with minimal psycho-logical component	Minor elaboration or inferences
Level 4		Complex subjectivity without elaboration of enduring dispositions; mixed emotions with no sense of enduring attributes	Complex dispositions without elaboration of subjective experience; simple traits with conflicting affective valence	Unelaborated mental conflicts elicited only during inquiry or not central to the story: conflicting intentions
Level 5		Complex subjectivity plus multidimensional or enduring dispositions; ambivalent feelings with some sense of personality	Complex dispositions plus elaboration of subjective experience anomalous behavior in context of complex dispositions; opposite valenced traits, where at least one is not	Very complex motives or elaborated mental conflicts

Social Causality: Brief Scoring Chart for TAT Responses

	Logic and Accuracy	Internality	Complexity	Affects and Mental Status
Level 1	Noncausal, grossly illogical, or highly unlikely attributions; major or multiple minor unexplained transitions			Unexplained affects
Level 2	Minor logic errors; minor unexplained transitions; implied causality	Stimulus-response causality; simple emotional mediation; simple intentions	Complex motives or traits where unclear whether these have causal impact	Simple affects lead to action
Level 3		Minor elaboration of internal causes beyond simple emotions or intentions	Complex behavioral causes; multiple causes produce a single action; spontaneous causal generalization	Complex mental states evoked but do not lead to action
Level 4		Behavior influenced by construal of situations; noncomplex internal causes for more than one character; response to perceived wishes of others	Complex internal causes for one person; complex causal generalization; slightly complex internal causes where only one character is depicted	Complex mental states that do not lead to action, where there is some understanding of their genesis
Level 5		Actions based on introspection unconscious motivation; response to complex perceived wishes; response to perceptions of other characters' thoughts or perceptions	Complex internal causes for one person where only one character is depicted, at least one other character has internal causes, or subject also elaborates a generalized causal statement	Complex mental states that do not lead to action, where there is complex understanding of their generals

Affect-tone: Brief Scoring Chart for TAT Responses

	Quality	Loneliness and Relatedness	Compassion
Level 1	Malevolence, victimization, gross negligence, gratuitous violence		
Level 2	Hostility; unempathic others; aggression in the service of competition; escape from malevolence; defensive positive tone; profound loneliness; partly self generated victimization	Profound Loneliness	Implied compassion; failed ministrations by well-intending others
Level 3	Mixed, mildly negative representations; escape from nonmalevolent danger with help from benevolent others; suspected defensive positive tone	Absence of interaction with consequent neutral tone	Explicit compassion; comfort after loss
Level 4	Mixed, balanced or neutral representations	Characters bland and unelaborated but not aversive	Giving or sharing based on social obligation to relating to each other; minimal interpersonal affect
Level 5	Mixed, primarily positive representations		

Emotional Investment: Brief Scoring Chart for TAT Responses

	Focus on Needs	Guilt and Remorse	Attitude toward Authority and Obligation	Relationship to Convention	Quality of Relationship
Level 1	Need-gratifying orientation; failure to consider conflicting interests; all action directed toward helping one character; self inserted into story	No remorse; worry about apprehension	Disregard of authority reflecting need-gratifying orientation or callous disregard of others	Self-serving disregard of convention; opposition to convention	Readily dismissable friends; schizoid unrelatedness
Level 2	Need-gratifying orientation with recognition of interpersonal impact or conflicting interests; hints of gradiosity; ambiguous whether helping is self-serving; lack of profound self-preoccupation but absence of interpersonal connectedness or conventionality	Abusive punishment without commentary; parental punishment for impulsive acts where parents seem to exist only as punishers; impulsive aggression with remorse; morally ambiguous affect following misdeed; profound masochism; poorly modulated and extreme guilt	Avoidance of disobedience to escape punishment; impulsive control or perseverance without moral ends; arbitrary authority; false accusations suggestive of externalization	Disregard of convention stemming from desire to assert autonomy	Interchangeable relationships, with some sense of attachment or loss; superficial friendships; friendships reflecting mutual self-interest
Level 3	Orientation toward needs of more than one person; helpers motivated by conventional desires and have identities separate from the main character	Guilt; impulsive aggression with remorse in context of committed relationship	Person helped by wise or benevolent elder; acceptance of authority and obligation to internalized standards; moral reidity; sense of duty; internalization of parental values	Acceptance of conventional rules, roles, & morals; helping orientation, ambiguous whether seemingly postconventional values are nature or self-serving or whether the person also has commitments to real others.	Stereotypic investment in relationships or attachments; conventional portrayal of relationships
Level 4	Conflict between people where at least one character expresses concern for the other despite current animosity		Duty to abstract ideals; obedience stemming from concern for others	Commitment to post-conventional values, where there is some suggestion of investment in real people	Committed, affectively elaborated relationships; nature empathy; non-stereotypic enjoyment of another's qualities
Level 5	Creative compromise, suggesting recognition of legitimacy of needs of self and others			Postconventional morality in the context of commitment to concrete others	Pursuit of self-definition of self-development in the context of committed relationships

APPENDIX K

TORONTO ALEXITHYMIA SCALE (TAS)

INSTRUCTIONS: Using the scale provided as a guide, indicate how much you agree or disagree with each of the following statements by placing an X in the appropriate place. Give only one answer for each statement: (1) Strongly Disagree, (2) Moderately Disagree, (3) Neither Disagree nor Agree, (4) Moderately Agree, (5) Strongly Agree.

	Strongly disagree 1	Moderately disagree 2	Neither disagree nor agree 3	Moderately agree 4	Strongly agree 5
1. When I cry I always know why.	_____	_____	_____	_____	_____
2. Daydreaming is a waste of time.	_____	_____	_____	_____	_____
3. I wish I were not so shy.	_____	_____	_____	_____	_____
4. I am often confused about what emotion I am feeling.	_____	_____	_____	_____	_____
5. I often daydream about the future.	_____	_____	_____	_____	_____
6. I seem to make friends as easily as others do.	_____	_____	_____	_____	_____
7. Knowing the answers to problems is more important than knowing the reasons for the answers.	_____	_____	_____	_____	_____
8. It is difficult for me to find the right feelings.	_____	_____	_____	_____	_____
9. I like to let people know where I stand on things.	_____	_____	_____	_____	_____
10. I have physical sensations that even doctors don't understand.	_____	_____	_____	_____	_____
11. It's not enough for me that something gets the job done: I need to know why and how it works.	_____	_____	_____	_____	_____
12. I'm able to describe my feelings easily.	_____	_____	_____	_____	_____
13. I prefer to analyze problems rather than just describe them.	_____	_____	_____	_____	_____
14. When I am upset, I don't know if I am sad, frightened, or angry.	_____	_____	_____	_____	_____
15. I use my imagination a great deal.	_____	_____	_____	_____	_____
16. I spend much time daydreaming whenever I have nothing else to do.	_____	_____	_____	_____	_____
17. I am often puzzled by sensations in my body.	_____	_____	_____	_____	_____
18. I daydream rarely.	_____	_____	_____	_____	_____
19. I prefer to just let things happen rather than to understand why they turned out that way.	_____	_____	_____	_____	_____
20. I have feelings that I can't quite identify.	_____	_____	_____	_____	_____
21. Being in touch with emotions is essential.	_____	_____	_____	_____	_____
22. I find it hard to describe how I feel about people.	_____	_____	_____	_____	_____
23. People tell me to describe my feelings more.	_____	_____	_____	_____	_____
24. One should look for deeper explanations.	_____	_____	_____	_____	_____
25. I don't know what's going on inside me.	_____	_____	_____	_____	_____
26. I often don't know why I am angry.	_____	_____	_____	_____	_____

VITA

Erlete Malveira Ascencao was born in the city of Manaus, Amazonas State, Brazil on April 8, 1954. She is the daughter of Alvaro Azevedo e Ascancao (deceased) and Adelia Malveira Ascencao.

In terms of education, she attended Hermenegildo de Campos Elementary School, Nossa Senhora Aparecida Junior High School (both in Amazonas, Brazil), and Pickens High School (Jasper, Georgia, USA). In college, she received an A.A. degree in Behavioral Sciences from Reinhardt College, Waleska, Georgia, USA in 1978; a B.A. degree in Psychology from Berry College, Mount Berry, Georgia, USA, in 1980; a B.S. degree in Mental Health from Georgia State University, Atlanta, Georgia, USA; a M.A. degree in Sociology (concentration area: Social Psychology) from Emory University, Atlanta, Georgia, USA, in 1982, and a Ph.D. degree in Sociology (concentration area: Social Psychology) from Emory University, Atlanta, Georgia, USA in 1986.

In Brazil, she taught at the University of Amazonas, School of Education, from 1986 to 1989. She returned to the United States in August of 1989 and entered the University of Tennessee (Knoxville) Ph.D. Clinical Psychology Program. From September, 1994 to August, 1995, she is doing her internship in Clinical Psychology in the Cumberland Psychology Internship Consortium in Nashville, Tennessee. Finally, she will receive her Ph.D. degree in Psychology from the University of Tennessee (Knoxville) in 1995.