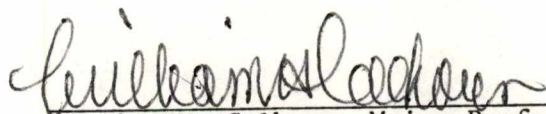


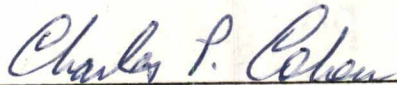
To the Graduate Council:

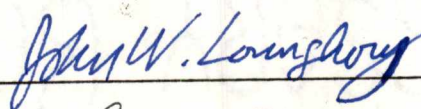
I am submitting herewith a dissertation written by Antoinette L. Anker entitled "An Investigation of Person/Environment Congruence in a Psychiatric Treatment Milieu." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

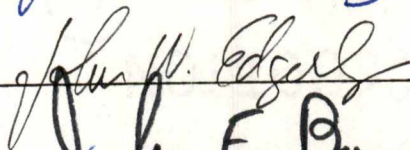


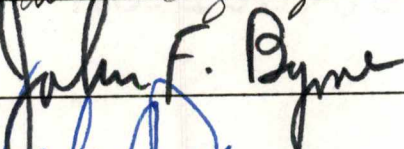
William H. Calhoun, Major Professor

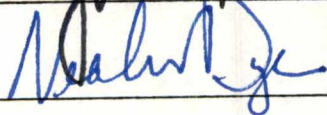
We have read this dissertation
and recommend its acceptance:



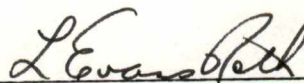








Accepted for the Council:



Vice Chancellor
Graduate Studies and Research

AN INVESTIGATION OF PERSON/ENVIRONMENT CONGRUENTS IN
A PSYCHIATRIC TREATMENT MILIEU

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

Antoinette L. Anker

December 1980

3046908

ACKNOWLEDGMENTS

I wish to express gratitude and appreciation to all members of my doctoral committee for their assistance and availability. Very special thanks are extended to Bill Calhoun, who was an exceptional chairperson; to Neal Dye who has helped me immensely in both personal and professional pursuits; and to Jack Byrne who has been a warm pillar of strength and support throughout the demanding years of graduate school.

I would also like to gratefully acknowledge the helpful encouragement of my family and friends.

ABSTRACT

The interbehavioral field of individuals in an inpatient treatment setting was assessed for purposes of (1) gaining original data about psychological events, i.e., the complexity of interacting organisms and environmental factors; (2) understanding conditions of the field which render it stable (i.e., predictable); and (3) providing information as to how behavioral changes might be facilitated within the context of the total field.

Organismic variables and stimulus variables were derived from 191 subjects in a psychiatric treatment milieu. Using Moos' Ward Atmosphere Scale, three components of perceived atmosphere were identified through factor analysis. These were labeled (1) "Evaluation," (2) "Affective Expression," and (3) "Control." Personality variables (including diagnoses and factor pure MMPI dimensions) were correlated with environmental variables to yield a single, primary interaction effect which may be defined in terms of a formula for interbehavioral fields.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
Statement of the Problem	1
Review of the Literature	1
Statement of the Hypotheses to be Tested	11
II. METHOD	13
Subjects	13
Instruments	13
Diagnosis	15
Ward Atmosphere Scale	15
Procedure	17
III. RESULTS: PATIENTS' PERCEPTIONS OF THE TREATMENT MILIEU AND AN ANALYSIS OF THE BASIC DIMENSIONS UNDERLYING THOSE PERCEPTIONS	19
IV. RESULTS: ANALYSES OF RELATIONSHIP BETWEEN PERSON AND PERCEIVED ENVIRONMENT	33
Demographic Variables $\times$ WAS Variables	33
Personality Variables $\times$ WAS Variables	37
Canonical Correlation: Personality Variables $\times$ WAS Variables	43
V. DISCUSSION	50
REFERENCES	60
APPENDIX	66
VITA	74

LIST OF TABLES

TABLE	PAGE
1. Correlation Matrix: Ward Atmosphere Scale	25
2. Factor Loading Summary: Varimax and Oblique ($\Delta = -1$) Solutions	28
3. Statistical Derivation of Factors	29
4. Varimax Rotated Factor Matrix	31
5. P Values of Chi-squares: Demographic Variables $\times$ WAS . . .	35
6. Chi-square Contingency Tables (Percentages of raw totals in parentheses)	36
7. P Values of Chi-squares: Personality Variables $\times$ WAS . . .	38
8. Canonical Correlation Coefficients	45
9. Canonical Correlation Analysis	46
10. Coefficients for Canonical Variables	48
11. Frequencies of DSM II Diagnosis	67
12. Converting Pts. Ward Mean Raw Scores to Standard Scores . . .	69
13. Compilation of the Sample in Terms of MMPI Factor/Scores . . .	70
14. Factor Loadings	71

LIST OF FIGURES

FIGURE	PAGE
1. WAS Mean Subtest Scores for Total Group (N = 191)	21
2. Somatization × Anger and Aggression	39
3. Somatization × Staff Control	39
4. Low Morale × Order and Organization	39
5. Depression × Anger and Aggression	39
6. Psychotic Distortion × Support	40
7. Psychotic Distortion × Spontaneity	40
8. Psychotic Distortion × Autonomy	40
9. Psychotic Distortion × Practical Orientation	41
10. Psychotic Distortion × Staff Control	41
11. Acting Out × Order Organizatation	41

CHAPTER I

INTRODUCTION

Statement of the Problem

Often in the study of the "causes" of behavior, intrapersonal and sociocultural factors are considered to predominate and environmental factors are overlooked or slighted. This is reflected in the literature as well as in clinical practices. In traditional psychodynamic psychotherapy, relatively little systematic attention has been given to the significant impact of environmental variables upon human behavior or to the necessity of understanding behavior in the total context of its occurrence. Perhaps one problem in assessing the environment's influence on adaptive and maladaptive behavior is that it is the interaction of individuals and environment that is critical, rather than a simple direct effect of the environment. This research was planned to investigate this interaction of person and environment. The aim of the research was: (1) to investigate the underlying structures of an instrument which purports to measure therapeutic environments and (2) to explore the person/environment perceptual relationship and interactional network within a clinical setting, i.e. to assess the psychological ecology of the system.

Review of the Literature

From its conception as a science in the 1800's, psychology has recognized the role of the interaction between the person and the

environment in personality development and behavior (Freud, 1920). Freudians and neo-Freudians theorized about the impact which family, other relations, society and culture had upon an individual's ego development. In spite of this recognition, there has been little systematic attempt to understand, either teleologically or morphologically, what the nature and extent of "other" influences were. The focus of study was on the individual. It was not until the mid 1930's that a firm case for studying these "other" influences, i.e., the environment, was made by Kurt Lewin. He believed that:

Every scientific psychology must take into account whole situations, i.e., the state of both person and environment. This implies that it is necessary to find methods of representing person and environment in common terms as parts of one situation . . . in other words our concepts have to represent the inter-relationship of conditions. (Lewin, 1936, pp. 12-13)

Lewin's proposed formulation was that behavior (B) is a function of the interaction of person (P) and environment (E). It was stated otherwise as $B = f(P,E)$. Lewin was perhaps the first to apply principles of field theory to psychology. The basic tenets of his position were that:

1. Behavior is a function of the field which exists at the time the behavior occurs,
2. Analysis begins with the situation as a whole from which are differentiated the component parts, and
3. The concrete person in a concrete situation can be represented mathematically. (Hall and Lindsey, 1967, p. 207)

Lewin's emphasis was on the psychological factors which determine the manner in which the total context, or field may be conceived. He

attempted to explain the structure of such perceptual systems with elaborate mathematical models, but their complexity prohibited applicability.

It is also interesting to note the attempts by Brunswik (1943) and Kantor (1941) to alert psychologists to the crucial role of the interaction of the person and the environment. Brunswik called for a molar environmental psychology which focuses not so much on the exactitude of experimentally contrived laws (e.g., through microscopic isolation of stimulus-response paradigms) but on the probability of behaviors occurring as a function of both (1) ". . . causal chains within the physical environment, and (2) . . . causal chains within the organism" (1943, pp. 255-256).. In his investigations of perception and cognition, he looked for predictable relationships between complex stimulus and response variables within naturalistic and experimental settings. He was particularly concerned with how environmental factors are transformed into psychological facts, e.g., Lewin's concept of "life space." Similarly, J. R. Kantor proposed that "every psychological event is is taken to be a field containing many factors . . . [including] at least: (a) the action of an organism; (b) the action of an interbehaving object or event, whether organic or nonorganic: (c) a medium of contact, such as air in hearing situations or light in visual interbehavior; (d) an assortment of specific setting factors; and (e) the interbehavioral history of organisms with objects" (Kantor, 1963, p. 366). The following formula provides a statement of his hypothesis of interbehavioral fields:

$$PE = C(k, sf, rf, hi, st, md)$$

where C signifies that the field consists of the entire system of factors in interaction; k the uniqueness of behavior segments of interbehavioral fields; sf the act or function of the stimulus object and rf of the organism; and hi the fact that the present interaction is based upon previously occurring contacts of the organism and objects under specified conditions, for example, conditioning or learning which give rise to the stimulus and response functions. The symbol st calls attention to the setting factors that facilitate or hinder the occurrence of a particular interaction, and, finally, md symbolizes the media which make possible the interactions of organisms, as, for example, light and air which enable organisms to interact with visual or auditory objects. (Kantor, 1969, pp. 377-378).

During the same period (1930's-1940's), Henry A. Murray emerged with a similarly holistic theory of behavior which he called "personology" (Murray, 1938). Murray's focus shifted toward a thorough comprehension of the environment and the degree to which environment exerts forces over behavior. A shortcoming of Lewin's field theory was his concentration on the "life space" without adequate acknowledgment of how psychological factors influence and are influenced by the external, objective world. The importance of these influences was articulated by Tolman who stated the need for psychological theory to provide a "set of principles whereby such and such individual and group life-space configurations will produce such and such behaviors, (and) a set of principles whereby the independent variables of environmental situation and given personality make-up will produce such and such inner and outer life spaces" (Tolman, 1948, pp. 3-4). Murray emphasized the organic nature of personality, choosing to analyze systems of influence upon the organism and the behaviors which result from the interactions of facets within those systems. Murray was perhaps the first in the literature to focus on the environmental context of behavior as a means of

understanding the behavior. He elaborated the concept of environmental determinants of behavior and studied the relationship between personality needs and environmental press.

Murray's definition of the concept of "need" is as follows:

A need is a construct . . . which stands for a force . . . in the brain region, a force which organizes perception, apperception, intellection, conation and action in such a way as to transform in a certain direction an existing, unsatisfying situation. A need is sometimes provoked directly by internal precesses of a certain kind . . . but, more frequently (when is a state of readiness) by the occurrence of one of a few commonly effective press..... Usually [the need] persists and gives rise to a certain course of overt behavior (or fantasy), which . . . changes the initiating circumstance in such a way as to bring about an end situation which stills (appeases or satisfies) the organism. (Murray, 1938, pp. 123-124)

Murray later simplified his definition of need as "a state . . . that is characterized by the tendency to actions of a certain kind" (Murray, 1951, p. 435). Murray's concept of need, then, is analogous to what Brunswik identified as "causal chains within the organism."

Murray's concept of press is the environmental constituent of the need-press relationship; again, it is analogous to Brunswik's "causal chains within the physical environment." Whereas need provides purpose and direction to behavior, press, its counterpart, either facilitates or impedes the act or expression of need. Murray distinguishes between the interpretation or perception of environmental press by the individual (beta press) and environmental properties as they actually exist (alpha press). Person variables, including physical, cognitive, and affective states, determine each individual's perception of press. By understanding the nature of the influence of idiographic variables in combination with

actual environments, the meaning of beta press may be grasped. Beta press and an account of processes which mediate the transformation of individual and environmental facts into psychological facts (perceptually, conceptually, and behaviorally) define $P \times E$ interactional fields.

Stern (1970) has adopted Murray's need-press model and has stated that it is the relationship between needs and press within, between, and among individuals which creates the climate or atmosphere of the $P \times E$ interaction and of institutions in general. Although it may be said that each need-press relationship is isomorphic in that it is within the province of beta press, it may be assumed that similar subgroups of individuals will exhibit similar need-press configurations. In other words, groups in similar settings exhibit similar beta press configurations. Stern's focus was to look at need-press configurations that exist among groups of people. He proposed to measure the nature of the need-press relationship for individuals and within groups along a congruence-dissonance dimension. Congruence was defined "empirically in terms of the actual combinations of needs and press found characterizing . . . spontaneously flourishing groups. . . . For the individual case, a congruent relationship would be one producing a sense of satisfaction of fulfillment for the participant" (Stern, 1970, p. 8). "A dissonant relationship then would be an unstable needs-press combination, which must lead either to a modification of the press in a more congruent direction or to a withdrawal of the participants . . . [individually] discomfort and stress are the concomitants of dissonance" (Stern, 1970, p. 8). In his description of a congruence-dissonance dimension, Stern

makes a case for the relationship between organismic needs and press of the environment, that is, that there exists a major evaluative factor based on the individual's perceptions of the environment.

In his efforts to characterize college environments, Stern (1970) noted that a suitable, systematic taxonomy for describing institutional environments, which would be comparable quantitatively along conceptual dimensions analogous to the taxonomy of personality was severely lacking.

It has been agreed theoretically that the environment is in both a real and practical sense a psychological one (e.g., by Lewin, Brunswik, Kantor, Angyal, Murphy); however, relatively few advances have been made in the direction of outlining parameters of the environment along which measurements may be obtained thus allowing comparisons with person variables.

The taxonomic classification of environmental characteristics appears to have begun with the work of Sells in which he devised a working taxonomy of environmental stimuli (Sells, 1963). At about the same time Barker et al., devised the concept of the behavior setting, which they demonstrated could be categorized, measured, and analyzed (Barker, 1963; Barker, 1968). Barker's premise was that environments have "intentions" for people. His group explored the different demands on both behavior and affect which various settings produced. Behavior settings, or ecological units, were shown to be important determinants of human behavior and experience. In order to be a useful concept, however, many behavior settings would have to be analyzed and a systematic typology of settings proposed.

Other researchers have investigated the structural characteristics of organizations and their influence on the behavior and attitudes of persons within the organization. Such organizational characteristics as size, shape, number of administrative levels, etc., were shown to be related to attitudinal or behavioral variables (Porter and Lawler, 1965). Duhl (1963) has investigated the effects of crowding in urban ghettos. Qualitative dimensions of colleges and universities (e.g., size, per-student expenditure, faculty-student ratio, number of books in the library) have been related to undergraduate achievement (Astin, 1968).

That average behavioral characteristics of milieu inhabitants also define environmental determinants of behavior has been suggested by Linton (1945) and Sells (1963). Descriptions of college environments and work environments may be derived from descriptions of its students (Astin, 1968) or employees (Holland, 1966). Such studies have demonstrated the possibility of using a common taxonomy for person and environment.

Together, these naturalistic studies of environment suggest two basic dimensions along which different environments might be compared: (1) organizational structure characteristics and (2) psychosocial characteristics. The first of these, organizational structure characteristics, is relatively easy to define in terms of numbers and the physical properties of the environment. The second dimension, psychosocial characteristics, is more difficult to define and has ushered in the development of numerous perceived climate scales during the last decade. These have been attempts to find, measure, and otherwise understand norms and evaluations of specific environments.

Since 1968 Rudolf Moos has studied the social environments of treatment settings extensively, and, together with various associates, has developed perceived climate scales for nine different institutional environments (Moos, 1973). His rationale for studying perceptions of treatment milieus was that, as such, there were no scales which assured inclusion of both subjective perceptions and objective ecological dimensions of treatment milieus. It was his contention that the milieu was of critical importance both theoretically in the study of person-environment interactions and pragmatically in clinical settings where it was believed to have a major effect on therapeutic process and outcome. Moos postulated three basic types of environmental dimensions:

1. Relationship dimensions such as involvement, support, and expressiveness;
2. Personal development dimensions such as autonomy, practical orientation, and personal problem orientation; and
3. System maintenance and system change dimensions such as order and organization, program clarity, and staff control.

Two important assumptions have emerged thus far from this brief survey of the literature in the area of person-environment interactions. That is, it is necessary (1) to discriminate among the basic components of environmental press (c. f. Murray) as they are perceived by inhabitants of the environment; and (2) to explore the nature and extent of the person variables which influence those perceptions.

Environment has been shown to account for a large percent of behavioral variance. In a study of honesty in 1928, Hartshorne and May demonstrated that consistency of behavior was directly proportional to the similarity of the settings and had little or nothing to do with

anything like a unified personality trait of honesty. Similarly, in a study of anxiety and hostility 30% of the total variance was accounted for by setting (Endler and Hunt, 1968). More directly related to the focus of the present study is the notion that treatment setting (e.g., hospitals) may influence or cause the development of symptoms (Stanton and Schwartz, 1954). Moos presented evidence that "[treatment] settings are differentially beneficial to different groups of patients" (Moos, 1974, p. 15). Characteristics of treatment environment have also been shown to be related to treatment effectiveness (low return rates) and/or treatment efficiency (high turnover) (Moos and Schwartz, 1972; Ellsworth and Maroney, 1972). It would appear advantageous, therefore, to comprehend as much as possible about the environment or milieu and to enhance or modify those aspects which are congruent or dissonant respectively with the stated objectives of the institution. Such an understanding would necessarily incorporate an exploration of the environment, inhabitant's perceptions of the environment, and personality factors which may influence those perceptions.

The purpose of the present study was to investigate the ecology of a 40 bed inpatient unit at a community mental health center as perceived by the patients and to determine what the characteristic relationships were between who the patient was (i.e., personality variables) and how they perceived the environment. The psychiatric treatment milieu was assessed with respect to whether it "invited" involvement and encouraged a supportive, expressive atmosphere for the patients' the nature of personal development and the extent to which it was enhanced by the

treatment program and treatment goals; and the manner in which the system (the organization) maintained or altered emphases of the milieu. Overall, the question of whether an interbehavioral field within that setting could be systematically described and defined was addressed.

Statement of the Hypotheses to be Tested

The above stated problem may be addressed in the form of specific hypotheses regarding the measurement of psychiatric treatment environments and the nature of the interaction between characteristics of personality and perceived characteristics of the environment. The classification of these variables are presented in Chapter II. The hypotheses are as follows:

Hypothesis 1. In any environment there are specific dimensions which may be defined, understood, and used to a practical advantage for the purposes of that setting.

Hypothesis 2. Person/environment congruence may be predicted with knowledge of how environments are differentially perceived by persons who fall within the domain of a particular personality dimension.

The practical utility of vigorous delineation of the attributes affecting person/environment congruence cannot be overstated, especially in a therapeutic setting. It would be possible to comprehend behavior more fully if ambiguous influences from the environment could be defined and, at least to some extent, controlled. Such knowledge would aid in

implementing changes in environments which would effect and direct change in behavior in a predictable, measureable manner.

It is important then to discern the unique features of the atmosphere in any single setting and to assess reciprocal influences between persons and environments. In other words, what characterizes the interbehavioral field?

In this study, one setting and its inhabitants were studied extensively and intensively for the purpose of defining interactions and making probabalistic statements about congruence of individuals and environment.

CHAPTER II

METHOD

Subjects

A group of 191 patients from the inpatient ward of the Oak Ridge Regional Mental Health Center served as subjects in this study. About half of the sample were married (48.2%), 18.8% were divorced, 15.7% were single, 10.5% were separated, and 6.8% were widowed. High school level of education was predominant (56.1%); 22.8% attended school for 8 grades or less; 19.6% had at least some college experience; and 1.6% had post-graduate education. Selection of subjects was restricted only by an individual's inability to read or to comprehend the instructions of the instruments. Diagnostic categories (DSM II) represented by the sample included Neuroses = 56 (Depressive neurosis = 47); Schizophrenia = 54; Other psychoses = 28; Alcoholism and Drug Dependence = 20; Personality Disorders = 13; Other Nonpsychotic = 15. (A frequency table of diagnostic categories may be found in the appendix.) It would appear that this is a representative sample of general adult inpatient treatment facilities.

Instruments

Minnesota Multiphasic Personality Inventory. The Minnesota Multiphasic Personality Inventory (MMPI) is a 566 item true-false questionnaire which was originally developed by Starke Hathaway and J. C. McKinley to aid in the differential diagnosis of "abnormal" personalities. It is based upon a method of empirical construction which

purports to measure similarities between responses of the individual being examined with responses collected from several criterion groups, e.g., schizophrenics, hypochondriacs. The instrument is composed of four control keys (? = "cannot say," L = lie, F = false, K = defensiveness) and ten clinical scales (Hs = hypochondriasis, D = hysteria, Pd = psychopathic deviate, Mf = masculinity-femininity, Pa = paranoia, Pt = psychasthenia, Sc = schizophrenia, Ma = hypomania, Si = social introversion). Elevated scale scores (T score > 70) have been overwhelmingly demonstrated to be indicative of behaviorally observable psychopathology.

A plethora of literature exists which examines the test itself (e.g., validity and reliability studies) and its multiple applications in both clinical and nonclinical settings. The MMPI has become a widely used "all purpose" screening device for psychiatric populations and also a valuable research tool in studies of personality and psychotherapy. Norms are available for a variety of subpopulations; for example, there are baserates for different age groups, races, cultures, etc.

Because of their psychometric properties (i.e., being highly intercorrelated) the clinical scales of the MMPI present obvious limitations to the use of single labels to categorize organismic variables. Therefore, it is useful to describe personality dimensions along several basic, underlying structures of the MMPI.

Numerous factor analyses of the MMPI have been executed (e.g., Tryon, 1966, 1967a, 1967b; Lorr, 1968; and Barker, Fowler, and Peterson, 1971). Overall and Gomez-Mont (1974) later documented that "most of the reliable variance in the conventional Minnesota Multiphasic Personality Inventory

(MMPI) clinical scales is adequately represented in only the first 168 items of the standard Form R (p. 284)." Overall, Hunter, and Butcher determined that a factor analysis of these items, then, should yield a factor structure similar to that found for the entire instrument. They were successful in their comparison with total test factor analyses and subsequently developed five factor pure measures from the first 168 items of the MMPI. The derived clinical factors which were used to describe personality characteristics in this study are: Somatization, Low Morale, Depression, Psychotic Distortion, and Acting Out.

Diagnosis

Diagnoses presumably result from careful assessment of a person's behavior according to a number of criteria. Thus, Diagnoses provide a significant set of data with regard to individual differences.

Ward Atmosphere Scale

The Ward Atmosphere Scale (WAS) was developed by Rudolf Moos in 1968 to assess the perceived atmosphere of psychiatric treatment settings. The theoretical underpinnings of the 100 item, ten subscale, true-false inventory were that:

1. environment provides form and direction to behavior, therefore it is important to know how the environment is perceived;
2. comparisons of staff versus patients views would aid in the understanding of the ward climate; and
3. in order to measure person-environment congruence, commensurate dimensions must be found. (Moos, 1974, p. 36)

Items were selected based upon "press appropriateness" in a psychiatric setting.. Press categories were suggested by Murray and Stern; items which identified press toward Involvement, Support, Spontaneity, Autonomy, Practical Orientation, Personal Problem Orientation, Anger and Aggression, Order and Organization, Program Clarity, and Staff Control were adopted by Moos (1974). Extracted from these ten subscales are three overall dimensions which Moos believed accounted for most of an environment's influence upon behavior: Relationship (Involvement, Support, Spontaneity), Treatment Program (Autonomy, Practical Orientation, Personal Problem Orientation, Anger and Aggression), and Administrative Structure (Order and Organization, Program Clarity, Staff Control). Subscale definitions are found in the Appendix.

A factor analysis was conducted by Moos that revealed eight interpretable factors (Moos, 1974). Thus, eight of the ten created subscales emerged. All ten of the subscales were retained, however, for the sake of comprehensiveness and clarity. Other factor analyses have been performed on the WAS (Wilkinson, 1973; Alden, 1978) with results that are inconsistent with Moos' finding. Wilkinson suggested that environmental measures might be represented by a single global underlying dimension. Alden supported Wilkinson's findings in her recent study of hospital wards. She discovered a global dimension underlying perceived measures on eight subscales, but also found two specific factors which reflected only one subscale each. The exact nature of the dimensions which are purported to underlie Moos' scale of perceived treatment environments remain uncertain. Such uncertainty warrants further

investigation into what type of information the WAS conveys and how it might be of some use in treatment settings.

Procedure

Data Collection. Seventy males and one hundred twenty-one females whose ages averaged 39 years ($SD=13.7$, Range=14-73) were administered Minnesota Multiphasic Personality Inventories (MMPI) upon admission to the ward. Just prior to discharge the Ward Atmosphere Scale (WAS) was completed by each subject.

Data Analysis. All tests were hand scored. A second scoring of the MMPI was done to provide five factor scores.

Means, medians, standard deviations, variance and ranges were computed for age, education, and subtest variables. Cross tabulations were made with demographic variables as independent variables and raw WAS subscale scores as dependent variables. Additional crosstabs were made with the MMPI factor scales divided into categories of high, medium, and low according to the semi-interquartile ranges. These were examined as independent variables. WAS subscales dichotomized into high and low based upon the median split were examined as dependent variables. Relationships were tested by chi-square.

Principle component factor analyses were carried out on the WAS using (1) an orthogonal rotation with a varimax solution, and (2) oblique rotations with delta set at -1, -.5, 0, and .5. Finally, a canonical correlation analysis was performed to assess the relationship between the group of WAS subscale scores and the group of MMPI factor scores.

Programs for all statistical procedures were taken from the Statistical Package for the Social Sciences, second ed., by Nie, Hull, Jenkins, Steinbrenner, and Bent (1975).

CHAPTER III

RESULTS: PATIENTS' PERCEPTIONS OF THE TREATMENT MILIEU AND AN ANALYSIS OF THE BASIC DIMENSIONS UNDERLYING THOSE PERCEPTIONS

To restate the intention of this study, it was deemed crucial to explore the two major components of the phenomenal field and their interaction in order to investigate the need-press model of behavior. Those components were: (1) The intrapersonal system, and (2) the environmental system. Chapter III focuses upon the results of an investigation of the environmental system. The questions posed in the research were: (1) How did the patients perceive the environment of the ward? and (2) What were the basic dimensions underlying and defining what they (the patients) perceived about the ward?

It is conceivable that how a ward is perceived by the patients inhabiting it will basically be a function of how the staff typically interact with the patients. Moos contended that this assumption was true and devised a ten scale measure to define such interactions, and, as a consequence, to define the perceived atmosphere of the ward. Remembering the discussion of Stern in Chapter I of this text, it was stated that "climate" or "atmosphere" of any place or situation was created by the particular need-press configurations within, between, and among individuals in that setting. The notion that patient/staff interactions would define the treatment milieu (i.e., the atmosphere of the ward) is supported by Stern's paradigm of "climate." Moos postulated that the physical properties of an environment (e.g.,

architectural) and the social components are understood as a single entity by an individual. Therefore, physical and social environments are studied as a unitary influence, or press (alpha) upon individuals. In this case, the physical setting was a psychiatric inpatient ward: the interpersonal component was made up primarily of staff (psychiatrists, psychologists, nursing staff, technicians . . .) and other patients. Atmosphere was assessed by asking patients to respond to 100 questions about the staff, the patients, and the ward in general. (The WAS questionnaire is filed in the Appendix.) Patients' perceptions of the treatment milieu were represented by scores on ten subscales which comprise the Ward Atmosphere Scale (WAS).

Figure 1 is a profile of the mean ($\bar{X}$) WAS subtest scores for the total sample ($n = 191$). (A table for converting ward mean raw scores to standard scores is included in the Appendix.) The profile serves as a graphic depiction of beta press, that is, the patients' perception of the treatment milieu. An examination of elevations and depressions in Figure 1 conveys a useful description of the ward. Peaks on the Involvement, Support, Practical Orientation, Personal Problem Orientation, and Order and Organization subscales imply that the milieu was perceived as being carefully regulated, ordered and well planned. The "efficiency" of the ward functioning did not appear to impinge upon a mutually supportive environment and one which patients actively engage in. The treatment emphasis was viewed as both practical and personal. In other words, patients felt as if they were being prepared for discharge, but also, that there was recognition of and encouragement toward a fuller

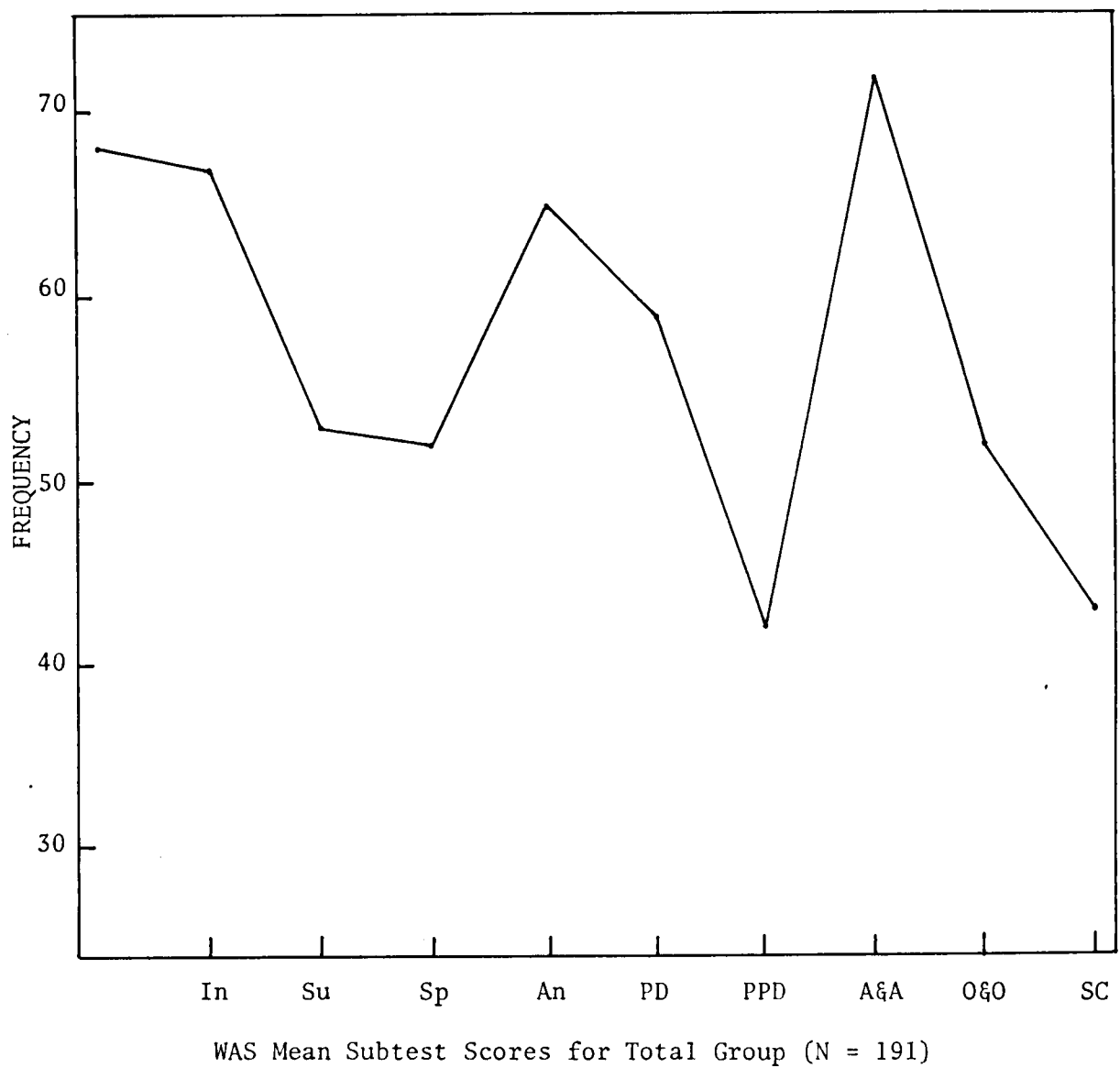


Figure 1

understanding of self. Aspects of the ward which were not perceived as being particularly strong were Spontaneity, Autonomy, Anger and Aggression, Program Clarity, and Staff Control (Figure 1). Relatively low scores on these subscales may be inferred to indicate that the ward is highly structured and that there is little press toward being expressive and independent of the group. Depressed scores on Program Clarity and Staff Control again reflect the impression that patients "trust" the structure, that is, they assume a dependent stance. There is little emphasis on knowing what to expect from day to day nor is there a perceived need for staff to be restrictive in relation to the patients.

Information from Figure 1 provides a relatively detailed description of the ward atmosphere. The question which now arises is whether what the patients were perceiving about the treatment milieu could be reduced from ten features (the WAS subscales) to a few basic dimensions. If so, what are the prominent structures underlying this scale (Moos') which purports to measure treatment environment? The second question now being addressed is, how can the optimally definitive underlying pattern of relationships which exist among the WAS subscales be determined? A factor analysis was conducted in an effort to provide an answer to question #2.

A few of the basic assumptions underlying the use of factor analysis are that (1) "a limited number of fundamental variables" may be extracted from the ten subscales of the WAS; (2) the extracted components (factors) will be made up, in varying concentrations, of the original ten variables; (3) by adding together the variance accounted for by each factor, it is

possible to describe how much of the original ten variables are reflected by the extracted factors; and (4) factors are defined as being linear combinations of features measured by the ten WAS subscales (Adapted from Henrysson, 1957).

In this aspect of the total study, the purpose of carrying out a factor analysis was two-fold. First, it served an exploratory function in terms of ferreting out the basic structures of the scale. The derived factors would describe, in a few, simple, essential variables much of the same information about the milieu as did the ten subscale variables. Second, the analysis served a confirmatory function. It was used to test hypotheses about suitable models to describe the WAS as proposed by other researchers (Moos, 1974; Alden, 1978; and Wilkinson, 1973).

The WAS was factor analyzed in order to test hypotheses about the existence of certain constructs. The explication of these constructs would aid in the theoretical understanding of perceived treatment environments as well as adding construct validation to the measurement of milieu.

Measures were developed by Moos which intended to capture specific attributes of perceived atmosphere on psychiatric wards. Ten measures were suggested on the basis of rational choice alone. These were: Involvement, Support, Spontaneity, Autonomy, Practical Orientation, Personal Problem Orientation, Anger and Aggression, Order and Organization, Program Clarity, and Staff Control. The subscales were hypothetical components of three larger environmental dimensions: (1) Relationship, (2) Treatment Program, and (3) Administrative Structure of System

Maintenance (Moos, 1974). To assess the extent to which the rationally derived subscales reflected the intended theoretical constructs of perceived atmosphere, Moos did a factor analysis from which eight interpretable factors emerged. Several other factor analyses which have been carried out since then, however, suggest findings which are not consistent with Moos'. Using a different factorial method, Wilkinson (1973) and Alden (1978) proposed that each of the ten WAS subscales did not provide unique information about the environmental unit. Rather, it was suggested by the latter two investigators that a single global dimension underlies the measure of environments (eight of the ten subscales were reflected as loading significantly on that dimension). The global component was believed to represent subjective evaluations of the unit. Two other subtests (Anger and Aggression and Staff Control) revealed two components which were highly specific to each subscale.

The inconsistencies of these studies are illustrative of the relative lack of knowledge about and understanding of how treatment environments are being perceived, what is being perceived and whether the instrument(s) used to measure milieus are accurate reflections of the same. For the purposes of addressing the milieu in the present study, the Ward Atmosphere Scale was chosen. Since the focus of the study is on person/environment congruence, it was felt that the constructs with which it would deal must be clearly explicated. Factor analysis was useful in the delineation and explication of environmental influence.

Scores from the ten measures provided by Moos were intercorrelated. The matrix for the ten WAS subscales is displayed in Table 1.

TABLE 1

CORRELATION MATRIX: WARD ATMOSPHERE SCALE

[illegible]

The intercorrelations were factor analyzed using a principle components analysis. The factors may be extracted as being uncorrelated (orthogonal) to each other ($r=0$), or the information about correlations between factors may be sought (oblique solutions). Principal-components analyses were rotated to both varimax (orthogonal) and oblique ($\delta = -1.0, -.5, 0, \text{ and } .5$) criteria of simple structure. "Simple structure" refers to Thurstone's (1947) concept of having pure variables for each factor; that is having each variable load on only one factor with other loadings in the row equal to zero. Reality, however, deviates from ideality in most cases, therefore, simple structures were accepted as being relatively pure variables (high loadings on a certain factor even though other loadings in the row may not equal zero). In the varimax rotation, the value of the diagonal elements was set at 1.0 (unity).

Scree Tests (Cattell, 1966) performed on the eigenvalues of factors for each rotation indicated a tri-factor solution to be most appropriate. Except for some variations in the direction of the third factor, both rotations yielded very similar results. (A table displaying the factor/variable correlations, or factor loadings, for each of the three factors by all rotation variations is filed in the Appendix.) Coefficients of .30 and greater were interpreted as significant. The structures (loadings) were, for all practical purposes, identical for the first two factors. Factor III was identified most clearly by two subscales (Spontaneity and Staff Control) which emerged as prominent in all analyses; however, the directions (positive vs. negative loadings) were reversed by the two types of rotation. In addition to strong

loadings on the two subscales signified by both methods of analyses, the varimax rotation suggested the influence of three other subscales (Autonomy, Personal Problem Orientation, and Support). The interpretation of factor loadings is the same as for any correlation coefficient.

In order to determine the rotational method which most adequately satisfies the theoretical quest of the study, i.e., to derive basic constructs underlying perceived treatment milieu, several comparisons were made between the solutions. Factors are linear combinations of variables within a data matrix. The two rotations resulted in almost identical combinations and loadings which were practically equal.

It is possible to estimate "fit" of a rotation by examining the loadings of the variables for each factor. The assumption is that the higher the loadings (higher than the other two loadings in the row; therefore equal to or greater than .34) the more "purely" a factor is defined by that variable. It would stand to reason, then, that the greater frequency of higher loadings would help to reveal the best rotation. Table 2 depicts this type of frequency breakdown of the factor loadings. The varimax appeared to be the preferred solution. There were more higher loadings for all three factors in the varimax rotation. At this point, the discussion of results will pivot toward the varimax analysis of factors.

Eigenvalues, which are measures of the relative importance of each factor were greater than 1.0 for three factors. Eigenvalues represent the total variance accounted for by each component. Table 3 lists the eigenvalue for each factor derived from the varimax solution. In

TABLE 2

FACTOR LOADING SUMMARY: VARIMAX AND OBLIQUE ($\Delta = -1$) SOLUTIONS

Loading	I		Factor II		III	
	V	O	V	O	V	O
.00-.19	1	2	4	5	5	5
.20-.29	3	2	3	2	0	2
.30-.39	1	0	0	1	2	0
.40-.49	0	1	1	0	1	0
.50-.59	0	0	0	1	0	1
.60-.69	1	4	1	0	1	1
.70-.79	4	1	0	1	0	0
.80-.89	0	0	1	0	1	0
.90-.99	0	0	0	0	0	0

TABLE 3
STATISTICAL DERIVATION OF FACTORS

Factor	Eigenvalue	% of Variance	Cum % of Variance
1	3.09426	30.9	30.9
2	1.69880	17.0	47.9
3	1.22229	12.2	60.2
4	.83283	8.3	68.5
5	.67922	6.8	75.3
6	.66456	6.6	81.9
7	.57306	5.7	87.7
8	.47012	4.7	92.4
9	.42556	4.2	96.6
10	.34150	3.4	100.0

principal component analysis, the first factor is always the best summary of linearity among variables. The second and successive components, always orthogonal to those preceding it, are "next best" linear combinations of variables. Minimum eigenvalue criteria of significance were specified at greater than or equal to 1.0. Since there are usually as many components derived as there are variables to be analyzed (assuming that factors are orthogonal, it is, by definition, unlikely that any two factors would account for the exact same variance), the percent of total variance accounted for by a single component would be equal to $\text{eigenvalue}/n \times 100$. For example, component I has an eigenvalue of 3.09426, which, when divided by $n = 10$ and multiplied by 100, equals 30.9426% of the variance.

Factor I accounted for 30.9% of the variance in the dependent variable (WAS subscales); factor II = 17.0%; and factor III = 12.2% for a total of 60.2% of the variance accounted for by the three components. Table 4 displays the varimax rotated factor matrix for the WAS data. The starred (*) loadings are those which identified each factor most clearly. An investigation of the pattern of subscale loadings identified theoretical labels for each factor. High positive ($>.4$) loadings resulted in five out of the ten subscales (Involvement, Support, Practical Orientation, Program Clarity, and Order and Organization) for the first factor which is believed to reflect a strong dimension of "Evaluation." Factor II which loaded highly in the positive direction on subscales 6 and 7 (Personal Problem Orientation, and Anger and Aggression), and negatively on subscale 8 (Order and Organization)

TABLE 4
VARIMAX ROTATED FACTOR MATRIX

	Factor:	I	II	III
	Name:	Evaluation	Affective Expression	Control
1. Involvement		*.75379	.17408	-.07740
2. Support		*.73179	-.17248	.30408
3. Spontaneity		.34081	.18713	*.64845
4. Autonomy		.23050	.20971	*.47915
5. Practical Orientation		*.71964	.11814	.18311
6. Personal Prob. Orientation		.18036	*.67046	.33473
7. Anger and Aggression		-.24146	*.82329	-.05654
8. Order and Organization		*.62716	*-.47717	.11926
9. Program Clarity		*.70322	-.21467	.02388
10. Staff Control		.25654	.20754	*-.81895

implied an "Affective expression" dimension. Finally, factor III appeared to represent a dimension of "Control" with high positive loadings on the Spontaneity and Autonomy subscales and high negative loadings on the Staff Control subscale.

These three factors are interpreted as aspects of the total environment which were perceived as having the most pervasive influence on the patients. The patients' perceptions of the ward, as illustrated by three components, provided useful information (compared to scores on ten subscales) about what the atmosphere of the ward was (or was perceived to be) and whether or not, as such, it was conducive to treatment goals. The patients' perceptions revealed their evaluations of external characteristics of the milieu, the involvement of intra-personal perceptual input, and a structural assessment of the behavioral setting. These three general categories of information suggested "what" about the ward was having an impact upon the patients. In Chapter IV the "how" of the influences will be addressed.

CHAPTER IV

RESULTS: ANALYSES OF RELATIONSHIP BETWEEN PERSON AND PERCEIVED ENVIRONMENT

Demographic Variables $\times$ WAS Variables

Crosstabulations were made for all demographic variables (age, sex, marital status, education) and DSM II diagnosis by each of the ten WAS subscales. Chi-square tests of statistical significance were done to determine whether systematic relationships existed between variables. The levels of significance are reported in p-values. These values suggest the degree of confidence with which the null hypothesis of no correlation between variables may be rejected. As a measure of association, symmetric lambda was also reported. Coefficient lambda, developed by Goodman and Kruskal, is a proportion which designates forecasting efficiency. Lambda values range from 0.0 to 1.0 (minimum to maximum) and measure the degree of improvement in the ability to predict the occurrence of one variable given the occurrence of another variable (no assumptions about which is dependent/independent). Lambda was used as a descriptive statistic to indicate the strength of chi-square relationships. High versus low scores on the WAS were determined by the median for each subject.

A summary of relationships follows. It should be noted that in large samples, such as this one, even weak relationships may be statistically significant. The actual importance of these findings

will be discussed in Chapter V. The p values for all chi-squares are listed in Table 5.

Age. Three statistically significant relationships were found between Age and the WAS. These included Age $\times$ Support ($p = .01$, $L = .205$); Age $\times$ Spontaneity ($p = .01$, $L = .19$); and Age $\times$ Program Clarity ($p = .03$, $L = .17$). As can be seen in Table 6, the nature of the interactions is difficult to specify.

Sex. Sex $\times$ Autonomy produced a p value of .0254 with $L = .06422$. The data generally suggests that men are more likely to score low on perceived autonomy than women.

	% Low	% High
Men	67%	33%
Women	52%	48%

Marital Status. No statistically significant relationships were found between marital status and WAS subscales.

Education. Education was shown to be significantly related to Involvement ($p = .0595$, $L = .03947$); Support ($p = .0463$, $L = .03404$); Order and Organization ($p = .0001$, $L = .3419$); and Staff Control ($p = .0093$, $L = .04564$).

There are trends suggesting that (1) as educational level increases, scores on perceived Involvement decrease; (2) patients who have only achieved grammar school level tended to score much lower on perceived

TABLE 5
P VALUES OF CHI-SQUARES: DEMOGRAPHIC VARIABLES $\times$ WAS

	In	Su	Sp	Au	P.O.	P.P.O	A&A	A&O	P.C.	S.C.
Age	.42	.01	.01	.39	.85	.31	.91	.79	.03	.22
Sex	.41	.92	.31	.03	.50	.39	.51	.44	.39	.33
Marital Status	.88	.16	.53	.10	.89	.62	.89	.76	.28	.097
Education	.06	.05	.25	.97	.36	.26	.20	.00	.99	.01
DSM II	.00	.04	.00	.78	.46	.90	.51	.19	.86	.62

TABLE 6
CHI-SQUARE CONTINGENCY TABLES
(PERCENTAGES OF RAW TOTALS IN PARENTHESES)

Age	Support			Age	Spontaneity			Age	Program Clarity		
	Low	High	Total		Low	High	Total		Low	High	Total
10-19	7 (58)	5 (42)	12	10-19	7 (58)	5 (42)	12	10-19	6 (50)	6 (50)	12
20-29	32 (67)	16 (33)	48	20-29	26 (54)	22 (46)	48	20-29	29 (60)	19 (40)	48
30-39	30 (59)	21 (41)	51	30-39	23 (45)	28 (55)	51	30-39	28 (55)	23 (45)	51
40-49	25 (69)	11 (31)	36	40-49	20 (56)	16 (44)	36	40-49	21 (58)	15 (42)	36
50-59	15 (58)	11 (42)	26	50-59	14 (54)	12 (46)	26	50-59	13 (50)	13 (50)	26
60-69	7 (47)	8 (53)	15	60-69	11 (61)	7 (39)	18	60-69	10 (67)	5 (33)	15
70-79	2 (67)	1 (33)	3	70-79	101 (53)	90 (47)	191	70-79	3	0	3
	118 (62)	73 (38)	191						110 (56)	81 (42)	191

Support; (3) college level patients were more likely to score lower on perceived Order and Organization than were grammar or high school level patients; and (4) scores on perceived Staff Control decrease as educational level increases.

DSM II Diagnosis. Significant relationships were found between DSM II diagnosis and all three subscales of the Relationship dimension of the WAS (Involvement $p = .0015$, $L = .12766$; Support $p = .437$, $L = .14138$; and Spontaneity $p = .0000$, $L = .14041$). No other relationships proved to be statistically significant. The diagnosis of psychosis is related to low scores on perceived Involvement. Neurosis and personality disorder are related to low scores on perceived Support. (The nature of the relationship between DSM II diagnosis and Spontaneity is obscured by the large chi-square table: Patterns were not obvious following collapsing of cells.)

Personality Variables $\times$ WAS Variables

MMPI's were scored on five factor dimensions (Overall):

(1) Somatization, (2) Low Morale, (3) Depression, (4) Psychotic Distortion, and (5) Acting Out.

Personality variables derived from factor scored MMPI's were related to WAS subscales using the chi-square test of statistical significance. A record of the p values for all tests are given in Table 7. Graphs for significant relationships are given in Figures 2 through 11. The trichotomization of MMPI variables into high, medium and low was based on the semi-interquartile range for each factor: The

TABLE 7
P VALUES OF CHI-SQUARES: PERSONALITY VARIABLES × WAS

	In	Su	Sp	Au	P.O.	P.P.O	A&A	O&O	P.C.	S.C.
Somatization	.28	.78	.60	.97	.16	.69	.01	.49	.32	.01
Low Morale	.52	.41	.18	.94	.37	.61	.28	.03	.08	.75
Depression	.44	.77	.85	.67	.43	.97	.00	.20	.21	.54
Psychotic Distortion	.88	.00	.00	.03	.00	.51	.95	.29	.34	.00
Acting Out	.75	.41	.59	.98	.38	.64	.07	.04	.82	.41

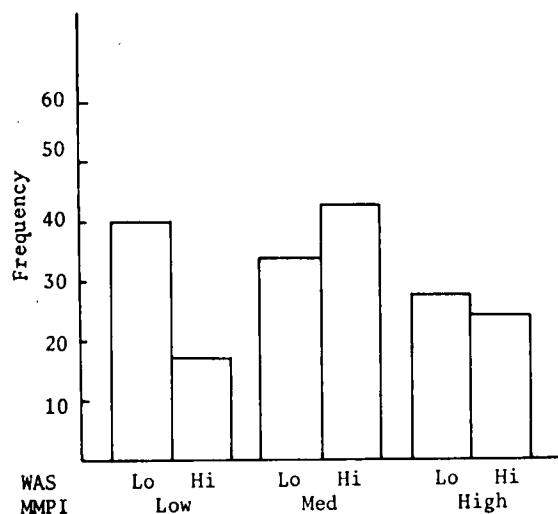


Figure 2

Somatization × Anger and Aggression

Chi square = 8.98253 Significance = .0112
 Contingency Coefficient = .21464
 Lambda = .07772
 Gamma = .21515

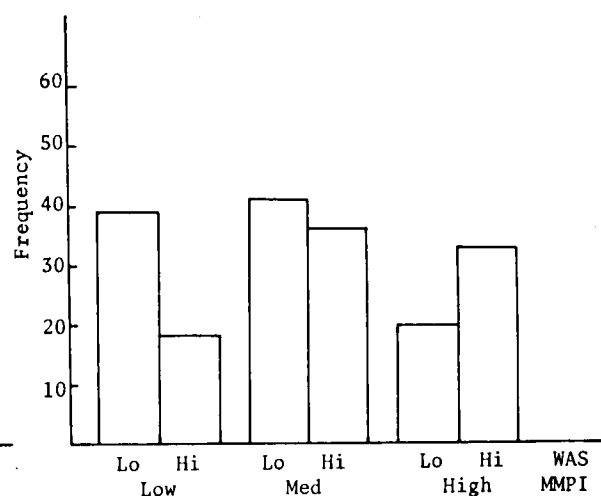


Figure 3

Somatization × Staff Control

Chi square = 9.83269 Significance = .0073
 Contingency Coefficient = .22408
 Lambda = .06154
 Gamma = .37115

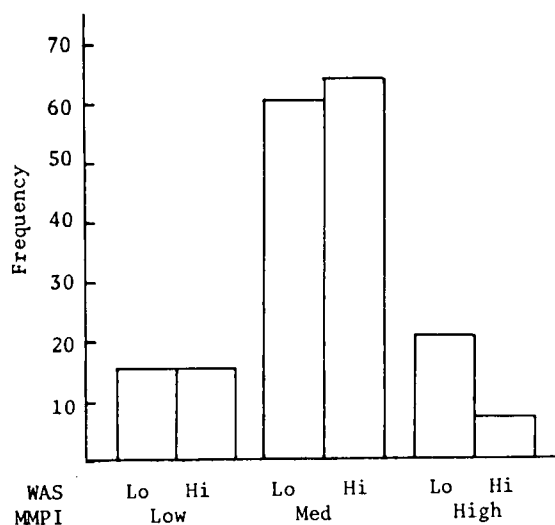


Figure 4

Low Morale × Order and Organization

Chi square = 7.08592 Significance = .0289
 Contingency Coefficient = .19157
 Lambda = .02027
 Gamma = .27285

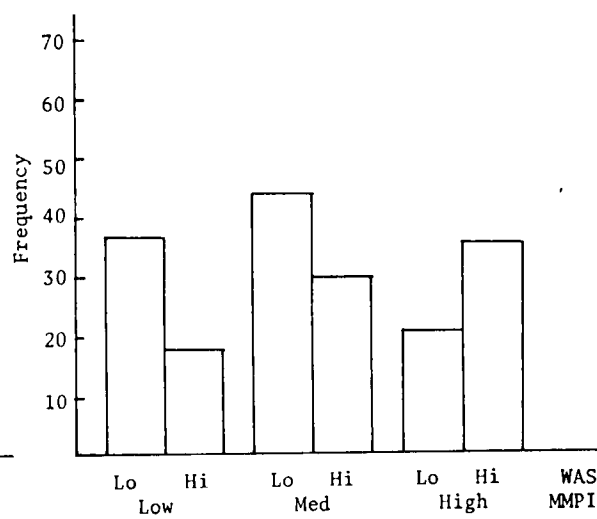


Figure 5

Depression × Anger and Aggression

Chi square = 11.52566 Significance = .0031
 Contingency Coefficient = .24156
 Lambda = .10714
 Gamma = .38208

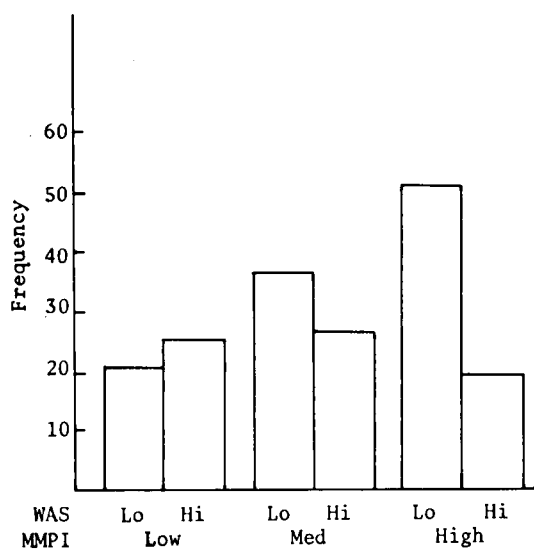


Figure 6

Psychotic Distortion × Support

Chi square = 11.44757 Significance = .0033
 Contingency Coefficient = .24079
 Lambda = .07104
 Gamma = .40382

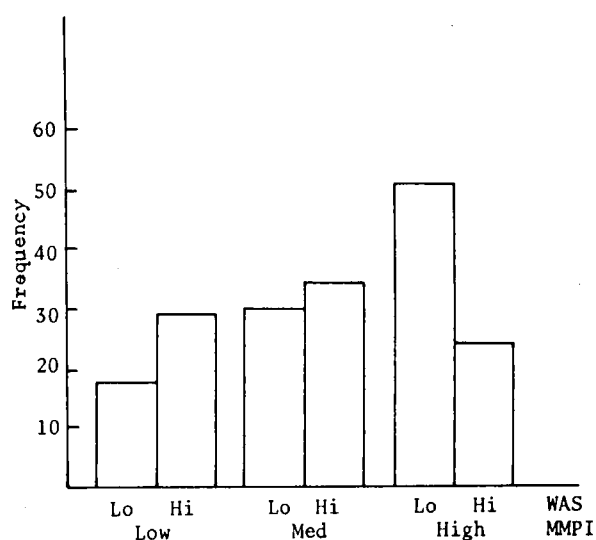


Figure 7

Psychotic Distortion × Spontaneity

Chi square = 11.81947 Significance = .0027
 Contingency Coefficient = .24444
 Lambda = .12626
 Gamma = .39661

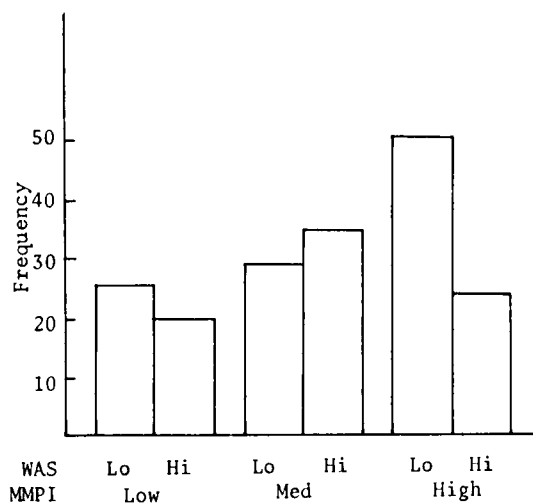


Figure 8

Psychotic Distortion × Autonomy

Chi square = 7.27486 Significance = .0263
 Contingency Coefficient = .19401
 Lambda = .08947
 Gamma = .19316

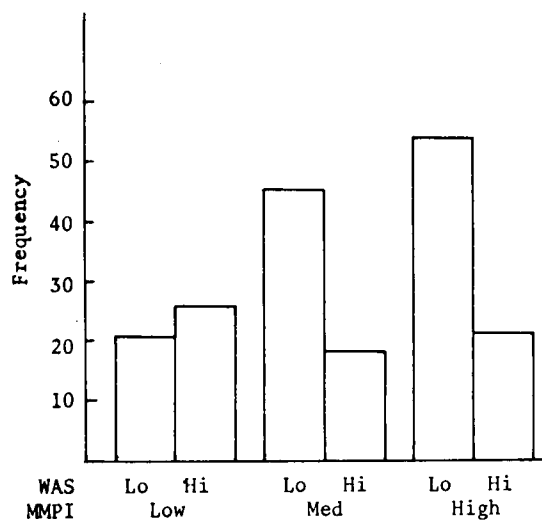


Figure 9

Psychotic Distortion × Practical Orientation

Chi square = 11.48255 Significance = .0032
 Contingency Coefficient = .24113
 Lambda = .05682
 Gamma = .33358

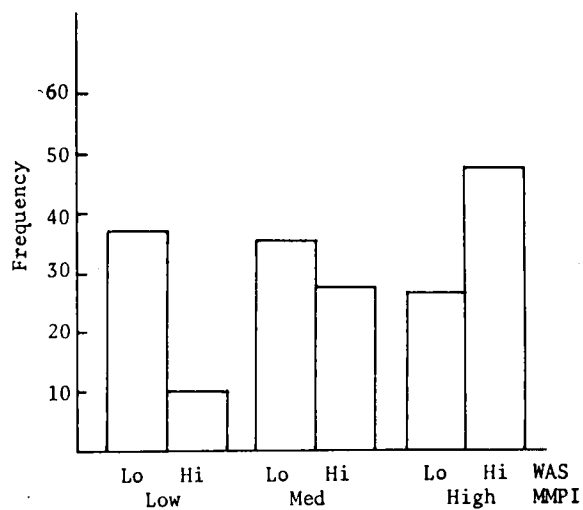


Figure 10

Psychotic Distortion × Staff Control

Chi square = 21.45845 Significance = .0000
 Contingency Coefficient = .32161
 Lambda = .15736
 Gamma = .53223

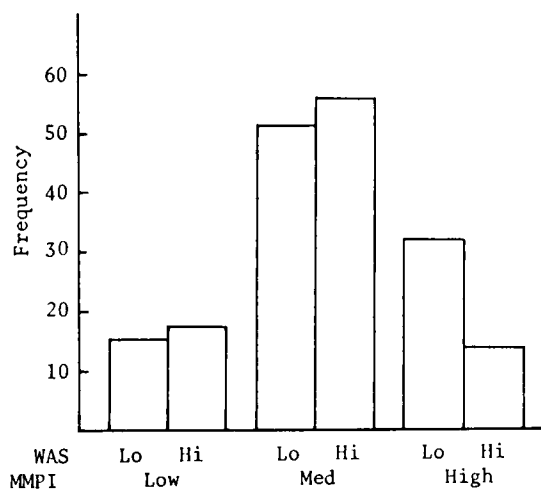


Figure 11

Acting Out × Order Organization

Chi square = 6.56054 Significance = .0376
 Contingency Coefficient = .18458
 Lambda = .03614
 Gamma = -.27179

dichotomization of WAS subscales into high and low was based on the median for each subtest.

Somatization. There were significant interactions measured between scores on the Somatization factor and scores on the Anger and Aggression ($p = .0112$) and Staff Control ($p = .0073$) subscales of the WAS. Low scores on Somatization tended to be associated with low scores on both of these subscales. High scores on Somatization were related to high scores on Staff Control. (See Figures 2 & 3.)

Low Morale. The relationship between Low Morale and Order and Organization was significant at the $p = .0289$ level. Patients who scored high on Low Morale (increased dysphoria) generally perceived little Order and Organization on the ward. Although not statistically significant, a relationship between Low Morale and Program Clarity was also suggested ($p = .0775$). Patients who scored high on Low Morale also appeared to score lower on Program Clarity. (See Figure 4.)

Depression. High scores on Depression yielded high scores on Anger and Aggression. Conversely, low scores on Depression were accompanied by low scores on Anger and Aggression. The relationship was significant at the $p = .0031$ level. (See Figure 5.)

Psychotic Distortion. Statistical significance was found between measures of Psychotic Distortion and the following WAS subscales: (1) Support ($p = .0033$); (2) Spontaneity ($p = .0027$); (3) Autonomy ($p = .0263$); (4) Practical Orientation ($p = .0032$); and (5) Staff Control

($p = .000$). High scores on Psychotic Distortion were related to low scores on the Support, Spontaneity, Autonomy and Practical Orientation subscales and to high scores on Staff Control. Low scores on Psychotic Distortion were related to high scores on Spontaneity and low scores on Staff Control. Medium Psychotic Distortion scores yielded low Practical Orientation scores. (See Figures 6 through 10.)

Acting Out. High scores on Acting Out were related to low scores on Order and Organization (significant at the $p = .0376$ level). Low scores on Acting Out were also associated with low scores on Anger and Aggression ($p = .0739$). (See Figure 11.)

Canonical Correlation: Personality
Variables $\times$ WAS Variables

Assuming that there are characteristics which consistently underlie tests, situations, etc., a reasonable vantage point in the understanding of any "biosphere" (Angyal, 1941) or system of interaction would be an explication and correlation of the constructs which underlie separate measures of the components within the system. One way to correlate constructs which underlie two sets of variables, is to compute a canonical correlation. A canonical correlation coefficient defines the relationship between two sets of variables by accounting for the variance between the constructs found in each set. "Two constructs are correlated to the extent that they share variance or account for common variance in the two sets of variables" (Hinkle, Wiersma, & Jurs, p. 417, 1979). In the canonical correlation analysis, coefficients

will continue to emerge "as long as there are pairs of constructs (one member of the pair in each set of variables) that are correlated and are independent of pairs for which canonical correlations have previously been generated" (Ibid, p. 416). Canonical correlation analysis was developed by Hotelling (1936) who formulated the problem which the correlation would address as finding "the most predictable criterion."

The construct, which is by definition a theoretical entity, is represented numerically by a canonical variate. "Canonical variates are the weighted composites of the variables in each set" (Hinkle, Wiersma, & Jurs, p. 417, 1979). These weights serve a function similar to that of regression coefficients. Although artificial variables, canonical variates are borne out of the relationships which characterize the real variables. Canonical variates and real variables are correlated to determine the "loading," i.e., the extent to which canonical variates reflect the nature of the real variable.

WAS subscale scores and scores on five personality dimensions were intercorrelated (Table 8). Relations between criterion variables (WAS subscales) and predictor variables (personality dimensions) were illustrated by the correlation matrix. A canonical correlation analysis was run between the ten WAS subscales and the five factor scored dimensions of personality. The primary research questions were:

- (1) Are personality dimensions significantly related to perception of treatment milieu?
- (2) What combination of variables within the two sets would produce "the maximum correlation between linear functions of the two sets of variables" (Cooley & Lohnes, p. 35, 1962)?

Table 9 displays results with regard to the first question. The maximum

TABLE 8

CANONICAL CORRELATION COEFFICIENTS

	In	Su	Sp	Au	P.O.	P.P.O.	A&A	A&O	P.C.	S.C.	Som	L.M.	Dep	P.D.	A.O.
Involvement	.43	.23	.37	.15	.44	.08	-.03	.37	.34	.15	.12	.10	.01	.06	-.06
Support				.22	.53	.04	-.25	.50	.47	-.08	-.03	-.08	-.03	-.27	-.14
Spontaneity				.23	.26	.32	.01	.21	.19	-.25	-.03	-.06	.05	-.21	-.01
Autonomy					.14	.17	.08	.12	.13	-.16	-.02	-.01	-.02	-.13	-.02
Practical															
Orientation									.42	-.04	.01	-.04	-.05	-.14	-.09
Personal Problem															
Orientation							.30	-.03	-.01	-.08	.02	.07	.04	-.02	.13
Anger and															
Aggression								-.48	-.31	.08	.13	.04	.17	.05	.17
Order and															
Organization									.43	.02	.01	-.08	-.05	-.10	-.14
Program Clarity										.08	-.08	-.11	-.18	-.08	-.14
Staff Control											.14	.04	.02	.33	-.04
Somatization												.26	.40	.36	.19
Low Morale													.46	.38	.35
Depression														.33	.39
Psychotic Distortion															
Acting Out															.41

TABLE 9
CANONICAL CORRELATION ANALYSIS

	Eigenvalue	Canonical Correlation	Wilks' Lambda	Chi-square	D.F.	Significance
1.	0.24412	.49408	.62634	82.81079	50	.002
2.	0.07898	.28104	.82862	33.27438	36	.599
3.	0.05661	.23792	.89968	18.71107	24	.767
4.	0.03656	.19120	.95367	8.39687	14	.868
5.	0.01015	.10073	.98985	1.80525	6	.937

correlation coefficient accounted for 24.4% of the total variance and was significant (as measured by the chi-square test) at the $p = .002$ level. Following the derivation of the first pair of canonical variates, no other significant combinations emerged. Table 10 exhibits how the individual variables of the two sets of data contributed to the significantly correlated canonical variates, thus providing a response to the second question. The canonical variates from the WAS variables were interpreted as being positively correlated with Involvement ($r = .44$) and Staff Control ($r = .60$) and inversely related to Support ($r = -.56$) and Anger and Aggression ($r = -.40$). For the second set of variables the canonical variates were correlated very highly in the positive direction with Psychotic Distortion ($r = 1.08$) and negatively with Depression ($r = -.39$) and Acting Out ($r = -.37$). The canonical variates for both sets are presented in Table 10. The results of the canonical correlation analysis may be summarized as follows: High scores on Involvement and Staff Control and low scores on Support and Anger and Aggression were related to not being Depressed or Acting Out, and were very related to Psychotic Distortion.

The major finding of the canonical correlation was that a single, unitary dimension emerged as being very significant. It accounted for 24.4% of the total variance of the two sets of data (environmental and personality) and was statistically significant at the $p = .002$ level. The occurrence of this essential dimension lends noteworthy support to the notion of the "biosphere" as being a single, fused entity, and to the emphasis of this study which was to examine both facets in order to

TABLE 10

First Set Canonical Variates	Second Set Canonical Variates
Involvement	Somatization
Support	Low Morale
Spontaneity	Depression
Autonomy	Psychotic Distortion
Practical Orientation	Acting Out
Personal Problem Orientation	
Anger and Aggression	
Order and Organization	
Program Clarity	
Staff Control	

more fully understand behavior and to suggest how a treatment environment might be altered to become maximally effective for all groups that it serves.

CHAPTER V

DISCUSSION

In 1941, Andras Angyal conceptualized a holistic entity, called the "biosphere," in which the organism and environment were united "as aspects of a single reality" (p. 100). "Instead of studying the 'organism' and the 'environment' and their interaction, [he proposed] to study life as a unitary whole and [endeavored] to describe the organization and dynamics of the biosphere" (1941, pp. 100-101). As Becker states, "man's phenomenal world is a mixture of the possibilities of both action and dreams; a real world and an imagined world that cannot be unfused . . . self-feeling and action are inseparably fused with objects. The three together compose the personality" (Becker, 1974, p. 145, p. 155). In order to carry out the study, some distinctions, albeit an artificial abstraction, between person processes and environment processes must be entertained. With an eye toward the holistic entity described above, this research attempted to systematically delineate an interbehavioral field and to investigate the congruence between person and environment processes. In Murray's need-press model there was an important differentiation made between alpha and beta press (Chapter I). These differences are oft times overlooked in studies of person/environment interactions. "Normality" and adequately functioning need-press systems assume that there is little discrepancy between alpha and beta press. However, pathology would, by definition, assume significant discrepancy between the two. It follows, then, that in order

to study and understand aberrant behavior, or any behavior for that matter, environmental dispositions and perceptual predispositions must be comprehended. Comprehension of "biospheric" phenomena would aid in the conceptualization of therapeutic milieus in psychiatric settings and would provide a sort of clinical "tool" in that precedents and coincidents of behavior might be construed and in turn modified to meet specific clinical objectives. Some means of describing "the organization and dynamics of the biosphere" were proposed by this study.

Measures for the definition of environmental dispositions and perceptual predispositions were provided by demographic data, the MMPI and the WAS. Demographic data defined the sample as being fairly young ($\bar{X}$ = 38.6, SD = 13.7, Range = 14-73); female (64%); married (48%); and educated at the high school level (56%). There were statistically significant relationships between the demographic variables and WAS subscales, but measures of association were not as impressive as hoped, and the nature of the relationships were complex. Given the relatively large sample (N = 191), even modest associations between variables emerged as statistically significant, thus, "explanations" of relationships were vague.

Although it was Moos' contention that the WAS is a measure of both subjective perceptions and objective ecological dimensions of the ward, there was evidence which indicated that even "objective dimensions" were functionally different via different perceptual patterns of clinical subgroups (i.e., subjective). A statistically significant relationship was found between Administrative Structure subscales (Order and Organization, Program Clarity, and Staff Control) and each of four of the five

personality measures. Thus, one can conclude that "who" is seeing does, to some extent, determine "what" is being seen.

When using a test like the Ward Atmosphere Scale, it is necessary to bear in mind the qualifications of perception based on the variable need-press systems among individuals (or, in this case, different psychiatric groups). The field, the atmosphere of the ward, is a function of the interaction of person variables and environmental variables. Atmosphere is a reflection of what Brunswik terms "organismic achievement," which accounts for "relationships better than chance existing between, and due to, an organism and variables in its physical environment" (Brunswik, 1943, p. 255). These relationships are relatively stable and allow probabalistic statements about behavior (i.e., predictability). "Survival and its subunits, which may be defined as the establishment of stable interrelationships with the environment, are possible only if the organism is able to establish compensatory balance in the face of comparative chaos within the physical environment" (Brunswik, 1943, p. 257). If such a balance does not exist, as with psychopathology, mediating processes of perception become strained and inflexible. To the extent that the ambiguity of "causal chains in the physical environment" can be reduced, i.e., increased control over environmental conditions, changes in the "causal chains within the organism" may be defined and directed. Thus, the objective of the psychiatric treatment milieu is to direct "achievement." The objective of a ward atmosphere scale is to describe environmental conditions for the purpose of indicating how ambiguity might be reduced.

As a relatively new instrument the WAS has experienced vigorous intent and application without rigorous demarcation of source and substance. What is involved in the process of perceiving ward atmosphere? What are the basic components of the field as perceived by individuals within it? In this study, factor analysis of the WAS disclosed three basic determinants of organismic achievement: (1) "Evaluation," (2) "Affective Expression," and (3) "Control."

"Evaluation" is inferred to be a strong indication of the stability of interrelationships with the environment. These interrelationships are possibly conducive to promoting balanced person $\times$ environment interactions and subsequent healthier, adaptive individual functioning. The evaluation factor loads heavily on aspects of the total interbehavioral field that are extra-personally determined, e.g., characteristics of the setting and the nature and function of external stimuli (including other individuals, program policies, etc.). These parallel the sf, st, and md components of Kantor's formula for psychological events.

The second factor, "Affective Expression" represents an intrapersonal contribution to perception of atmosphere. Again using Kantor's formula for comparison, this component reflects the function of the organism (rf) and historical precedents of interactions, e.g., learning, memory (hi).

"Control" may be a statement of the setting's "intentions" for people (Barker). In Kantor's theory it is signified by k, the qualities or conditions which make an interbehavioral field unique.

The WAS permits scrutinization of stimulus variables which may precede or "cause" reactions. However, in order to analyze interaction

and congruence of persons and environments, it is also necessary to address organism variables that influence and are influenced by external conditions. Relationships exuded by chi-square tests between personality variables (DSM II diagnoses and MMPI factor dimensions) and WAS variables provide clues for understanding the "structured organism—environment field" (Murray, 1947, p. 8).

There are several conclusions which may be drawn from the personality variables $\times$ WAS variables Chi-square tests and canonical correlation analysis:

(1) It is clear that there is a strong relationship between diagnostic groups and the perception of involvement, support, and spontaneity on the ward. A diagnosis of psychosis is associated with lesser assessments of these characteristics. The fact that qualities of involvement, support, and spontaneity may not be readily or easily perceived by psychotic populations is understood in light of the dynamics of psychosis. This group exhibits organismic variables which include isolation, withdrawal, and rigid, fragile systems of interactions with either people or environment.

(2) A prominent interaction effect between affective personality variables (Low Morale, Depression, and Acting Out) and Factor II of the WAS ("Affective Expression") was demonstrated. With any increase in affective state, i.e., toward depression, dysphoria, or acting out, there is a concomitant decrease in perceived order and organization and an increase in perceived anger and aggression. Issues of both anger and chaos are documented in the depression literature generally as "anger

turned inward" and confused perceptions of self and other. Acting out would represent the more active side of the same sentiments. The findings appeared to be consistent with the theoretical constructs of affective and motoric personality dimensions. The canonical correlation supported these findings by relating negative anger and aggression loadings with not being depressed and not acting out.

(3) Factor I depicted an "Evaluation" dimension. Interestingly, and predictably, the group which was least able to evaluate stimulus variables, i.e., the group which was most likely to be at odds with reality, illustrated the nature of this factor best. Persons who scored high on Psychotic Distortion tended to score low on all five of the subscales which appeared (by factor loadings) to comprise the evaluative factor (Involvement, Support, Practical Orientation, Order and Organization, and Program Clarity). Thus, in an inverted fashion, factor I was supported by the personality dimension of Psychotic Distortion. The canonical analysis also implied that Psychotic Distortion was negatively correlated with Support.

(4) The third factor was not as clearly illustrated or supported by the relationship measures. It had to do with perceiving a lot of Spontaneity and Autonomy and very little Staff Control. Again, the law of opposites applied. An inverse function of the Psychotic Distortion variable appeared to provide the best definition of factor III, "Control." Individuals whose perceptions of the environment were distorted tended to perceive little Spontaneity and Autonomy and much Staff Control. The canonical correlation between Psychotic Distortion and Staff Control was high and positive.

(5) The clearest understanding of how person processes influence perception of environment in psychiatric settings was offered by the Psychotic Distortion dimension. The affective and motoric dimensions (Somatization, Low Morale, Depression, and Acting Out) also make fairly clear statements of mutual influence. Murray's notion of personality disruption as a function of increasingly discrepant alpha and beta press is supported. A lot may be discerned about a particular treatment milieu based upon the testimony of internalizers (i.e., psychotic influences) versus externalizers (affective and motoric influences). By correcting for the opposite extremes of influences, a more accurate understanding of the environment may be attained.

In summary, the following conclusions were salient with respect to the stated hypotheses of the study: (1) It was possible to systematically analyze stimulus variables in the environment. A delineation of environmental press was indicated by three factors: evaluation, affective expression, and control. Furthermore, the factors indicated what aspects of the environment were being perceived and the nature of the influence (e.g., positive or negative). With knowledge of what is perceived as characteristic of the milieu and how those perceptions might affect treatment, more can be done to enhance the therapeutic properties of the milieu in general (for all patients) and specifically (for individuals). Thus, it is feasible to use such an environmental analysis to ascertain "environmental probabilities," and (2) Persons who manifest certain sphere dominance along the psychological activity continuum, i.e., personality styles, perceived the environment

in such a way as was congruent with their pathologies. Within the internal-ideational sphere, the locus of perceptual functions were internal and preoccupied with control. Action is replaced by ideation. The data documented the interaction of Psychotic Distortion (which falls in the internal-ideational sphere) and perceptions of the absence of relationship dimensions (low Involvement, Support, and Spontaneity), the absence of action (low Autonomy, Practical Orientation) and a great deal of concern with control (high Staff Control). Within the affective and/or motoric spheres perceptual functions are characterized by emotional states and a concern with what action to take. Action tends to be impulsive and inconsistent (i.e., rapid shifts as determined by mood state) for both groups. Emotions are brittle, highly charged (may swing in both directions), and usually marked with resentment of various types. Again, the interaction between sphere dominance and perception of the milieu was supported by the data. Affective and motoric variables were significantly related to increased perceptions of Anger and Aggression and decreased perceptions of Order and Organization.

The two basic spheres, cognitive and affective, also appeared to be directly related to the factor patterns underlying the WAS. Conceivably, the WAS could be factor scored and would show that patients whose sphere dominance was ideational would score significantly lower on factors I and II than other patients, and that patients whose sphere dominance was affective or motoric would score significantly higher on factor III than other patients.

The implications of these findings for treatment are a matter of emphases and de-emphases. As an example, consider a person who is very depressed. That person's environmental reflex will be toward affective perception and display. Conditions, situations and policies which might potentiate explosive (inward and outward) feeling states should be acknowledged, and, if not avoided, used to a therapeutic advantage. On the other hand, consider an individual who is psychotic. That person would be oblivious to the very facets of the milieu which might otherwise serve to dissolve the isolation and dissuade withdrawal. An emphasis of those aspects would therefore be indicated.

Through a better understanding of the "biosphere," more may be known about different personalities and about the environment which proposes to change some aspect(s) of the personality. Person and environment are always an inseparable phenomenon, and change, the therapeutic intention, must be a controlled effect of, and must have an impact on, the holistic entity of the biosocial system.

The most significant outcome of this research is support of the fact that interbehavioral fields may be systematically represented by formulas of interaction between persons and environments. A combination of personality variables and environmental variables produces the "best" statement about the ecology of any setting. Further, when the dynamics of the interaction are known, definition of conditions necessary to stabilize the interrelationship with the environment and directed behavior change are made possible. This study provides evidence toward the applicability of a formula for interbehavioral fields such as that

proposed by Kantor. The "formula" can define interactions and predict the press of specific settings for certain individuals. A complex of factors (intra-, inter-, and extra-personal) may be considered at once; therefore enabling description of the unique psychological field. "The recurring presence of stimuli along with the conditions of organisms provide the occasions for action and influence the configuration, the strength, and the duration of the interbehavior" (Kantor). The advantages and applicability of this type of analysis to a psychiatric treatment setting are indeed obvious.

REFERENCES

REFERENCES

- Alden, L. Factor analysis of the Ward Atmosphere Scale. Journal of Consulting and Clinical Psychology, 1978, 46, (1), 175-176.
- Allport, F. H. Theories of perception and the concept of structure. New York: Wiley, 1955.
- American Psychiatric Association. A diagnostic and statistical manual of mental disorders. Washington, D.C.: American Psychiatric Association, 1968.
- Angyal, A. Foundations for a science of personality. New York: Commonwealth Fund, 1941.
- Angyal, A. The holistic approach in psychiatry. American Journal of Psychiatry, 1948, 105, 178-182.
- Angyal, A. A theoretical model of personality studies. Journal of Personality, 1951, 20, 131-142.
- Astin, A. W. Undergraduate achievement and institutional "excellence." Science, 1968, 161, 661-668.
- Barker, H. R., Fowler, R. D., & Peterson, L. P. Factor analytic structure of the short form MMPI items. Journal of Clinical Psychology, 1971, 27, 228-233.
- Barker, R. Ecological psychology. Stanford: Stanford University Press, 1968.
- Barker, R. Explorations in Ecological Psychology. American Psychologist, 1965, 20, 1-14.
- Becker, E. Revolutions in psychiatry. New York: The Free Press, 1974.
- Brunswik, E. Organismic Achievement and Environmental Probability. The Psychological Review, 1943, Vol. 50, No. 3, 255-272.
- Cattell, R. B. The scree test for the number of factors. Multivariate Behavioral Research, 1966, 1, 245-276.
- Cooley, W., & Lohnes, P. Multivariate procedures for the behavioral sciences. New York: Wiley, 1962.
- Cronbach, L. J. Essentials of psychological testing (Third Ed.). New York: Harper and Row Publishers, Inc., 1970, 527-547.

- Dahl, L. (Ed.) The Urban Condition. New York: Basic Books, 1963.
- Ellsworth, R., & Maroney, R. Characteristics of psychiatric wards and their effects on patients' adjustment. Journal of Consulting and Clinical Psychology, 1972, 39, 436-447.
- Endler, N. & Hunt, J. S-R inventories of hostility and comparisons of the proportions of variance from persons, responses, and situations for hostility and anxiousness. Journal of Personality and Social Psychology, 1968, 9, 309-315.
- Freud, S. A General Introduction to Psychoanalysis. New York: Liveright Publishing Corporation, 1920.
- Goodman, L. A., & Kruskal, W. H. Measures of association for cross classifications. III. Approximate sampling theory. Journal of the American Statistical Association, 1963, 58, 310-364.
- Hall, C. S., & Lindzey, G. Theories of personality. New York: Wiley, 1967.
- Hartshorne, H. & May, M. Studies in deceit. New York: Macmillan, 1928.
- Henrysson, S. Applicability of factor analysis in the behavioral sciences. Stockholm: Almqvist and Wiksell, 1957.
- Hinkle, D., Wiersma, W., & Jurs, S. Applied statistics for the behavioral sciences. Chicago: Rand McNally, 1979, 415-424.
- Holt, R. R. "Editor's forward." In D. Rapaport, M. M. Gill, & R. Schafer, Diagnostic psychological testing (Revised ed.). New York: International Universities Press, 1968, 1-44.
- Hotelling, H. Relations between two sets of variates. Biometrika, 1936, 28, 321-377.
- Kantor, J. R. A Survey of the science of Psychology. Bloomington, Ind.: Principia Press, 1933.
- Kantor, J. R. Current trends in psychological theory. Psychological Bulletin, 1941, 38, 29-65.
- Kantor, J. R. The Scientific Evolution of Psychology. Chicago: Principia Press, Vol. 1, 1963.
- Kantor, J. R. The Scientific Evolution of Psychology. Chicago: Principia Press, Vol. 2, 1969.
- Lewin, K. Principles of topological psychology. New York: McGraw-Hill, 1936.

- Linton, R. The cultural background of personality. New York: Century, 1945.
- Lorr, M. A test of seven MMPI factors. Multivariate Behavioral Research, 1968, (3), 151-156.
- Milby, J., Pendergrass, P., & Clarke, C. Token economy versus control ward: A comparison of staff and patient attitudes toward ward environment. Behavior Therapy, 1975, (6), 22-29.
- Moos, R., & Houts, P. Assessment of the social atmosphere of the psychiatric ward. Journal of Abnormal Psychology, 1968, (73), 595-604.
- Moos, R., & Houts, P. Differential effects of the social atmospheres of psychiatric wards. Human Relations, 1970, (23) 47-60.
- Moos, R. H. Sources of variance in responses to questionnaires and in behavior. Journal of Abnormal Psychology, 1969, (74), 405-412.
- Moos, R., & Schwartz, J. Treatment environment and treatment income. Journal of Nervous and Mental Disease, 1972, (154), 264-275.
- Moos, R. H. Conceptualizations of human environments. American Psychologist. 1973, (28), 652-665.
- Moos, R. H. Evaluating treatment environments: A social ecological approach. New York: Wiley, 1974.
- Mulaik, S. The foundations of factor analysis. New York: McGraw-Hill, 1972.
- Murphy, G. Personality: a biosocial approach to origins and structure. New York: Harper, 1947.
- Murray, H. A. Explorations in personality. New York: Oxford, 1938.
- Murray, H. A. Toward a classification of interaction. In T. Parsons and E. A. Shils (Eds.), Toward a general theory of action. Cambridge: Harvard University Press, 1951, 434-464.
- Nie, N. H., Hull, C. H., Jenkins, J. G., Steinbrenner, K., & Bent, D. H. Statistical Package for the Social Sciences (Second Ed.). New York: McGraw-Hill Book Co., 1975.
- Nunnally, J. C. Psychometric Theory. New York: McGraw-Hill Book Co., 1976.

- Overall, J. E., Hunter, S., & Butcher, J. N. Factor structure of MMPI-168 in a psychiatric population. Journal of Consulting and Clinical Psychology, 1973, (41), 284-286.
- Overall, J. E., & Gomez-Mont, F. MMPPI-168 for psychiatric screening. Journal of Educational and Psychological Measurement, 1974, Vol. 34(2), pp. 315-319.
- Parsons, T., & Shils, E. A. (Eds.). Toward a general theory of action. Cambridge, Massachusetts: Harvard University Press, 1951.
- Piaget, J. The origins of intelligence in children. New York: International Universities Press, 1952.
- Porter, L., & Lawler, E. Properties of organization structure in relation to job attitudes and job behavior. Psychological Bulletin, 1965, 64, 23-51.
- Rapaport, D., Gill, M. M., & Schafer, R. Diagnostic psychological testing (Revised ed.). New York: International Universities Press, 1968.
- Raush, H., Dietman, A., & Taylor, T. Person, setting, and change in social interaction. Human Relations, 1959, (12), 361-378.
- Schutz, W. C. FIRO: A three-dimensional theory of interpersonal behavior. New York: Rinehart, 1958.
- Sells, S. B. Stimulus determinants of behavior. New York: Ronald Press, 1963. (a)
- Sells, S. B. An interactionist looks at the environment. American Psychologist, 1963, (18), 696-702. (b)
- Stern, G. People in context: Measuring person environment congruence in education and industry. New York: Wiley, 1970.
- Stern, G., Stein, M., & Bloom, B. Methods in personality assessment. Glencoe, Ill.: Free Press, 1956.
- Thurstone, L. L. Multiple factor analysis. Chicago: University of Chicago Press, 1947.
- Tolman, E. C., Kurt Lewin, 1890-1947. Psychological Review, 1948, Vol. 55, pp. 1-4.
- Tryon, R. C. Unrestricted cluster and factor analysis with applications to the MMPI and Holzinger-Harmon problems. Multivariate Behavioral Research, 1966, (1), 229-244.

- Tryon, R. C. Person-clusters on intellectual abilities and on MMPI attributes. Multivariate Behavioral Research, 1967, (2), 5-34. (a)
- Tryon, R. C. Protecting individual differences in cluster analysis: Holzinger abilities and MMPI personality attributes. Multivariate Behavioral Research, 1967, (2), 325-348. (b)
- Wilkinson, L. An assessment of the dimensionality of Moos' Social Climate Scale. American Journal of Community Psychology, 1973, (1), 342-350.

APPENDIX

TABLE 11
FREQUENCIES OF DSM II DIAGNOSIS

	Frequency
290 Senile and pre-senile dementia	1
291 Alcoholic psychosis	
293 Psychosis assoc. with other cerebral condition	1
294 Psychosis assoc. with other physical condition	2
295 Schizophrenia	54
296 Affective psychosis	16
297 Paranoid states	4
298 Other psychosis	2
299 Unspecified psychosis	2
300 Neurosis	56
301 Personality disorders	13
303 Alcoholism	19
304 Drug dependence	1
307 Transient situational disturbances	6
309 Nonpsychotic OBS	3
315 Unspecified mental retardation	
316 Social maladjustments without manifest psychiatric disorders	3
319 Nondiagnostic terms for administration use	3

WAS Subscale Definitions

1. Involvement: measures how active and energetic patients are in the day-to-day social functioning of the ward. Patient attitudes such as pride in the ward, feelings of group spirit, and general enthusiasm are assessed.
2. Support: measures how helpful and supportive patients are towards other patients, how well the staff understand patient needs and are willing to help and encourage patients, and how encouraging and considerate doctors are towards patients.
3. Spontaneity: measures the extent to which the environment encourages patients to act openly and to freely express their feelings towards other patients and the staff.
4. Autonomy: assesses how self-sufficient and independent patients are encouraged to be in their personal affairs and in their relationships with staff and how much responsibility and self-direction patients are encouraged to exercise.
5. Practical Orientation: assesses the extent to which the program orients patients towards preparing themselves for release from the hospital and for the future. Such things as training for new kinds of jobs, looking to the future and setting and working toward practical goals are considered.
6. Personal Problem Orientation: measures the extent to which patients are encouraged to be concerned with their feelings and problems, and to seek to understand them through openly talking to other patients and staff about themselves and their past.
7. Anger and Aggression: measures the extent to which a patient is allowed and encouraged to argue with patients and staff, to become openly angry and to display other expressions of anger.
8. Order and Organization: measures how important order and organization is on the ward, e.g., do patients follow regular schedules, is the ward well kept, do staff keep appointments, are activities carefully planned?
9. Program Clarity: measures the extent to which the patient knows what to expect in the day-to-day routine of the ward and how explicit the ward rules and procedures are.
10. Staff Control: measures the extent to which it is necessary for the staff to restrict patients, i.e., in the strictness of rules and schedules, in the relationships between patient and staff, and in measures taken to keep patients under effective controls.

(Moos, 1974)

TABLE 12
CONVERTING PTS. WARD MEAN RAW SCORES TO STANDARD SCORES

Raw Score	Involvement	Support	Spontaneity	Autonomy	Prac. Orien.	Per. Prob. Orien.	Anger & Aggr.	Order & Org.	Pro. Clarity	Staff Control
10.0	90	95	—	96	99	—	—	81	99	89
9.5	85	89	—	91	93	—	—	77	94	85
9.0	81	84	95	87	87	84	81	73	89	81
8.5	77	79	90	82	80	80	77	69	84	77
8.0	72	74	85	77	74	76	74	65	78	72
7.5	68	69	80	72	68	72	70	61	73	68
7.0	64	63	75	67	62	68	660	57	68	64
6.5	59	58	70	62	56	64	62	52	63	60
6.0	55	53	65	57	50	60	58	48	57	56
5.5	51	48	60	53	44	56	54	44	52	52
5.0	46	43	55	48	38	52	50	40	47	48
4.5	42	37	500	43	32	48	47	36	42	44
4.0	38	32	45	38	26	44	43	32	36	39
3.5	34	27	40	33	20	40	39	28	31	35
3.0	29	22	35	28	14	35	35	24	26	31
2.5	25	16	30	23	8	31	31	20	21	27
2.0	21	11	25	19	2	27	27	16	15	23
1.5	16	6	20	14	—	23	24	12	10	19
1.0	12	1	15	9	—	19	20	8	5	15
0.5	8	—	10	4	—	15	16	4	—	10

TABLE 13
 COMPILATION OF THE SAMPLE IN TERMS OF MMPI FACTOR/SCORES

	Somatization	Low Morale	Depression	Psychotic Distortion	Acting Out
Mean	75.9	61.4	66.5	64.1	51.4
Median	79.9	62.1	66.3	61.2	49.5
Mode	92.0	62.0	90.0	57.0	45.0
Standard Deviations	14.4	9.2	14.9	15.6	12.0
Range	43-92	33-77	35-90	35-90	25-83

TABLE 14
FACTOR LOADINGS

Factor	Varimax	Oblique/ =-1	Oblique/ =-.5	Oblique/ =0	Oblique/ =.5			
I	In	.75	In	.63	In	.62		
	Su	.73	Su	.76	Su	.76		
	Sp	.34	Sp	.43	Sp	.44		
	PO	.72	PO	.66	PO	.66		
	OO	.63	OO	.61	OO	.62		
	PC	.70	PC	.62	PC	.62		
II	PPO	.67	PPO	.52	PPO	.52	Sp	.30
	AA	.82	AA	.75	AA	.75	PPQ	.53
	OO	-.48	OO	.35	OO	-.35	AA	.74
							OO	-.31
III	Su	.30	Sp	-.51	Sp	-.51	Su	-.35
	Sp	.65	SC	.63	SC	.63	Sp	-.52
	Au	.48					SC	.61
	PPO	.34						
	SC	-.82						

WARD ATMOSPHERE SCALE (From Moos, 1974)

1. Patients put a lot of energy into what they do around here.
2. Doctors have very little time to encourage patients.
3. Patients tend to hide their feelings from one another.
4. The staff act on patient suggestions.
5. New treatment approaches are often tried on this ward.
6. Patients hardly ever discuss their sexual lives.
7. Patients often gripe.
8. Patients' activities are carefully planned.
9. The patients know when doctors will be on the ward.
10. The staff very rarely punish patients by restricting them.
11. This is a lively ward.
12. The staff know what the patients want.
13. Patients say anything they want to the doctors.
14. Very few patients have any responsibility on the ward.
15. There is very little emphasis on making patients more practical.
16. Patients tell each other about their personal problems.
17. Patients often criticize or joke about the ward staff.
18. This is a very well organized ward.
19. Doctors don't explain what treatment is about to patients.
20. Patients may interrupt a doctor when he is talking.
21. The patients are proud of this ward.
22. Staff are interested in following up patients once they leave the hospital.
23. It is hard to tell how patients are feeling on this ward.
24. Patients are expected to take leadership on the ward.
25. Patients are encouraged to plan for the future.
26. Personal problems are openly talked about.
27. Patients on this ward rarely argue.
28. The staff make sure that the ward is always neat.
29. If a patient's medicine is changed, a nurse or a doctor always tells him why.
30. Patients who break the ward rules are punished for it.
31. There is very little group spirit on this ward.
32. Nurses have very little time to encourage patients.
33. Patients are careful about what they say when staff are around.
34. Patients here are encouraged to be independent.
35. There is very little emphasis on what patients will be doing after they leave.
36. Patients are expected to share their personal problems with each other.
37. Staff sometimes argue with each other.
38. The ward sometimes gets very messy.
39. Ward rules are clearly understood by the patients.
40. If a patient argues with another patient, he will get into trouble with the staff.
41. Nobody ever volunteers around here.
42. Doctors spend more time with some patients than with others.
43. Patients set up their own activities without being prodded by the staff.
44. Patients can leave the ward whenever they want to.
45. There is very little emphasis on making plans for getting out of the hospital.
46. Patients talk very little about their past.
47. Patients sometimes play practical jokes on each other.
48. Most patients follow a regular schedule each day.
49. Patients never know when a doctor will ask to see them.
50. Staff don't order the patient around.

51. Patients are pretty busy all of the time.
52. The healthier patients on this ward help take care of the less healthy ones.
53. When patients disagree with each other, they keep it to themselves.
54. Patients can wear what they want.
55. This ward emphasizes training for new kinds of jobs.
56. Patients are rarely asked personal questions by the staff.
57. It's hard to get people to argue around here.
58. Many patients look messy.
59. On this ward everyone knows who's in charge.
60. Once a schedule is arranged for a patient, the patient must follow it.
61. The ward have very few social activities.
62. Patients rarely help each other.
63. It's O.K. to act crazy around here.
64. There is no patient government on this ward.
65. Most patients are more concerned with the past than with the future.
66. Staff are mainly interested in learning about patients' feelings.
67. Staff never start arguments in group meetings.
68. Things are sometimes very disorganized around here.
69. If a patient breaks a rule, he knows what will happen to him.
70. Patients can call nursing staff by their first name.
71. Very few things around here ever get people excited.
72. The ward staff help new patients get acquainted on the ward.
73. Patients tend to hide their feelings from the staff.
74. Patients can leave the ward without saying where they are going.
75. Patients are encouraged to learn new ways of doing things.
76. The patients rarely talk about their personal problems with other patients.
77. On this ward staff think it is a healthy thing to argue.
78. The staff set an example for neatness and orderliness.
79. People are always changing their minds here.
80. Patients will be transferred from this ward if they don't obey the rules.
81. Discussions are pretty interesting on this ward.
82. Doctors sometimes don't show up for their appointments.
83. Patients are encouraged to show their feelings.
84. Staff rarely give in to patient pressure.
85. Staff care more about how patients feel than about their practical problems.
86. Staff strongly encourage patients to talk about their past.
87. Patients here rarely become angry.
88. Patients are rarely kept waiting when they have an appointment with the staff.
89. Patients never know when they will be transferred from this ward.
90. It's not safe for patients to discuss their personal problems around here.
91. Patients often do things together on the weekends.
92. Staff go out of their way to help patients.
93. The ward always stays just about the same.
94. The staff discourage criticism.
95. Patients must make plans before leaving the hospital.
96. It's hard to get a group together for card games or other activities.
97. A lot of patients just seem to be passing time on the ward.
98. The day room is often messy.
99. Staff tell patients when they are getting better.
100. It's a good idea to let the doctor know that he is boss.

VITA

Antoinette L. Anker was born on May 9, 1953, in Washington, D.C. She lived in Perry Point, Maryland until 1963, then moved to Knoxville, Tennessee. In Knoxville, she attended Bearden High School from which she graduated in June, 1971. She received her Bachelor of Arts degree in March, 1975 from The University of Tennessee, Knoxville, with a major in Psychology and a minor in Art and Architecture.

In September, 1975, Ms. Anker was enrolled in the Ph.D. program in Clinical Psychology at The University of Tennessee, Knoxville. While a graduate student she was employed as a part-time psychological associate at the Helen Ross McNabb Mental Health Center in Knoxville, and at the Cherokee Mental Health Center in Morristown, Tennessee. Ms. Anker also served as a member of the teaching faculty for The University of Tennessee Evening School.

Following the completion of her course work in August, 1979, Ms. Anker took a Clinical Psychology Internship at the University of Colorado Health Sciences Center in Denver, Colorado. She graduated in December, 1980 after having completed the internship and all requirements for the Doctor of Philosophy degree.

Currently Dr. Anker is a post-doctoral fellow at the University of Colorado Health Sciences Center. She is engaged in research supported by a grant from the National Institute on Drug Abuse.