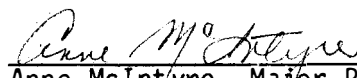
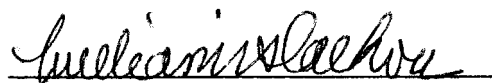


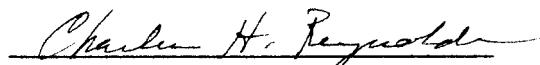
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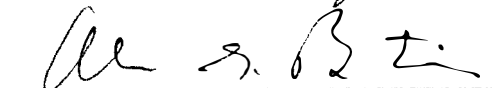
I am submitting herewith a dissertation written by Scott D. Glass entitled "A Study of Three Measures of Ego Development in Foster Adolescents." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.


Anne McIntyre, Major Professor

We have read this dissertation
and recommend its acceptance:







Accepted for the Council:


Vice Provost
and Dean of The Graduate School

A STUDY OF THREE MEASURES OF EGO DEVELOPMENT
IN FOSTER ADOLESCENTS

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

Scott D. Glass

June 1986

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DEDICATION

This disseration is dedicated to all of my teachers, supervisors, and colleagues who helped me to learned the art and science of clinical psychology.

ACKNOWLEDGMENTS

First of all, I would like to thank the members of my doctoral committee, all of whom provided invaluable assistance and support over the two years it took to conceive and produce this dissertation. Anne McIntyre, chairman of my committee, can not be thanked enough, for not only did she provide excellent training in the conceptualization and execution of psychological research, but she was an admirable role model of what a clinical psychologist should be and a supportive friend and counselor throughout my career at The University of Tennessee. Al Burstein, a member of my committee, also provided invaluable assistance in the design and execution of this dissertation. In addition, he taught me a great deal about psychotherapy, psychoanalytic theory, and the Rorschach, and has been a good friend. I also wish to thank the other members of my committee, Charles Reynolds for providing valuable insights into design considerations and data interpretation, as well as imparting an atmosphere of warmth and reasonableness; and Bill Calhoun for supplying helpful suggestions for the analysis and interpretation of the data.

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ABSTRACT

The construct "ego" is used within different theoretical models. Various models, however, differ in the inclusiveness of functions subsumed under this construct. The psychoanalytic ego construct is conceptually similar to one proposed by Jane Loevinger in that both subsume aspects of cognition, delay in the gratification of conscious wishes, and social relations. They differ in that the analytic ego is uniquely assumed to mediate aspects of adaptive functioning and the regulation of affective and instinctual demands, while Loevinger's ego is uniquely assumed to mediate character style and the content of consciousness. Comparisons of tests designed to measure the two model's ego constructs should, therefore, reflect this pattern of conceptual similarity and dissimilarity.

The Barron Ego Strength and six conceptually independent measures derived from the Rorschach (using the Burstein-Loucks scoring system) were selected to measure the psychoanalytic ego construct, and the Washington University Sentence Completion Test (WUSCT) was selected to measure Loevinger's ego construct. High correlations were predicted between the Barron and some of the six Rorschach measures, while only moderate correlations were predicted between the WUSCT and the psychoanalytic ego measures. All of the tests were administered to 42 nonclinical foster adolescents.

A moderate but significant correlation was found between the WUSCT and a Rorschach variable designed to measure the adaptive use of imagination. No other significant correlations were found. The

distribution of the foster adolescent's WUSCT scores was compared to other research samples of clinical and nonclinical home reared adolescents. Implications for the use of the tests as measures of "ego" and the conceptual similarity of the ego constructs, as well as differences among the samples of adolescent's WUSCT scores and their implications for foster care were discussed.

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CHAPTER 1

INTRODUCTION

This study was undertaken to determine whether measures of ego development, derived from two seemingly dissimilar theoretical models and three types of instruments, yield convergent or nonconvergent patterns. One measure, the Washington University Sentence Completion Test (WUSCT), is a paper and pencil projective test based on a cognitive/developmental psychology model developed by Jane Loevinger (Loevinger, 1966). The other two, the Barron Ego Strength Scale, and the Rorschach Technique, scored using the Burstein-Loucks scoring system, (Burstein & Loucks, 1985), are based on the psychoanalytic ego construct. Of these two tests, the first is a self report inventory, and the second is a projective test administered within an interpersonal context.

Secondarily, this study was conducted using foster adolescents to provide descriptive data on a population that is thought to be at risk for developing psychopathology and which, it was felt, would contain individuals across a wide range of ego development levels. Use of such a sample would provide both the needed degree of variability to justify the use of correlational methods for data analysis and allow for the collection of baseline data on a sparsely researched population with regard to ego development and ego functioning.

In the first part of this chapter, an overview of the concept "ego" as understood within the psychoanalytic model and the cognitive model of Jane Loevinger will be presented. It is the intent of this

presentation to acquaint the reader with the current definitions of the concept "ego" used within each model, rather than provide a comprehensive discussion of the origin and vicissitudes in the development of each model's construct. Such comprehensive discussions have been presented in the psychoanalytic literature (Blanck & Blanck, 1974; Gill, 1951; Laplanche & Pontalis, 1973; Kernberg, 1976) and in the writings of Jane Loevinger (Loevinger, 1976a). After this theoretical discussion, research pertinent of the use of the WUSCT, the Barron, and the Rorschach as measures of "ego" will be presented. Finally, research that has compared the tests will be reviewed.

The Psychoanalytic Ego Construct

In the psychoanalytic model, the ego is felt to be a functional unit of the mind that operates on itself, other parts of the psyche, and the environment. This ego, which can be strong or weak, highly developed or regressed, whole or split, is responsible for the adaptation of the organism to the environment, modification and mastery of the external world, and maintenance of the organism as a whole. Like the operating system of a computer, the ego can be thought of, in this model, as that system of software programs and subroutines which enables the hardware to carry out the tasks demanded of it. When analytic writers discuss the ego, they mostly talk about what it does and describe it by its functions. Like a toolbox full of wrenches and screwdrivers, their ego is a collection of mental tools that enable us to solve the problems of our existence.

The psychoanalytic understanding of the ego was first formulated by Freud. Although his ideas regarding this apparatus changed somewhat over time, his later writings provide the most carefully thought out formulation and that which has found its way into the mainstream of psychoanalytic thinking. In the Ego and the Id (1947), Freud outlined his tripartite model of the mind describing the ego as a special organ defined by its functions which include perception, motility, memory, defensive functioning, and synthetic operations (mediating intersystemic conflicts). The importance of the ego's role as the controller and modulator of the id's asocial instinctual demands can be seen in the following well know passage:

The functional importance of the ego is manifested in the fact that normally control over the approaches to motility devolves upon it. Thus in its relation to the id it is like a man on horseback, who has to hold in check the superior strength of the horse. The illustration may be carried further. Often a rider, if he is not to be parted from his horse, is obliged to guide it where it wants to go; so in the same way the ego constantly carries into action the wishes of the id as if they were its own (p. 30).

Likewise, Freud's view of the ego as a versatile organ which is caught between conflicting demands and which must make use of every tool at its disposal to carry out its near impossible task is dramatized in the following:

Like the dweller in a borderland that it is, the ego tries to mediate between the world and the id, to make the id comply with the world's demands and, by means of muscular activity, to accommodate the world to the id's desires. In point of fact it behaves like the physician during treatment by analysis; it offers itself to the id as a libidinal object in view of its power of adaptation to the real world, and at attaching the id's libido to itself. It is not only the ally of the id; it is also a submissive slave who courts the love of his master. Whenever possible, it tries to remain on good terms with the id; it draws the veil of its preconscious rationalizations over the id's

unconscious demands, it pretends that the id is showing obedience to the mandates of reality, even when in fact it is remaining obdurate and immovable; it throws a disguise over the id's conflicts with reality and, if possible, over its conflicts with the super-ego too. Its position midway between the id and reality tempts it only too often to become syncophantic, opportunist and fake, like a politician who sees the truth but wants to keep its place in popular favor (p. 83).

Although Freud laid the groundwork for the analytic concept of the ego, he left it as a theory with many logical and structural weaknesses, partly due to the fact that his primary interests lay in his id psychology rather than his ego psychology (Schafer, 1970). It was the job of later theorists such as Hartmann (1958) to extend and expand Freud's ego psychology and straighten out its inconsistencies, and Anna Freud (1966) and Bellak, Hurvich, and Gediman (1973) to outline the details of the ego's functions.

Hartmann, expanding on Freud's theorizing, added several concepts of great importance to psychoanalytic ego psychology. Unlike Freud, who was most interested in the ego's role as intersystem mediator, Hartmann emphasized the ego's role in adaptation, both alloplastic and autoplasic, to the environment. In Ego Psychology and the Problem of Adaption (1958) he stated:

We will clarify matters if we assume that adaptation (speaking now mainly about man) is guaranteed in both its grosser and finer aspects, on the one hand by man's primary equipment and the maturation of his apparatuses, and on the other hand by those ego-regulated actions which (using this equipment) counteract the disturbances in and actively improve the person's relationship to the environment (pp. 24-25).

Hartmann also expanded Freud's thinking regarding the development and functioning of the ego. Although Freud discussed the ego's role in such activities as motility and perception, he emphasized the

importance of conflict on the development of the ego and its use of all its apparatuses within the context of drive and defense.

Hartmann, seeing adaptation as having implications beyond Freud's ideas regarding the ego's synthetic applications, expanded this aspect of ego theory to include the conflict-free functioning of some of the ego's apparatuses and their development outside the arena of conflict. Emphasizing this point, Hartmann stated that:

Not every adaptation to the environment, or every learning and maturation process, is a conflict. I refer to the development outside of conflict of perception, intention, object comprehension, thinking, language, recall-phenomena, productivity, to the well-known phases of motor development, grasping, crawling, walking, and to the motivation and learning processes implicit in all these and many others (p. 8).

A great deal of both theoretical and experimental work has also been done in the area of delineating the actual functions of the ego. Various psychoanalytic writers have published lists of functions with varying degrees of specificity and length. A representative offering was proposed by Bellak, et al. (1973) which is based on previous work by themselves, as well as other authors, and which outlines 12 areas of functioning that are overseen by the ego along with lists of actual functions within each area. This list, although not exhaustive, is fairly typical of current analytic thinking regarding the functions of the ego. The areas proposed by Bellak, et al. are as follows:

1. Reality testing
2. Judgment
3. Sense of reality of the world and the self
4. Regulation of control of drives, affects, and impulses
5. Object relations
6. Thought processes
7. Adaptive regression in service of the ego
8. Defensive functioning
9. Stimulus barrier

10. Autonomous functioning
11. Synthetic-integrative functioning
12. Mastery-competence

The Loevinger Ego Construct

A second model of ego development that has received a lot of recent attention was proposed by Jane Loevinger (1966). Drawing on theoreticians such as Sullivan, Peck, Isaacs, Piaget, and Kohlberg (Loevinger, 1966), she rejects the psychoanalytic concept of the ego as a collection of mental tools. Instead, she sees the ego "above all, as a process, not a thing" (Loevinger, 1969, p. 85). Loevinger does not see the ego as being one personality dimension among many, but describes it as the "master trait" (Loevinger, 1966, p. 205). In describing the ego, she stated that "concept formation, the search for meaning, the striving for self-consistency" (Loevinger, 1979, p. 4) are its essence, and that ego development "encompasses the complexity of moral judgment, the nature of interpersonal relations, and the framework within which one perceives oneself and others as people" (p. 3). As the ego develops, changes take place in the "complexly interwoven fabric of impulse control, character, interpersonal relations, conscious preoccupations, and cognitive complexity, among other things" (Loevinger, 1976, p. 26).

As can be seen from the above quotations, Loevinger's ego is a global abstraction that encompasses all of a person's mental life. In her scheme, the ego can be thought of as one's frame of reference through which he understands himself and his world. Since to her, thought and action are based on one's understanding of their world,

the ego mediates all intercourse with the environment. Loevinger does not directly define the ego, stating that trying to define it is like trying to define life (Loevinger, 1969). Instead, she operationally describes seven stages of ego development in terms of impulse control, character development, interpersonal style, conscious preoccupations, and cognitive style, and states that what she means by "ego" is to "simply point to the stages of ego development" (Loevinger, 1979, p. 3) and see what is occurring within the person as they move from stage to stage.

Like Kohlberg and Piaget, Loevinger believes that her stages of ego development are arranged in a hierarchical fashion with each stage being qualitatively, rather than quantitatively, different from the others. Development is seen as preceeding in an invariant sequence through the levels with each stage building upon and incorporating the ones below it. Development occurs as a result of both maturation and experience, and, in general, is characterized by increasing differentiation, complexity, and flexibility in one's understanding of self and others. Unlike the analytic model where higher levels of ego functioning equal more effective adjustment, Loevinger feels that there can be well-adjusted people at all stages (Loevinger & Wessler, 1970). Thus, her model is not based on psychopathology, but rather, on the qualitatively different ways that people understand and give meaning to their existence. Borrowing from Sullivan, Loevinger believes that "the ego maintains its stability, its identity, and its coherence by selectively gating out observations inconsistent with its current state" (Loevinger & Wessler, 1970, p. 8).

Loevinger describes her seven stages as follows:

The first stage in ego development can be called presocial; it is the period in which the ego comes into existence. This stage begins with a normal autistic period, then moves to a symbiotic period. The central problem is the delineation of self as opposed to nonself.

The next stage can be called impulsive. In this stage, the child is preoccupied with his own wishes and impulses, which serve to consolidate and affirm his sense of self. In this stage, too, he depends on the environment for control. The central problem can be stated as impulse versus control.

The next stage we call self-protective. The child is preoccupied with safeguarding himself against inner and outer dangers. One task is to gain control over his own impulses, postponing gratification when it is expedient to do so. Thus, one central issue is vulnerability versus security. Another central issue, perhaps developing a little later, is that of domination versus submission in relation to others. As the child gains control over his own impulses to the extent of being able to tolerate temporary delays, he becomes less vulnerable and more secure. He is at the same time submitting to the control of others and at times making himself feel secure by dominating others.

The next stage is usually called conformist. Here the child has resolved the problems of self-protection and the problem of domination-submission by identifying himself with authority, at first his parents, later school authorities, and ultimately civic authority. Thus, he submits to authority's rules, but, by identifying himself with the controlling powers, he shares in their domination. The conformist stage is reached by most but by no means all children. Evolution beyond this stage is more problematic, with diminishing numbers ever reaching successively higher stages.

The following stage we call conscientious. Internalization of rules has proceeded further to include self-administration of sanctions, self-evaluation, and self-selection of the rules to be followed. Ideals having reference to a wider social unit than one's immediate family are characteristic. The obligation to conform to rules, regardless of consequences, is ultimately replaced by an obligation to consider the consequences of one's actions for others. Interpersonal relations move beyond cooperation and reciprocity to a deeper mutuality.

The small child begins by depending entirely on the environment for control of his conduct. As he moves along the scale of ego development, he learns to control his own behavior in response to sanctions: at first to the sanctions of overt punishment and reward, later to the attenuated reward and punishment of approval and disapproval, and finally to the internalized rewards and punishments of guilt.

and self-respect. Although none of these sanctions ever become totally ineffective, external sanctions become progressively less necessary for the achievement of good conduct, and also progressively less efficacious. At the highest ego levels, which we call autonomous and integrated, we find a relatively small number of people who have mature consciences that are relatively free of guilt and of moral condemnation, able to tolerate moral ambiguity, and capable of a disinterested balancing of their own welfare with that of others (Loevinger, 1976, pp. 289-290).

In addition to these seven stages, Loevinger has also empirically found transitional stages between the self-protective and conformist (Δ /3), the conformist and the conscientious (3/4), and the conscientious and the autonomous levels (4/5). Although she does not describe these transitional stages in detail as she did the others, Loevinger stated that they have aspects of both the stage above and the one below (Loevinger & Wessler, 1970).

The following table (Table 1) provides a description of the major developmental milestones in different areas at each stage.

TABLE 1
SOME MILESTONES OF EGO DEVELOPMENT

Stage	Code	Impulse Control, Character Development	Interpersonal Style	Conscious Preoccupations	Cognitive Style
Presocial	I-1		Autistic		
Symbiotic	I-2	Impulsive, fear of retaliation	Symbiotic Receiving, depen- dent, exploita- tive	Self vs. non-self Bodily feelings, especially sexual and aggressive	Stereotyping, con- ceptual confusion
Self-Protective	△	Fear of being caught, exter- nalizing blame, opportunistic	Wary, manipulative, exploitative	Self-protection, trouble, wishes, things, advan- tage, control	
Conformist	I-3	Conformity to ex- ternal rules, shame, guilt for breaking rules	Belonging, super- ficial niceness	Appearance, social acceptability, banal feelings, behavior	Conceptual simplic- ity, stereotypes, cliches
Conscientious- Conformist	I-3/4	Differentiation of norms, goals	Aware of self in relation to group, helping	Adjustment, prob- lems, reasons, opportunities (vague)	Multiplicity
Conscientious	I-4	Self-evaluated standards, self- criticism, guilt for consequences longterm goals and ideals	Intensive, respon- sible, mutual, concern for com- munication	Differentiated feelings, motives for behavior, self-respect, achievements, traits, expres- sion	Conceptual complex- ity, idea of pat- ternning

TABLE 1 (Continued)

Stage	Code	Impulse Control, Character Development	Interpersonal Style	Conscious Preoccupations	Cognitive Style
Individualistic	I-4/5	<u>Add</u> : Respect for individuality	<u>Add</u> : Dependence as an emotional problem	<u>Add</u> : Development, social problems, differentiation of inner life from outer	<u>Add</u> : Distinction of process and out- come
Autonomous	I-5	<u>Add</u> : Coping with conflicting inner needs, toleration	<u>Add</u> : Respect for autonomy, inter- dependence	Vividly conveyed feelings, inte- gration of phys- iological and psychological, psychological causation of be- havior, role con- ception, self- fulfillment, self in social context	Increased conceptu- al complexity, patterns, toler- ation for ambigu- ity, broad scope, objectivity
Integrated	I-6	<u>Add</u> : Reconciling inner conflicts, renunciation of unattainable	<u>Add</u> : Cherishing of individuality	<u>Add</u> : Identity	

Note: "Add" means in addition to the description applying to the previous level.

(From Loevinger, 1976, pp. 24-25).

As was discussed above, the construct ego is used within these different theoretical school of thought. They differ, however, in the inclusiveness of functions subsumed under this construct.

Psychoanalytic theorists define ego as a cognitive structure which mediates such functions as perception, cognition, motility, memory, reality testing, object relations, and the regulation of affects and instincts. Jane Loevinger also defines ego in cognitive terms, but is less inclusive than psychoanalysts in her conceptualization of mediated functions. In her model, functions subsumed under the construct ego include impulse control, character development, interpersonal relations, conscious preoccupations, and cognitive style. These two models of ego are similar in that both constructs subsume aspects of cognition, delay in the gratification of conscious wishes, and social relations, but are dissimilar in that the analytic ego is uniquely assumed to mediate aspects of adaptive functioning and the regulation of affective and instinctual demands, while Loevinger's ego is uniquely assumed to mediate character style and the content on consciousness. Thus, the ego constructs of the two models have areas of conceptual similarity, as well as areas of conceptual dissimilarity. A comparison of the two models can be accomplished by comparing tests that have been designed to measure each model's ego construct. In this way it can be seen if a pattern of shared variance among the tests parallels that which is predicted by the conceptual comparison presented above.

The next section of this chapter will describe and examine testing instruments that have been developed to measure both model's

ego constructs. Research pertinent to their adequacy for measuring the ego constructs will also be reviewed.

The Washington University Sentence Completion Test

From the Loevinger model, a test, the Washington University Sentence Completion Test, has been developed (Loevinger & Wessler, 1970) that purports to assess a person's current level of ego development. The test consists of 36 sentence stems whose completions are rated using a scoring manual (Loevinger, Wessler, & Redmore, 1970) and assigned an ego development stage score. Once all 36 completions have been rated, either a total protocol rating (TPR) is established using frequency distribution rules empirically established by Loevinger, or a numerical value is assigned to each completion based on the ego level scores and these are then summed to produce an item sum score (ISS). The test was originally developed using adult females, but was later extended, with some changes, to include adult males and children of both sexes (Loevinger, 1977). An additional scoring manual (Redmore, Loevinger, & Tamashiro, 1978) was also developed to provide appropriate scoring examples for these groups.

As with any subjectively scored test, the issue is raised regarding how reliably can scores be assigned (interrater reliability). Several studies conducted by Loevinger and Wessler (1970) have addressed this issue using a total of 543 protocols from subjects ranging in age from 12 to 70. The median interrater agreement on TPR's for five raters training by Loevinger was 61 percent and the median interrater correlation was .86. Utilizing 100 protocols, these

five raters were compared with two raters who were self-trained using exercises in Loevinger's manual. The median percentage agreement on TPR's between professionally and self-trained raters was .76. Other studies (Deitch & Jones, 1983; Sutton & Swensen, 1983; and Holt, 1980) have reported similar findings for interrater agreement on TPR's and ISS's, using both self-trained and professionally-trained raters with widely divergent samples. From the above studies it can be concluded that the WUSCT can be reliably scored by self-trained raters alone.

Redmore and Waldman (1975) conducted two studies that investigated the reliability of the WUSCT itself using three different measures: test-retest, split-half, and internal consistency. Test-retest correlations, using a one-week interval, were .70 for TPR's and .91 for ISS's. When a two-week interval was used, the correlations were .49 and .64, respectively. Split-half correlations ranged from .68 to .90 depending on whether no time interval or a one-week interval was used. Internal consistency coefficients ranged between .80 and .89. These figures are comparable to those reported by Loevinger and Wessler (1970). Two recent publications provide test-retest data using a four and one-half year (Redmore, 1983) and a one year (Adams & Fitch, 1982) interval between tests. In two separate studies, Redmore obtained correlation coefficients for TPR's of .49 using a four and one half year interval and .39 using a four year interval. Adams and Fitch, found that 61 percent of his 148 subjects displayed no change in their TPR over a one year period. From the above studies, it can be concluded that the WUSCT is a reasonably reliable instrument.

It any test requiring reading and writing, the required levels of these skills should be known. A study conducted by McCammon (1981) found that no significant differences existed between the WUSCT data obtained using written versus oral forms as long as the subject possessed the reading and writing skills of an average sixth grader.

When evaluating any test where the social desirability of responses may be a motivational factor, its susceptibility to faking should be investigated. A study by Redmore (1970) reports results that suggest that attempts to fake a higher score on the WUSCT produces either no result or a slightly lower score, but that efforts to fake a lower score are successful. These results imply that the WUSCT is fairly resistant to faking in a socially desirable direction.

Since its publication, the WUSCT has generated a great deal of research designed to validate it as a measure of ego development. In a comprehensive review of this literature covering all the studies up to 1976, Hauser (1976) divided the studies along lines of the type of validity they investigated: discriminant, predictive, or construct. The discriminant validity studies reviewed dealt with the question of whether the WUSCT was in fact a measure of IQ or verbal fluency. In relation to IQ, Hauser concluded that the available evidence supported Loevinger's claim that ego development and IQ are, in fact, different concepts. There were, however, inconsistent findings which varied from no significant correlations to moderate significant correlations between WUSCT and IQ scores, which Hauser felt may indicate a complex interaction between IQ and ego level. Regardless of the nature of the relationship, IQ and WUSCT scores covary enough to warrant controlling

for IQ in future studies. Loevinger argued that verbal fluency and WUSCT scores should covary somewhat due to the fact, in her conceptualization, that conceptual complexity is part of the ego construct. In Hauser's review he concluded that while there was some correlation between WUSCT scores and verbal fluency, the evidence again supported the divergence of these two variables. He noted, however, that verbal fluency was less correlated with TPR's than iSS's, and that the covariance of the two variables could be minimized by using the TPR as the summary statistic.

In relation to predictive validity, Hauser argued that Loevinger's model does not make specific behavioral predictions based on her stages. Although no single behavior is hypothesized as the "hallmark" of a stage, character styles are described which allow for some empirical predictions of behavior patterns. Such predictions are, however, part of the construct of the ego and hence, studies that have investigated these areas were reviewed under the rubric of construct validation.

In the area of construct validity, Hauser concluded that although some tested aspects of Loevinger's model have produced inconclusive results, other aspects were supported. Hauser stated that, as of 1976, there was "meager support" for the hypotheses that "the stages of ego development have an invariant order (due to a lack of longitudinal studies) and that the stages correspond to a range of character types, each with a structural coherence of diverse personality dimensions" (p. 952). Studies that made predictions of linear relationships between WUSCT scores and other variables were

also found to produce inconclusive results. Hauser did conclude, however, that positive results were found in studies that predicted nonmonotomic relationships between WUSCT scores and other variables such as social desirability, attitudes toward women, and conformity. He felt that in these studies, data were reported regarding the saliency of particular dimensions at specific stages which differentiated these stages from others in the sequence, often in a curvilinear manner. Such data provides significant support for Loevinger's hypotheses regarding the conceptual and behavioral patterns particular to each stage. Although Hauser felt that, taken as a whole, the studies left many unanswered questions regarding the validity of the WUSCT, he did feel that enough positive support was proved to warrant continued use of the WUSCT as a measure of ego development.

Studies published since the Hauser article have tended to focus on four major areas of enquiry. One of these areas is how the WUSCT correlates with various measures of psychopathology, differentiates among pathological groups, and predicts therapy outcome. Gold (1980) gave MMPI's and WUSCT's to 150 adolescents and found that subjects at pre-Conformist levels displayed significantly more pathology than subjects either at Conformist or post-Conformist levels. It was also found that pre-Conformists scored highest on the hypocondriasis scale; Conformists scored highest on the hysteria, depression, and K scales; and post-Conformists ranked highest on the psychoathenia and paranoia scales. In another study of this type, Noam, Hauser, Santostefano, Garrison, Jacobson, Powers, and Mead (1984), compared the WUSCT scores

of 114 hospitalized adolescents with their scores on Achenbach and Edelbroch's Child Behavior Checklist (CBCL). They found moderate, but significant, negative correlations between the WUSCT and CBCL measures of total symptoms, externalizing symptomatic behavior, and internalizing symptomatic behavior. Two studies investigated the relationship between the WUSCT and different types of pathology. Vincent and Castillo (1984) gave WUSCT's to 400 psychiatric patients and compared their scores with their DMS-III ASIX II diagnoses. It was found that the majority of patients who received an "emotional and erratic" personality disorder diagnosis (histrionic, narcissistic, antisocial, or borderline) had WUSCT scores below the Conformist level. Additionally, it was found that their psychiatric sample was devoid of individuals at the highest levels of ego development. Shestowsky (1983) found that among her sample of 30 adolescent females, ego stage scores differentiated puberty-onset obesity subjects (lower scores) from childhood-onset obesity subjects and normal weight (higher scores) subjects. Studying the outcome of psychotherapy and chemotherapy with 86 female phobics, Rock and Goldberger (1981) found that subjects at pre-Conformist stages showed less overall improvement than subjects at or above the Conformists level and that post-Conformist subjects reported the least benefit from chemotherapy. Taken as a whole, these studies imply that persons with ego stage scores below the Conformist level are liable to display more symptomatic behavior, be more unstable, and in general, be less adapted to their environment than people at or above the Conformist level. Additionally, the WUSCT does appear able to differentiate

between some psychiatric groups implying that people at different stages of ego development develop different clusters of symptoms.

A second major area of enquiry pursued by post-Hauserian researchrs has been to test stage-specific predictions along a number of behavioral and cognitive dimensions. Two such studies examined impulsivity and WUSCT scores. One (Starrett, 1983) correlated the WUSCT scores of 163 adolescents with their socres on four measures of impulsivity from the Eysenck Personality Questionnaire. It was found that two of the measures, Narrow Impulsivity and Risk-Taking negatively correlated with WUSCT scores, but only for the lower ego development levels. The author concluded that the greater impulsivity associated with the lower ego levels was best characterized as an "unsocialized aspect," which is similar to Loevinger's theoretical description of what is characteristic for subjects at these levels. In a more behavioral study, Frank and Quinlan (1976) compared the WUSCT scores and problem behaviors of 66 female adolescents, of whom 26 were delinquent and 44 were not. The authors found that delinquent girls fell at lower ego levels than nondelinquents when their scores were covaired for intelligence, with delinquents being more likely to be at the Impulsive stage (I-2) and nondelinquents more likely to be above the Self-Protective stage (Δ). In addition, it was found that the frequency of several impulse control related behaviors were significantly negatively correlated with ego stage at the lower end of the ego development scale behaviors--such as fighting, running away, promiscuity, homosexuality, and alcohol abuse. Another behavioral study (Hoppe & Loevinger, 1977) predicted a curvilinear relationship

between conforming attitudes and behaviors, and ego development level with the most conformity being displayed by subjects at the Conformist (I-3) stage. Using 107 adolescents, the authors' hypothesis was supported with conformity, as measured by a self-report scale, peer ratings, behavior in an experimental situation, and number of school demerits being greatest for subjects whose ego levels were between the Self-Protective (Δ) and Conscientious (I-4) stages even when IQ was held constant. In a study of ego level and empathy (Carlozzi, Gaa, & Lieberman, 1983), the authors gave 51 college students both the WUSCT and the Affective Sensitivity Scale. They found that subjects who scored at the I-3/4 level and higher on the WUSCT had significantly higher empathy scores than those at I-3 and lower. Roots, Moras, & Gordon (1980), investigating the hypothesis that subjects at higher ego levels would be more socially mature, gave 60 college sorority women the WUSCT and had them rate each other on readiness to engage in various social roles. The findings indicated that women at higher ego levels were perceived by their peers as being more ready to enter roles involving careers and community involvement than those with lower level scores, but not more ready to enter marital or parental roles. Two studies investigated aspects of cognition and ego development. In one (Ginsburg & Orlofsky, 1981), the authors, investigating locus of control and ego development in 75 college women, concluded that subjects who ranked in the higher ego development stages had a greater ability to examine and cope with complex problems than did those at lower levels. In the other, Candee (1974) found that among his sample of 76 college juniors those subjects at the different stages of ego

development conceptualized their political philosophies differently. Subjects at lower levels tended to emphasize emotional issues and those that benefited small groups or individuals. Those at middle levels tended to stress intellectual understanding rather than affective impressions, but viewed politics in terms of its immediate limited effects. Subjects at the higher levels tended to stress explanation, unifying principles, and the development of humanity as a whole. From the above studies it can be concluded that some support has been shown for Loevinger's characterization of lower ego stages as being impulsive, egocentric, and affect oriented; middle stages as being oriented toward conformity; and higher stages as being more mature, better able to cope with complexity, and more cognitively flexible.

A third focus of research on the WUSCT has been on the theoretical structure of Loevinger's model. Three such studies have investigated the hypothesis of progressive invariant change in ego development. In one longitudinal study (Redmore & Loevinger, 1979), the author tested 193 children and adolescents and retested them one or two times using intervals ranging from one and one half to six years. The authors concluded that both the positive retest correlations and the positive direction of the change scores supported the hypothesized sequence of ego development. An additional finding was that both IQ and SES correlated significantly with WUSCT scores, and that IQ and SES were highly correlated with each other. Analysis of these data revealed that once IQ was controlled for, the correlation between SES and WUSCT scores became insignificant,

implying that controlling IQ alone in future research is sufficient. In a second longitudinal study (Redmore, 1983) the author used college age subjects in an attempt to extend the results of the first study. Ninety-seven college students were given the WUSCT and retested either four or four and one half years later. The author found that the retest scores were significantly correlated with the initial scores and that they were typically a half-stage higher. It was concluded that support was provided for the hypothesis that ego growth occurs according to a fixed sequence of stages and that the rate of growth decreases with age. The third study (Adams & Fitch, 1982), also longitudinal in design, tested 148 college freshman using the WUSCT and retested them a year later. The findings of this study were consistent with those reported in the above two studies. When examined together, these studies tend to support Loevinger's hypotheses regarding the direction and nature of ego development.

The fourth area that has received some attention from researchers has been that of how the WUSCT relates to other tests of various personality dimensions. One recent study correlated the WUSCT with a measure of moral development (Lieberman, Gaa, & Frankiewicz, 1983), and a second correlated the WUSCT with a measure of moral development as well as a test derived from conceptual systems theory (Lutwak, 1984). In the first study, a significant positive, nonlinear correlation was found between ego development and moral development, and in the second study, significant positive correlations were obtained between all three tests. Lutwak, using partial correlational analysis, concluded that, although his three tests were correlated, they did not represent

redundent systems. In a study conducted by Sutton and Swensen (1983), TAT cards, interviews, and the WUSCT were given to 70 subjects of various ages, with all three measures being scored using Loevinger's scoring procedures. Correlations among the three instruments ranged from .79 to .89, and the authors concluded that ego development level, following Loevinger's model, can be obtained from interviews or fantasy material. The above three studies help to provide support for the independence of the ego development construct from other closely allied constructs, and imply that Loevinger's method of scoring verbal behavior has some generalizability across modalities.

From the above research on the WUSCT, several conclusions can be drawn. First, the WUSCT itself appears to be an adequately reliable test and can be reliably scored by self-trained raters. The validity research provides a good deal of support for Loevinger's model and has demonstrated that the WUSCT measures a dimension of personality that has stability, is reasonably independent of other personality factors, and has many behavioral and cognitive correlates. Enough support has been provided by the research, it appears, to warrant using the WUSCT as a measure of ego development.

From the analytic model, two measuring instruments have been developed that purport to measure ego functioning. One of these, the Barron Ego Strength Scale, was designed to provide a unitary, quantitative measure of a person's ego strength, while the other, the Rorschach technique, can be used to quantitatively measure several aspects of ego functioning at once. The Barron will be discussed first.

The Barron Ego Strength Scale

The Barron Ego Strength Scale (Barron, 1953) is an objectively scored paper and pencil test made up of 68 items (statements) from the Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1940) which subjects answer as being either true or false as applied to themselves. The scale was originally designed to assess the potential to benefit from psychotherapy and was found by Barron to successfully differentiate patients who did and did not improve with treatment. He concluded that the scale measures the latent ego strength, the latent integrating and synthesizing resources, available to a person which can be developed via the psychotherapeutic process.

Barron (1956) reported that the odd-even reliability of the scale was .76 and its test-retest reliability was .71 using a three month interval between tests. Given that the full MMPI has 566 items, and that only 68 of these comprise the Barron, it would be efficient to administer just the Barron items to subjects. Silverman (1963), using a test-retest format, gave groups of normals and schizophrenics either the full MMPI or just the 68 Barron items. He found that test-retest correlations ranged between .85 and .91 for the Barron regardless of whether it was administered within the context of the MMPI or alone. In another test-retest study, Gaines and Fretz (1969) administered just the Barron items to groups of college freshmen using a two month interval and obtained correlations ranging from .75 to .81. These scores are comparable to those reported by Barron for the scale when administered within the context of the MMPI. Glass (1984) gave just

the Barron or the full MMPI to randomly selected groups of college students and found that the means and standard deviations of the Barron scale did not significantly differ regardless of means of administration. From these studies it can be concluded that not only is the Barron scale a satisfactorily reliable measure, but that it can safely be administered by itself.

Validity studies of the Barron have produced some inconsistent results. Some studies have found that patients with higher pretreatment Barron improve more in psychotherapy than do patients with lower pretreatment Barron scores (Wirt, 1955, 1956). Other studies, however, have found that change in treatment is unrelated to pretreatment Barron Scores (Ends & Page, 1957; Fowler, Teel, & Coyle 1967; Getter & Sundland, 1962; and Sullivan, Miller, & Smeiser, 1958). May and Tuma (1964) found that pretreatment Barron scores predicted outcome of hospitalization for male psychiatric patients, but not for female patients. Summett (1962), also obtained ambiguous results. It should be noted, however, that most of the studies reporting negative findings did not accurately replicate Barron's original study in that they did not use psychotherapy as a treatment, but hospitalization. Dahlstrom, Welsh, and Dahlstrom (1975) tried to explain the conflicting findings by hypothesizing that Barron scores do predict therapy outcome for persons who are willing to admit to and seek help for their problems, but do not for persons who, although having significant problems, attempt to deny them.

Several studies using the Barron scale have found that it is able to differentiate normals from non-normals (Quay, 1955; Taft, 1957;

Gottesman, 1959), differentiate those who display patterns of psychopathology from those who do not (Himelstein, 1964), and discriminate among levels of psychopathology (Spiegel, 1969). In a comprehensive review of the literature, Frank (1967) concluded that the Barron scale could best be thought of as a measure of the absence of psychopathology.

Studies have also been conducted that investigate other aspects of ego functioning besides therapy outcome and psychopathology. Jones and Medvene (1975) found high Barron subjects to be more self-actualized following marathon group experiences than low Barron subjects. Hunter and Goodstein (1967) found that high Barron subjects were judged as less defensive by raters and had better capabilities for logical analysis, and that low Barron subjects were rated as being more defensive, used more rationalization, and were less able to logically analyze problems. The Barron was found to correlate positively with a Rorschach measure of body boundaries and was able to differentiate between groups of medical patients (lower Barron scores) and medical treatment staff (higher Barron scores) (Wolman & Kepecs, 1969). Martin, Stokes, and Ayers (1978) found that the Barron scale was negatively correlated with a measure of dogmatism. Harmon (1980) compared the Barron scale with several multiscale personality inventories and obtained a pattern of correlations that led her to conclude that the Barron is, in part, a measure of belief in self-adequacy as well as tolerant, balanced attitudes.

From the above studies it can be concluded that although the usefulness of the Barron scale as a predictor of psychotherapy outcome

may be questionable, it does provide a global measure of several aspects of ego functioning. The scale appears to assess aspects of cognitive and personality flexibility, self-acceptance, and the absence of severe psychopathology. The reason for the mixed positive and negative findings for the Barron may be due to its short length and the fact that it is a self-report measure and not a sample of actual adaptive behavior. In spite of these limitations, the Barron does empirically appear to provide a useful, reliable, and valid measure of some functions of the ego.

The Rorschach Technique

A different approach to assessing ego functioning is used by the Rorschach Technique (Rorschach, 1921). The Rorschach attempts to sample the ego's functioning via verbal reports of fantasies stimulated by relatively unstructured and unfamiliar visual material. During the task, the subject is shown five achromatic and five chromatic inkblots that are sequentially presented in a particular order, and is asked to report everything that the blots look like. This procedure illuminates ego functioning because, supposedly, many ego processes are involved in generating and communicating the responses. Rappaport, Gill, and Schafer (1968) describes three phases in the generation of a Rorschach response:

In the first phase, the salient perceptual features of the blot initiate the associative process; in the second, this process pushes behind these partial perceptual impressions and affects a more-or-less intensive organization of the inkblot; in the third, the perceptual potentialities and limitations of the inkblot act as a regulating reality for the associative process itself (p. 276).

Thus, aspects of perception, cognition, and reality testing are involved in response production. Additionally, it is felt (Frank, 1939) that subjects will reveal, via their responses to ambiguous stimuli, important aspects of their personality structure and unconscious processes. Such areas, then, as defensive functioning, object relations, and psychosexual drives can also be examined.

To fully utilize this wealth of information about a person and to make meaningful quantitative and qualitative comparisons to normative groups, some means must be used to organize and quantify a subject's Rorschach record. Many such scoring systems have been developed, each somewhat different from the others. Despite their differences, they all take into account five major aspects of a subject's response: what part of the blot was used (location), how was it used (organization), what aspects of the blot helped the person bring the response to mind (determinants), what was seen (content), and what, if any, cognitive/perceptual characteristics were salient in the response (fifth column). In addition to these comprehensive scoring systems, supplementary scoring methods have been developed that examine specific areas of psychological functioning such as object relations (Blatt, Brennis, & Schimek, 1976) and defensive functioning (Holt, 1962, 1966, 1977).

Recently Burstein and Loucks (1985) have developed a comprehensive scoring system that not only rectifies some of the logical inconsistencies present in previous systems, but extends the usefulness of Rorschach scoring by incorporating the work of Blatt and Holt. In addition to the five major areas of response analysis

mentioned above, the Burstein-Loucks system provides scores for the presence and developmental level of psychosexual drive material, as well as for the effectiveness of the defenses against these drive derivatives. The system also incorporates Blatt's work by providing scores for the degree of articulation of perceived humans, the degree of articulation of their movements or emotions, and the motivational valuation of their acts. By examining these and other scores provided by the system, a large array of the ego's functions can be assessed as to strength and effectiveness.

Like any subjectively scored test, questions regarding the consistency of ratings and the stability of the scores arise when using the Rorschach. An overview of these reliability concerns was presented by Exner (1978). This review of available research found mixed results: different studies (Vernon, 1933; Hertz, 1934; Ford, 1946; and Orange, 1953) reported split-half reliabilities that ranged from very low to very high depending upon method used (every other response versus every other card). Temporal consistency (test-retest) studies were also conducted (Ford, 1946; Kerr, 1936; Holtzberg & Wexler, 1950; and Kelly, Margulies, & Barrera, 1941) which yielded somewhat consistent and encouraging results. The obtained coefficients tended to be significant and reasonably high, except when using young children (Kerr), whose discrepant results can be accounted for by maturational processes over the one year period between tests. Although it can be claimed that memory may account for the magnitude of the test-retest correlations, a study (Kelly, et al.) using patients retested after receiving electroconvulsive shock therapy

which produced total amnesia for the first testing found correlations between tests similar to those found by other authors.

Exner, Leura, Armbruster, and Viglione (1977), feeling that temporal consistency was the more important measure of Rorschach reliability, designed a carefully controlled study to test the stability of Rorschach scores over a three year period. One hundred subjects (ages 24-44) were selected on the basis of their having no diagnosed psychiatric condition and not being rated by a "significant other" as having any significant psychological symptoms. Correlations among test and retest scores for a variety of variables ranged between .66 and .90. In addition, the authors found that the lower correlations occurred on scores that theory predicts would be most affected by situational variables, and that the highest correlations were obtained from scores that theory suggests reflect invariant personality factors.

Interrater reliabilites are frequently reported in studies utilizing the Rorschach. Although different scoring systems were employed to quantify the actual responses, several representative studies obtained similar results of the level of agreement among independent scorers. Blatt and Berman (1984) found coefficients ranging between .69 and .97 with a mean of .86, Glatt and Karon (1974) obtained correlatins of from .82 to .87, and data from a study by Curtis, Feczko, and Marohn (1979), yielded coefficients of .72 to .98. Although these scores are reasonably high, they probably underestimate the actual level of interrater agreement. In any scoring system, each individual response is only assigned a small subset of all possible

scores that could be assigned to it because the subject does not display all possible aspects of cognitive/perceptual functioning on each response. Interrater reliability scores are typically computed on the basis of only those scores actually assigned a response, not on the many more possible scores not assigned. When the agreed upon exclusion of scores is taken into account along with the agreed upon inclusion of scores, a much higher degree of agreement would be obtained.

Based on the above studies, it can be concluded that as a test, the Rorschach produces indices that are reasonably stable over time and that can be scored in a reliable manner by independent raters. More important, however, is the question of whether any of the measures generated by the Rorschach actually assess aspects of ego functioning.

Since its inception, the Rorschach has generated a great deal of theoretical writing, as well as research, that explores the use of the instrument in assessing ego functioning. Some recent theoretical work has focused on understanding object relations via Rorschach precepts (Spear & Hymowitz, 1982) and describing the defensive operations of borderlines as they are manifested within their Rorschach protocols (Grala, 1980). The Rorschach has also been used in conjunction with case presentations to help document underlying personality (ego) change using a test-retest format (Lerner, 1983). The bulk of research, however, has focused on testing hypotheses regarding the relationship between individual Rorschach scores and either measurable behavioral manifestations of the ego's functioning, or performance on

other measures that are known to assess some aspect of "ego." Areas that have been researched include white space responses, reactivity to color, the exclusive use of form as a determinant, perceptual/cognitive abnormalities, organizational activity, psychosexual drive derivatives and their associated defenses, and the object relational aspects of human percepts.

Investigating the use of white spaces, Martin, Kinster, & Pfaaot (1983) found no relationship between it and ego strength as measured by the Barron Ego Strength Scale.

Two studies researched the perception of human movement in the blots (M). Weiss, Stein, Ajar, & Melnik (1967) found that M is one of a "cluster" of Rorschach variables that reflect the ego's ability to control impulse discharge, and Nickerson (1969) found that M correlates positively with verbal intelligence, theoretical interests, and the use of kinesthetic imagery.

Work has also been done investigating the relationship between reactivity to the chromatic aspects of the blots and the ego's ability to delay. Curtis, et al. (1979) found that delinquents had higher Affective Ratios (the number of responses on the polychromatic cards divided by the number of responses on the other cards) than nondelinquents. Gill (1966), using a problem solving task, found that those subjects who were able to delay responding to the problems gave color responses that were usually well modulated by cognitive processes (FC), while subjects who were unable to exercise delay typically gave color responses that were less well modulated (CF and C).

Several studies have been conducted that examine the use of form (F) as a determinant. Glatt and Karon (1974) found that the percentage of socially appropriate pure form responses (F+%) was positively correlated with hospitalized schizophrenics' behavior repeatedly rated for regressive and adaptive aspects. Singer and Larson (1981) discovered that the magnitude of the F+% correctly classified normal, neurotic, borderline, and schizophrenic subjects with normals having the highest and schizophrenics having the lowest. The F+% was also found to correlate positively with mental age (Apple, 1982) and was felt by the author to reflect a person's ability to delay impulses and perceive logical relationships. In a review of the literature relating form level to ego strength, Frank (1979) concluded that the F+% is one of the best measures "sensitive to the nuances of ego strength" (p. 201).

Several studies have investigated the perceptual/cognitive characteristics (fifth column) of various clinical groups. In a theoretical article, Smith (1983) proposed that persons who displayed a major breakdown in adaptive ego functioning (psychotics) will manifest their problems with the maintenance of self-other boundaries by producing Rorschach responses characterized by contaminations, fabulized combinations, and incongruous combinations. In support of this hypothesis, Sugarman, Quinlan, and Devenis (1982) found that contamination responses differentiated anorexics from normals, and Gol (1982) found that the following "unusual" perceptual/cognitive characteristics differentiated groups of transsexuals and psychologically healthy adults: egocentric justification (EJ),

contradiction of reality (CR), deterioration color (DC), fixed concept perseveration (FCP), and transposition responses (TR).

Much of the work on the perceptual/organizational aspects of Rorschach percepts is based on an assumption made by Werner (1948) that psychological development proceeds from a state of globality through states of increasing differentiation, articulation, and integration. A supplemental scoring system developed by Friedman (1953) and extended by Becker (1956) primarily examines form level and how the person makes use of and organizes the blot areas in his percepts. The system, which provides a developmental level score for each Rorschach record, has generated a great deal of research. In a comprehensive review of this literature (Glass, 1983), the author concluded that higher levels of perceptual/organizational activity as measured by the Becker system, are positively correlated with socially adequate functioning, creativity, more adaptive defensive functioning, more adaptive psychological functioning, better adjustment among hospitalized psychiatric patients, and the absence of thought disorder and psychotic symptoms.

Another supplemental Rorschach scoring system was developed by Holt (1962, 1966, 1977) which measures the extent and type of illogical and drive-laden thinking (defense demand) and the effectiveness with which such thinking is integrated into reality oriented responses (defense effectiveness). This system has been used to study such areas as the formation of the conscience (superego), adaptive regression, and the differentiation of psychiatric groups. Benfari and Cologeras (1968) found that primitive ego functioning is

associated with a "punitive and conflictive" conscience. In another study (Dudek & Chamberland-Bougadana, 1982), the authors found that more flexible and adaptive ego functioning, as displayed by more "positive" scores on a number of Holt's variables, successfully discriminated successful from unsuccessful artists. In a study of opiate addicts, Blatt, Berman, Bloom-Feshbach, Sugarman, Wilber, and Kleber (1984) found that several of Holt's variables were able to differentiate between psychotic (schizophrenics) and nonpsychotic (opiate addicts) patients.

A third supplemental scoring system has been developed by Blatt, et al. (1976) which assesses a person's concept of the object on the Rorschach. The system scores human percepts according to developmental principles for differentiation, articulation, and internality in the motivation of action, the degree of integration of the object and its actions, the content of its actions, and the nature of its interaction. In their original study, Blatt, et al. (1976) demonstrated that in normal development there was a significant increase of human percepts on the Rorschach that were well differentiated, integrated, and seen in constructive and reciprocal relationships. The authors also found that for accurately perceived (F+) human percepts, normal subjects showed higher levels of differentiation, articulation, and integration than did psychotics, but for inaccurately perceived (F-) human figures, the psychotics had higher levels than the normals. These findings imply that the psychotics were able to attempt more mature levels of object relations, but only at the expense of adequate reality testing and

conventional thinking. These last findings were replicated by Ritzler, Zambianco, Harder, and Kaskey (1980) who concluded that the Blatt system provided a useful assessment of some areas of ego functioning. Blatt, et al. (1984) also found that some of his variables successfully differentiated psychotic (schizophrenics) from non-psychotic (opiate addicts) patients.

Although more of the literature exploring the utility of the Rorschach as a measure of ego functioning takes a univariate approach, some work has been done that attempts to combine Rorschach variables into clusters, or makes use of a broad array of variables to increase the power of the Rorschach as a diagnostic tool. One such attempt was made by Weiner (1966) who viewed ego functioning as a molar concept and, accordingly, derived a checklist of many ego-disturbance indicators. Using this approach as a model, Axelrod and Kerse1 (1972) abstracted 33 indicators and conceptually grouped them into five categories of ego-disturbance representing major areas of ego functioning. Comparing groups of LSD users with non-users, they found that the LSD groups differed significantly from non-users in the areas of relation to reality and defensive functioning, but not in the areas of object relations or thought processes.

Another attempt to increase the bandwidth of the Rorschach was made by Klopfer, Ainsworth, Klopfer, and Holt (1954) in their development of the Rorschach Prognostic Rating Scale (PRS). This scale provides a single score based on ratings from a broad range of Rorschach variables, and attempts to measure available and potential ego strength in order to predict a patient's response to psychotherapy.

Considerable data exist supporting the validity of the PRS with a wide variety of patients receiving different types of therapy (Newmark, Finkelstein, & Frerking, 1974). Newmark, Walker, Holstein, and Finkelstein (1973) found the PRS to be an efficient predictor of response to psychotherapy. Greenberg (1969) used the PRS to measure the ego strength of foster children as compared to home reared children, and found that the home reared children displayed significantly higher ego strength than the foster children.

From the literature reviewed so far, it can be concluded that Rorschach performance does reflect many aspects of ego functioning. Although a univariate approach to Rorschach scores provides many insights into what functions of the ego are being tapped by different variables, methods that combine variables into clusters appear to hold promise for increasing the power of the Rorschach by summing measures of slightly different aspects of a particular function, and allow for differential assessment of many ego operations at one time.

One method many researchers have used to group Rorschach variables has been factor analysis. Murstein (1960) reviewed 20 factor analytic studies and Blatt and Berman (1984) reviewed the six that had been published since that first review. Feeling that few of the previous factor analytic studies had properly controlled for the number of responses in a record, Blatt and Berman performed their own factor analysis of the Rorschach. Along with the more traditional scores, they included Holt's Defensive operations scoring, Blatt's concept of the object indicies, and a weighted measure based on fifth column scores (thought disorder). Their study identified the

following seven factors: Holt's defense demand, Holt's defense effectiveness, accurately perceived humans, inaccurately perceived humans, weighted experience balance, weighted thought disorder, and form level (F+%). The authors found that none of their seven factors correlated with IQ and that overall ego functioning, as assessed by the Bellak interview, correlated significantly with thought disorder and defense demand. In addition, the authors found that their factors provided some utility in differentiating clinical groups. Overall, the authors concluded that their mathematical/empirical approach to grouping Rorschach scores was useful and that in using it they were able to differentially assess aspects of ego functioning.

Another approach to combining Rorschach scores is to order their groupings along theoretical or conceptual lines. Weiner (1977) argued for such an approach, but Blatt and Berman cautioned that such groupings should take the theory of the Rorschach into account and not be made solely on the basis of personality theory.

In summary, the Rorschach does appear reliably and validly to measure various aspects of ego functioning, and the use of groupings of Rorschach variables appears to offer greater bandwidth for the measurement of these functions. Although some factors have been identified via statistical manipulation, useful groupings of variables should be constructed keeping in mind both personality and testing theory.

Comparisons Among Ego Measures

In the proceeding section, the utility of the WUSCT, the Barron,

and different aspects of the Rorschach as measures of ego development has been discussed. Some previous research has been conducted that provides some insights into the relationships among these measures. Although some of the studies have compared two of the techniques, none of them has examined all three. It should be noted that comparisons among the measures have not been the primary focus of any of these studies.

In three studies, the Barron has been used in conjunction with various aspects of Rorschach scoring systems. On one (Newmark, et al., 1974), 67 neurotic subjects were given both the Barron and the Rorschach scored for the Klopfer Prognostic Rating Scale and then treated in psychotherapy. The results indicated that the PRS was a good predictor of therapy outcome, but not the Barron. Additionally, the PRS and the Barron were not found to significantly correlate (.06 and .23 in two samples). The authors concluded that the two measures were tapping different aspects of personality. A second study (Matin, et al., 1983), also found no significant correlation between white space responses on the Rorschach and the Barron. Some positive results were reported by Wolman and Kepecs (1969) who found that both the Barron and Rorschach, scored for body boundaries, differentiated between hospitalized medical patients and the medical treatment staff with patients having lower Barron and body boundary scores. No direct comparison between the two measures was reported. In two reviews of Rorschach research, Frank (1967, 1979) reported that no significant relationship was found across several studies between the F+% and the Barron.

One study (Gold, 1980) has made use of both the WUSCT and the Barron. In this study, the author gave the WUSCT and the MMPI to 150 high school students. The results showed that subjects at pre-Conformist levels of ego development scored lower on the Barron than did subjects at either Conformist or post-Conformist levels. No differences were found between the latter two groups on the Barron.

In a study which used both the WUSCT and the Rorschach scored according to several scoring systems, the tests were administered to 97 opiate addicts and 229 non-addicts (Blatt & Berman, 1984; Blatt, et al., 1984). As part of the analysis of the data, it was found that the developmental level of accurately perceived humans on the Rorschach and a measure of thought disorder derived from Rorschach fifth column scores both correlated positively and significantly with scores on the WUSCT (.28 and .31, respectively). The authors were unable to explain these findings and called for further research comparing the Rorschach differentially with the WUSCT.

The above studies imply that there is some commonality of domain between the Barron and the WUSCT, and between aspects of the Rorschach and the WUSCT. The nature of these relationships, however, is unclear. Although the previous studies comparing the Rorschach and the Barron have produced mostly negative findings, none of the studies compared more than one variable with the Barron, thus limiting the generalizability of these findings. It is possible that the Barron may tap some of the personality dimensions measured by the Rorschach, but not those tested, which are only a small subset of all possible Rorschach variables. This issue becomes particularly salient in light

of the research reviewed for the Barron that suggests it measures aspects of self-esteem and lack of severe pathology rather than ego strength, per se. What appears to be needed, then, is research designed to compare all three tests making use of a broad spectrum of Rorschach variables. Following Blatt's reasoning, the Rorschach variables should be combined in ways that take into account the factor analytic work done with the Rorschach as well as personality and Rorschach theory. In this way, the degree of relationship among the tests can be observed as well as the nature of the relationships.

Based on the above discussion, it is predicted that the three measures of the two ego constructs would reflect the pattern of conceptual similarity and dissimilarity discussed in the theoretical section of this chapter. Comparison of measures between models (the WUSCT vs. the Barron, and the WUSCT vs. Rorschach measures) should, therefore, result in only a moderate degree of shared variance, while comparisons of measures from the same model (the Barron vs. Rorschach measures) should result in a great degree of shared variance. In the light of the studies employing the WUSCT, it is possible that correlations with it may be strongest at its lowest levels of ego development.

CHAPTER 2

METHOD

Design

The overall design of this study was essentially a within-subjects procedure with all subjects taking all three measures of ego functioning. Two levels of statistical analyses were performed on the foster adolescent data. The first of these involve Pearson correlations, partial correlations controlling for variance associated with Verbal Intelligence, t-tests, and chi-square statistics to determine whether any differences existed in the sample on demographic characteristics, ego measures, or Verbal Intelligence control measures. In addition, the distributions of scores on the ego measures were examined to determine their characteristics and to compare those of foster adolescents with samples of home reared adolescents abstracted from other pertinent research samples. The second level of analyses employed Pearson correlations among the six Rorschach variables to determine their degree of mutual independence and whether any of the relationships between pairs of variables were consistent with either Rorschach or personality theory.

In light of the previous research which implies that subjects below the Conformist level on the WUSCT differ qualitatively from those at or above the Conformist level, the sample was split into these two groups. Previous studies using this type of analysis have employed tests of significance to evaluate mean differences between these two groups on other measures. In this study, however, since

patterns of relationships among ego measures, rather than mean differences, were investigated, it was felt that performing correlational analyses on the ego measures separately among the two WUSCT groups would be more appropriate. To make the results more directly comparable with previous research, mean comparisons (t-tests) were also conducted.

Subjects

Foster adolescents were selected as subjects for this study because it was felt that such a population would provide the needed variability along the dimension of ego functioning. A recent study (McIntyre & Keesler, 1985), using the same population found that it contained individuals who displayed behavioral symptoms indicative of ego deficits as well as individuals who were symptom-free. The subject pool consisted of all children in foster care in Knox County as of June, 1984. The selection criteria that were applied to this pool to identify a subject population of at least 40 nonclinical adolescents were as follows:

- between the ages of 13 and 18 inclusively.
- in at least the sixth grade in regular school classes.
- not presently committed to a correctional or psychiatric facility.
- not diagnosed as mentally retarded or emotionally disturbed.

Once the target population was identified, letters were sent to each of the adolescents to explain the study and request their participation. Follow-up phone calls were made to the foster parents

to set up appointments so that the investigator could meet with the adolescents to further explain the study, seek their consent, and if appropriate, set up a time when the adolescent could be given the tests in his or her home. For inclusion in the study, both the adolescent and his or her foster parent or guardian had to provide written informed consent.

Out of an adolescent foster population of 79, 42 subjects agreed to participate. This number appeared to ensure adequate statistical power when using correlational techniques. According to Cohen (1977), when moderate correlations are expected, as they were in this study as indicated by previous research, a power level of .75 would be obtained with this number of subjects. The mean age of the adolescents was 188.3 months, with a standard deviation of 18.41 months. Nineteen subjects (45 percent) were male, and 23 (52 percent) were female. The distribution as to race was as follows: 32 whites (76 percent), eight blacks (19 percent), and two orientals (5 percent).

Procedures

All tests were administered by this investigator to minimize administration-related variations. The Rorschach, in particular, has been shown to be sensitive to such effects in the area of response productivity (Guilford, 1947). The order of presentation was counterbalanced to minimize order effects. Four orders of presentation were constructed so that each test occurred in each of the four possible positions (first, second, third, or fourth). Two of these orders were presented to the subjects 10 times, and two were

presented 11 times. The orders were presented to the subjects sequentially, and as no particular system was used to order subjects for testing, it can be assumed that no order by sex, race, or age interactions occurred.

Measures

The Washington University Sentence Completion Test

The Washington University Sentence Completion Test was used as the measure of ego development level for the Loevinger model. Several versions of this test have been published for use with different sexes and ages. In this study forms 2-77 (for boys) and 2-77a (for girls) of the WUSCT were administered. These forms are in the public domain, copies of which were obtained from Loevinger's research group at Washington University.

The WUSCT's were scored by this investigator who was self-trained using Loevinger's training exercises. Both the original scoring manual (Loevinger, Wessler, & Redmore, 1970) and the supplemental manual (Redmore, Loevinger, & Tamashiro, 1978) were used to score the responses. Total Protocol Ratings (TPR) were used as the summary statistic to minimize the confounding effects of verbal fluency, and were arrived at using Loevinger's automatic frequency distribution rules (Loevinger & Wessler, 1970) which are recommended for use by novice raters. For statistical analysis, the ego stage scores were converted to an ordinal scale of 1 to 9.

To provide a measure of interrater agreement, 21 randomly selected protocols were independently scored by an independently

self-trained rater. The percentage agreement for TPR's between the two raters was 76 percent and the interrater correlation (Spearman Rank Order) was .88. These figures are comparable with those reported by Loevinger and other investigators.

The Barron Ego Strength Scale

The Barron Ego Strength Scale was used as one of the measures of ego functioning for the analytic model. The Barron consists of 68 items from the Minnesota Multiphasic Personality Inventory. Permission to use the Barron items were obtained from the holder of the MMPI copyright. The Barron items were abstracted from the MMPI and typed on four 8½ by 11 inch white pages in the same order as they appear in the full MMPI. The same instructions were used for the Barron as are used for the MMPI, which were typed on a separate page. The Barron was scored by this investigator using custom-made scoring keys. The score used for data analysis was the sum of correct responses, with each correct response being assigned a value of 1. This measure was assumed to be an interval level variable.

The Rorschach

The second test of ego functioning derived from the analytic model was the Rorschach Technique. A single set of plates was used (Grune & Stratton, 1984). Administration was conducted according to the Burstein-Loucks system (Burstein & Loucks, 1985). All Rorschach records were scored using that scoring system by this investigator who was trained in its use by its authors. All records were independently scored by a second rater who was also trained in the system's use by

it's authors. All disagreements in scoring were arbitrated by the authors of the system. Summary statistics were calculated by computer to minimize error.

From the wealth of data provided by the Rorschach, six areas of ego functioning were examined either using single variables or combinations of variables. Thus from the basic Rorschach scores derived from the Burstein-Loucks system, six ego function measures were generated. The selection of ego functions, and the variables employed to measure them, were based on Blatt and Berman's (1984) factor analysis of the Rorschach, past research with similar variables, analytic personality theory, and Rorschach theory.

Ego Strength Score. The first area of ego functioning selected for examination was Ego Strength, which was thought to represent the overall intactness of the ego. The F+% was chosen to measure this area based on previous research that suggests that the F+% can differentiate among levels of pathology (Singer & Larson, 1981), predict adaptive behavior (Glatt & Karon, 1974), and correlates with mental age (Apple, 1982); Frank's (1979) review article that concludes that the F+% is a good measure of this area of functioning; and the fact that it emerged as one of Blatt's seven factors. This variable was calculated by dividing the number of pure form responses in a subject's record that were socially appropriate (good form) by the total number of pure form responses in that record.

Interpersonal Expectations Score. The second area selected for study was that of Object Relations. This area was chosen because Bellak, Hurvick, and Gediman (1973), among others, proposed that the

ability to relate satisfactorily with others is a fundamental process mediated by the ego, and because object relations measures have been shown to correlate with the WUSCT (Blatt & Berman, 1984) and differentiate among pathological groups (Blatt, Brenneis, & Schimek, 1976; Blatt, et al., 1984; Ritzler & Zambianco, 1980). To create the Interpersonal Expectations variable used in this study, three scoring categories from the Burstein-Loucks scoring system were combined into a single measure. Each of the three categories, Human Articulation (the degree of articulation of perceived humans), Motivational Articulation (the degree of articulation of perceived human action or emotion), and Motivational Valuation (the nature of the context within which perceived human action or emotion took place), are felt by the authors of the system to reflect the quality of internal representations of humans and measure important aspects of a person's ability to relate satisfactorily with others. The first two scoring categories mentioned have four ordinaly arranged levels which reflect increasing degrees of articulation with higher scores signifying greater capacity for object relations. The third scoring category, Motivational Valuation, has three ordinaly arranged levels which indicate whether the context was malevolent, neutral, or benevolent, and which, the authors feel, reflect the style of interactions expected by an individual.

To compute this measure, numerical values were first assigned to the various scores. Values of 1 to 4 were assigned to the four levels of articulation which comprise the Human Articulation and Motivational Articulation categories, and values of 1 to 3 were assigned to the

three types of contexts. In the latter case, a score of 1 was assigned if the context was malevolent, 2 if it was neutral, and 3 if it was benevolent. For each record, the sum of all the Human Articulation scores was then added to the sum of all the Motivational Articulation scores. This total was then multiplied by the sum of the Motivational Valuation scores. The rationale underlying this Interpersonal Expectations measure is that higher scores would be attained by subjects whose internal representations of humans are more articulated and positively valued, and lower scores would be attained by subjects whose internal representations are more global and/or negatively valued. Higher scores on this measure should, therefore, reflect a greater capacity for conflict-free and satisfying relations with others.

To make the results of this study more directly comparable with previous research, a second measure of Object Relations was calculated, but not included in the hypotheses of this study. This second measure consisted of the sum of the level of Human Articulation scores in each subject's record that were socially appropriate (of good form level). A very similar measure was found by Blatt and Berman (1984) to correlate significantly with the WUSCT.

Defensive Functioning Score. The third area of ego functioning to be examined was Defensive Functioning. The Burstein-Loucks system includes scoring categories suggested by Holt's work which assesses the presence and developmental level of psychosexual drive derivatives and the effectiveness of their associated defenses. This defense effectiveness score was selected as a measure of this area of ego

functioning because of the fact that a similar variable emerged as one of Blatt's factors, and because research has suggested that Holt's measures tap important aspects of ego functioning (Benfari & Cologeras, 1968; Dudek & Chamberland-Brougadana, 1982; Blatt, et al., 1984).

The Burstein-Loucks defense effectiveness category has three ordinaly arranged levels. A defense is rated "good" if the psychosexual drive derivative occurs within a response that is socially appropriate, provides a social context for the derivative, and if the next response in the record does not contain a scorable derivative of the same developmental level. The defense is considered "intermediate" if any one or two of the above three criteria are met, and "poor" if none of them are met. Theoretically, a person's defenses are even more effective if no drive derivative appears in the response at all. Thus, these four levels of defense effectiveness were assigned scores of 1 to 4, with 1 signifying a "poor" defense, and 4 signifying no scorable psychosexual drive in the response. To compute the Defensive Functioning variable employed by this study, the defense effectiveness scores were summed for each subject's record.

Objective Imagination Score. The fourth area of ego functioning selected for examination was a measure of the social appropriateness of a person's fantasy. The rationale for the use of this area of functioning was as follows. Theoretically, a person makes use of mental action, or imagination, to delay expressing impulses, to plan activity, to anticipate consequences, and as part of the creative process. For imagination to be an aid in adaptation, however, it must

be rooted in shared reality and, hence, be consensually valid. If all of a person's fantasy is autistic, action and perceptions based on it are likely to be socially inappropriate and maladaptive. The ability to access fantasy material, translate it into socially sharable symbols, and use it adaptively can be thought of as a function of the ego.

On the Rorschach, when a person develops a percept, they typically make use of the objective aspects of the blot such as form or color. Sometimes, however, a person will make use of attributes projected onto the two dimensional, static blots such as movement, texture, or depth. These last aspects of the percepts can be considered closer to the type of fantasy productions discussed above. The Burstein-Loucks system, unlike other scoring systems, differentiates between these two aspects of percepts by calling the first, more objective qualities "justifications," and the latter, imaginal qualities "imaginal aspects." To arrive at a measure of this area of ego functioning, here called Objective Imagination, a computation similar to that for the F+% was used. The number of responses that contained imaginal aspects and were socially appropriate in a record, was divided by the total number of responses containing imaginal aspects. This variable can be considered a measure of the percentage of a person's use of imagination which is socially appropriate (consensually valid), as opposed to socially inappropriate (autistic). Theoretically, persons with higher Objective Imagination scores will be more able to make adaptive use of their fantasy productions than those who have lower scores.

Thought Disorder Score. The fifth area of ego functioning to be examined involved perceptual/cognitive (5th column) abnormalities present in the responses. This area was selected on the basis of a similar measure emerging as one of Blatt's factors, and on the basis of research that suggests that perceptual/cognitive abnormalities can differentiate among levels of pathology and different pathological groups (Smith, 1983; Sugarman, Quinlan, & Devenis, 1982; Gol, 1982). The Burstein-Loucks system provides an extensive list of perceptual/cognitive characteristics that can be scored within responses. Norms, collected by the authors of the system, indicate that the following scores rarely occur in a psychologically healthy population: egocentric justification (EJ), contradiction of reality (CR), deterioration color (DC), fixed concept perservation (FCP), transposition response (TR), extreme verbal peculiarity (VP), Bizzare content (BC), predicate thinking (PT), cluster thinking (CT), percept stabilization defect (PSD), and cut-off detail (DX) (Lefton, 1979). These cognitive/perceptual abnormalities are thought to indicate severe breakdowns in ego functioning that reflect thought disorder. Gol (1982) found that several of the scores differentiated transexuals from healthy adults.

To compute this measure (Thought Disorder), the total number of these scores occurring in a record was obtained through addition. Higher scores on this Thought Disorder index would indicate more seriously disturbed perceptual/cognitive functioning than would lower scores.

Intellectual/Organizational Functioning Score. The last area of ego functioning to be examined was called Intellectual/Organizational Functioning. This area was suggested by the extensive body of research on the Becker Developmental Scoring System (Becker, 1956) reviewed by Glass (1983) which suggests that how one organizes and articulates the blot areas in a percept is reflective of important aspects of ego functioning. Following Werner (1948), development in this area should proceed from globality toward differentiation. The Burstein-Loucks system provides a scoring category based on how a person organizes and articulates the blot areas. Within this scoring category, an ordinal level score is assigned to each response depending on whether a person integrates blot areas, merely articulates them, or perceives them in a more global or arbitrary manner. To compute the variable used in this study, the total number of responses scored "integrated" or "articulated," the two most highly developed categories, was obtained. This measure can be considered as the number of responses in a record that display the most sophisticated level of Intellectual/Organizational functioning.

It should be noted that all of the Rorschach measures were considered to be ordinal level variables. Except for the F+%, all of them can also be considered exploratory in that none of them have been used in previous research in exactly the same form as they appear here. Their use was justified, it was felt, because of Blatt and Berman's (1984) and Weiner's (1977) arguments in favor of the theoretical construction of summary variables, and the body of literature that supports the use of variables similar to those used in this study.

Of the above measures, Interpersonal Expectations, Defensive Functioning, Thought Disorder, and Intellectual/Organizational Functioning were treated two different ways for statistical comparison with the WUSCT and the Barron. In one, these four variables were divided by the total number of responses in a record, and in the other, partial correlations controlling for record length were used. This dual approach was used because of disagreement over the most statistically adequate means of compensating for individual responsivity to the Rorschach blots when comparing measures derived from the Rorschach with other ego measures. Traditionally, Rorschach summary indices have been divided by the number of responses in a Rorschach record to obtain mean values so that comparisons can be made among individuals and groups. Cronbach (1949), however, argued that dividing by record length is an inadequate means of controlling for responsivity because when interpreting such ratios, equal differences in obtained proportions may not be equal psychologically. A similar argument was made by Blatt and Berman (1984) who used covariance procedures, rather than division by record length.

The Peabody Picture Vocabulary Test-Revised

The Peabody Picture Vocabulary Test-Revised, Form L (PPVT-R) was used as the measure of Verbal Intelligence. Its selection was made on the basis of the PPVT-R's ease of administration, adequate reliability, and high correlations with standardized intelligence tests that are commonly used with adolescents (Dunn & Dunn, 1981). The PPVT-R provides a standard score which, with a mean of 100 and a standard deviation of 15, can be interpreted like an IQ score.

Predictions

If the measures of ego functioning, the WUSCT, the Barron, and the six Rorschach variables, display patterns of covariance consistent with theoretical predictions, then the following results would be obtained:

- A moderate positive correlation between the WUSCT and the Barron when Verbal Intelligence is partialled out.
- moderate positive correlations between the WUSCT and the following Rorschach variables when Verbal Intelligence is partialled out: F+%, Interpersonal Expectations, Defensive Functioning, Objective Fantasy, and Intellectual/Organizational Functioning.
- moderate negative correlation between the WUSCT and the Rorschach variable of Perceptual/Cognitive Functioning when Verbal Intelligence is partialled out.
- strong positive correlations between the Barron and the following Rorschach variables: F+%, Interpersonal Expectations, Defensive Functioning, Objective Fantasy, and Intellectual/Organizational Functioning.
- A strong negative correlation between the Barron and the Rorschach variable of Intellectual/Organizational/Cognitive Functioning.

CHAPTER 3

RESULTS AND DISCUSSION

Preliminary Analyses

Preliminary analyses were conducted to determine whether sex and/or race were related to other demographic variables, the measures of ego development, or the Verbal Intelligence control variable, and to determine whether the WUSCT was here distributed similarly to its distribution in other research samples with pertinent findings. In regard to the demographic, ego development, and control variable characteristics of the sample, no sex differences were found. Racial differences (whites vs. nonwhites) were found, however, with white adolescents having higher mean scores on the PPVT-R ($t(41) = 2.63$, $p = .012$) and on the WUSCT ($t(41) = 3.60$, $p = .001$). Significant correlations were also found between the WUSCT and Verbal Intelligence ($r(42) = .65$, $p < .001$) and Verbal Intelligence and Interpersonal Expectations ($r(42) = .36$, $p = .018$).

Analyses of the distributions of the variables showed that several of the ego measures were severely skewed (see Table 2), most notably the WUSCT, Interpersonal Expectations, and Thought Disorder. Frequency distributions of the ego measures are presented in the Appendix. It is interesting to note that among the sample of foster adolescents, 83 percent achieved WUSCT scores below the Conformist

TABLE 2
DESCRIPTIVE STATISTICS FOR DEMOGRAPHIC
AND EGO MEASURES

Variable	Mean	Standard Deviation	SKEW
Verbal Intelligence	81.2	14.15	0.54
WUSCT	2.6	1.27	1.45
Barron	39.7	6.88	-0.37
F+%	65.9	16.35	0.58
Objective Imagination	74.2	23.10	-0.83
Interpersonal Expectations	7.8	8.82	1.32
Defensive Functioning	3.7	0.25	-0.53
Thought Disorder	13.0	16.70	2.83
Intellectual/ Organizational Functioning	70.6	14.70	0.11

level, and 67 percent achieved scores below the $\Delta/3$ level. These findings are in sharp contrast to those presented in several previous studies that utilized predominantly home reared adolescents.

In a study by Hoppe and Loevinger (1977), employing 107 adolescent boys (13 years, 7 months to 17 years, 9 months) who attended a private school located in a middle class Midwestern suburb, it was found that 27 percent of the sample received WUSCT scores below

I-3, and 73 percent of the boys achieved scores at or above I-3. Frank and Quinlan (1976) used 66 Black and Puerto Rican adolescent females who came from predominantly working class, inner city neighborhoods. Although 25 of these subjects were institutionalized adjudicated delinquents, 41 were non-clinical, predominantly home reared adolescents who were matched with the delinquents on SES and other demographic variables. The distribution of WUSCT scores among the delinquents showed that 92 percent of them received scores at or below the Δ level. Among the non-delinquent controls, however, only 54 percent received WUSCT scores at or below the Δ level. In another relevant study, Noam, et al. (1984), used 114 male and female adolescents (12-16 years old) who were hospitalized on an inpatient psychiatric ward. Among these subjects, 67 percent achieved WUSCT scores below the I-3 level. Gold (1980) tested 150 high school students (14-15 years old) from a predominantly middle class, highly educated community. Of these subjects, 55 percent achieved WUSCT scores below I-3, and 45 percent achieved scores at or above I-3 level. Finally, in a study by Redmore and Loevinger (1979), a total of 279 adolescents (12.5 to 16.6 years old) took part in eight different experiments. These subjects were drawn from many different social and racial groups ranging from inner city to prep school subjects. The pooled results of these experiments show that for all of the groups, except inner city Blacks, the majority of subjects had WUSCT scores at or above the I-3 level. The majority of inner city Blacks achieved WUSCT scores below I-3.

The distributions of WUSCT scores from the above studies, including the foster adolescents, are presented in Table 3. Results from several of the experiments were combined into the following groups: non-clinical, low SES samples ($N = 41$), non-clinical high SES samples ($N = 275$), and clinical samples ($N = 139$). A below $\Delta/3$ vs at or above $\Delta/3$ sample division was used due to the availability of these data from all of the studies. Chi-square tests of independence were conducted on all possible comparisons among these groups and the foster adolescents from this study. It was found that the foster adolescent sample had a significantly greater proportion of subjects below the $\Delta/3$ level than either the non-clinical, low SES group ($\chi^2(1, N = 83) = 7.73, p < .01$) or the non-clinical, high SES group ($\chi^2(1, N = 299) = 34.76, p < .001$). The distributions of WUSCT scores were not significantly different for the foster adolescents and the clinical group ($\chi^2(1, N = 181) = 2.02, p < .20$). The non-clinical, low SES group also had a greater proportion of subjects below the $\Delta/3$ level than did the non-clinical, high SES group ($\chi^2(1, N = 298) = 17.45, p < .005$), but was not significantly different from the clinical group ($\chi^2(1, N = 180) = 0.0, p < 1.00$). The non-clinical, high SES group had significantly fewer subjects below the $\Delta/3$ level than did the clinical group ($\chi^2(1, N = 298) = 42.02, p < .001$).

These findings which suggest that foster adolescents have lower overall ego development are further supported by findings from a study by Greenberg (1969). Using the Rorschach Prognostic Rating Scale (RPRS) as a measure of ego strength, the author examined three groups

TABLE 3
COMPARISON OF THE DISTRIBUTION OF WUSCT SCORES AMONG SEVERAL STUDIES

	Below $\Delta/3$	At or Above $\Delta/3$	Below I-3	At or Above I-3
	%	%	%	%
Glass (1986) N = 42	<u>67</u>	<u>33</u>	83	17
<u>Clinical Samples</u>				
Frank and Quinlan (1976) Delinquents N = 25	92	8	--	--
Noam, et al., (1984) N = 114	46	54	67	33
All Clinical Samples N = 139	<u>54</u>	<u>46</u>	--	--
<u>Non-clinical, low SES Samples</u>				
Frank and Quinlan (1976) Non-delinquents N = 41	<u>54</u>	<u>46</u>	--	--
<u>Non-clinical, high SES Samples</u>				
Hoppe and Loevinger (1977) N = 107	8	92	27	73
Gold (1980) N = 150	32	68	55	45
All non-clinical Samples N = 257	<u>22</u>	<u>78</u>	44	56

of subjects: foster adolescents separated from their biological families early in life (8 months to 3 years of age, $N = 20$), foster adolescents separated from their biological families later in life (4 to 9 years of age, $N = 20$), and home reared adolescents ($N = 20$). All subjects were between 12 and 17 years of age at the time of testing, and groups were matched on SES and IQ. The results indicated that the foster adolescents had significantly lower mean RPRS scores than did the home reared adolescents, and that the two foster adolescent groups had equal mean RPRS scores.

Relationships Among Rorschach Measures of Ego Development

Analyses were conducted on the Rorschach measures of ego development to determine the degree of independence among the six measures, and whether any relationships among the variables were inconsistent with theoretical predictions. Regarding the statistical independence of the measures, the six variables were found to be relatively independent of each other (Table 4). Only three Pearson intercorrelations among the variables were statistically significant: Objective Imagination with Intellectual/Organizational Functioning ($r(42) = .32$, $p = .044$), Defensive Functioning with Thought Disorder ($r(42) = -.32$, $p = .041$), and Interpersonal Expectations with Defensive Functioning ($r(42) = -.40$, $p = .008$). The low absolute magnitude of the significant correlations suggests that despite some shared variance, none of the measures were redundant.

TABLE 4
PEARSON CORRELATIONS AMONG RORSCHACH MEASURES
N = 42

	Variable				
	F+%	I	II	III	IV
I Objective Imagination	.11	--	--	--	--
II Interpersonal Expectations	-.23	-.12	--	--	--
III Defensive Functioning	.05	.24	-.40*	--	--
IV Thought Disorder	-.22	-.19	-.00	-.32*	--
Intellectual/Organizational Functioning	-.14	.32*	.12	.02	.14

* $p < .05$, two-tailed

This relative independence was replicated using an independent sample of 39 University of Tennessee College Scholars (Bertenthal, 1985) (Table 5).

Although the Rorschach measures were designed to be relatively independent, some shared variance was expected between some pairs of variables on theoretical grounds. The negative correlation between Thought Disorder and Defensive Functioning ($r(42) = -.32$, $p = .041$) is consistent with the theoretical understanding of these two measures in

TABLE 5
 PEARSON CORRELATIONS AMONG RORSCHACH MEASURES
 USING COLLEGE SCHOLAR DATA
 N = 39

	Variable				
	F+%	I	II	III	IV
I Objective Imagination	.20	--	--	--	--
II Interpersonal Expectations	-.33*	-.17	--	--	--
III Defensive Functioning	.30	.26	-.33*	--	--
IV Thought Disorder	.13	-.13	.09	-.18	--
Intellectual/Organizational Functioning	-.27	.20	.13	.14	-.11

* $p < .05$, two-tailed

that indicators of disordered thinking in a Rorschach record are thought to reflect breakdowns in the effective functioning of defenses. The positive correlation between Intellectual/Organizational Functioning and Objective Imagination ($r(42) = .3$ $p = .044$) is also consistent with theory in that higher scores on both variables are, in part, thought to reflect the adaptive use of imagination.

A positive correlation was expected between the measures of defense effectiveness (Defensive Functioning) and overall ego strength (F+%) because it was felt that the achievement of higher scores on the

ego strength measure would require, in part, the ability to effectively modulate and integrate psychosexual drive material. In fact, a nonsignificant correlation ($r(42) = .05$, $p = .753$) was found between these two measures. It was felt that the lack of covariance may have been due to the incorrect usage of the F+% since the Defensive Functioning variable correlated in a theoretically consistent direction with another measure that should, in part, reflect ineffective defenses (Thought Disorder).

In this study, the F+% was used as if it were a linear variable with higher scores signifying greater ego strength. Clinically, however, scores above 90 percent are seen as reflective of pathology as are those below 70 percent. To take into account this curvilinear interpretation, the F+% was recalculated post-hoc so that a value of 1 was assigned to values between 70 percent and 90 percent inclusively, and a value of 0 was assigned to values below 70 percent and above 90 percent. The point biserial correlation between the recalculated F+% and Defensive Functioning was $r(42) = .36$, $p = .020$ suggesting that the curvilinear usage of the F+% would have been more clinically accurate.

A positive correlation was also expected between Interpersonal Expectations and Defensive Functioning because it was felt that persons who display the ability for satisfying conflict-free relations with others should also, theoretically, possess effective defenses against unconscious fantasies that could be potentially disruptive of social functioning. In fact, a negative correlation between Interpersonal Expectations and Defensive Functioning was found in two

independent samples ($r(42) = -.40$, $p = .008$ and $r(39) = -.33$, $p = .038$). It was felt that there was a problem with the Interpersonal Expectations variable rather than the Defensive Functioning measure because of the latter's theoretically consistent relationships with two other variables. This hypothesis was investigated by correlating the three Burstein-Loucks components of the Interpersonal Expectations measure (Human Articulation, Motivational Articulation, and Motivational Valuation) with the recalculated F+%, Defensive Functioning, and PD% (the percentage of responses in each Rorschach record that contained scorable psychosexual content), which can be interpreted, roughly, as an indicator of pathology with higher scores, in general, reflecting greater pathology. It was found that each of the three components of the Interpersonal Expectations measure correlated negatively with the recalculated F+% and Defensive Functioning suggesting that all three components were implicated in the problem. The correlations ranged between $r(42) = -.21$, $p = .191$ and $r(42) = -.66$, $p < .001$) with five out of six of them being statistically significant ($p \leq .05$). Human Articulation, Motivational Articulation, and Motivational Valuation correlated positively with PD% ($r(42) = .34$, $p = .028$, $r(42) = .69$, $p < .001$, and $r(42) = .60$, $p < .001$, respectively) suggesting that higher values of the Interpersonal Expectations measure reflected less, rather than more, adaptive functioning.

Relationships Among the Ego Measures

A significant correlation was found between Objective Imagination

and the WUSCT ($r(39) = .34$, $p = .034$). No significant correlations were found among any of the other ego measures (Table 6). A nonsignificant correlation was obtained when the level of articulation

TABLE 6
CORRELATIONS AMONG THE WUSCT, THE BARRON,
AND THE RORSCHACH MEASURES
N = 42

Variable	WUSCT ^a	Barron ^b
Barron	-.14	--
F+%	-.17	.07
Objective Imagination	.34*	.03
Interpersonal Expectations	-.04	.05
Defensive Functioning	.24	-.09
Thought Disorder	-.01	-.02
Intellectual/Organizational Functioning	.28	.20

^apartial correlations controlling for verbal intelligence

^bPearson correlations

* $p < .05$, two-tailed

of accurately perceived humans was compared with the WUSCT ($r(39) = -.09$, $p = .566$). It should be noted that when the four Rorschach measures that were divided by R--Interpersonal Expectations, Defensive Functioning, Thought Disorder, and Intellectual/Organizational Functioning--were compared with the WUSCT and the Barron using

covariance techniques, no significant correlations were obtained (Table 7). It should also be noted that nonsignificant correlations were found post-hoc between the F+%, when treated as a bivariate, and the WUSCT ($r(39) = .09$, $p = .586$), and between it and the Barron ($r(42) = .00$, $p = .994$). These results support previous research findings of no relationship when the WUSCT was correlated with the F+% and a somewhat similar measure of defense effectiveness. They are in

TABLE 7
CORRELATIONS BETWEEN RORSCHACH MEASURES AND OTHER
EGO VARIABLES USING COVARIANCE TECHNIQUES
N = 42

Variable	WUSCT ^a	Barron ^b
Interpersonal Expectations	.05	.03
Defensive Functioning	.15	-.05
Thought Disorder	.13	-.01
Intellectual/Organizational Functioning	.24	.21

^apartial correlations controlling for both verbal intelligence and Rorschach record length

^bpartial correlations controlling for Rorschach record length

contrast, however, to findings from the same study of a significant correlation between a somewhat similar measure of Thought Disorder and the WUSCT ($r(129) = .28$, $p < .01$), and between the level of

articulation of accurately perceived humans and the WUSCT ($r(129) = .31, p < .01$) (Blatt & Berman, 1984).

Two approaches were used to investigate the possibility suggested by previous research that high and low scorers on the WUSCT are qualitatively different from each other. The first involved dividing the sample along theoretical lines into those below the Conformist level, and those at or above the Conformist level. The second involved dividing the sample at the median WUSCT level into those with scores below the $\Delta/3$ level, and those with scores at or above the $\Delta/3$ level. The advantage of the second strategy is that with more nearly equal numbers of subjects in each group, greater statistical power was obtained. In either case, of course, the numbers were small, limiting generalizability of the findings.

Table 8 shows the results of both strategies. When dividing at the Conformist level, it can be seen that the magnitudes of the correlations between the WUSCT and the other ego measures tend to be greater at or above the Conformist level than for those below the Conformist level. No coherent pattern was displayed when the sample was divided at the $\Delta/3$ level.

To make the results of this study more readily comparable to pertinent findings from previous research, the means of the ego measures for those subjects below the Conformist level were compared with mean scores for subjects at or above the Conformist level. No significant differences were found between the two groups. These findings are in contrast to those reported by Gold (1980), who found that among 150 high school students, subjects scoring at or above the

Conformist level on the WUSCT had significantly higher Barron scores than did those scoring below the Conformist level.

TABLE 8
CORRELATIONS AMONG EGO MEASURES WITH SAMPLE DIVIDED
ON THE BASIS OF WUSCT SCORES

Variable	WUSCT		WUSCT	
	Below $\Delta/3$ (n=28)	At or Above $\Delta/3$ (n=14)	Below I-3 (n=35)	At or Above I-3 (n=7)
Barron	.06	-.06	-.07	-.40
F+%	.17	-.37	.07	.36
Objective Imagination	-.08	.43	.31	.89*
Interpersonal Expectations	.12	-.10	-.04	-.72
Defensive Functioning	-.12	.45	.01	.69
Thought Disorder	.13	-.24	.17	.24
Intellectual/Organizational Functioning	.18	.35	.25	.43

* $p < .05$, two-tailed

Summary of Findings

Preliminary analyses demonstrated that using Verbal Intelligence as a control variable was sufficient to compensate for the potentially biasing race by WUSCT interaction that was found. Preliminary analyses also indicated that several of the distributions of the ego

measures were significantly skewed. When the distributions of the foster adolescents' WUSCT scores were compared with those from other pertinent research samples, it was found that a larger proportion of foster adolescents fell in the lowest two ego development levels than did groups of home reared adolescents, and that the distribution of the foster adolescents' scores closely resembled those of clinical samples. The Rorschach measures used in this study were found to possess adequate statistical independence and mostly interrelated according to theoretical predictions. The F+% was found to have been used incorrectly, and the interpretation of the psychological meaning of the Interpersonal Expectations measure was found to be in error. As predicted, a significant moderate correlation was found between the WUSCT and Objective Imagination. Contrary to prediction, however, no significant correlations were found among any of the other ego measures. Division of the sample on the basis of WUSCT scores suggested that a greater degree of relationship may exist among the ego measures for subjects at or above the Conformist level than among subjects below the Conformist level.

CHAPTER 4

INTERPRETATIONS

Sample Considerations

In considering the adequacy of the sample of foster adolescents for this type of correlational study, one must investigate possible biases related to sample selection and composition. One potentially biasing factor involved the sample selection procedures and the resulting nature of the sample. When subjects were recruited for this study, the nature of the experiment was briefly explained to each potential subject individually, after which they elected to participate or not. This self selection process may have introduced a bias into the sample such that those subjects who participated may be significantly different from foster adolescents in general on some dimension or dimensions that have a bearing on the question asked in this study. Given the realities of research employing foster adolescents as subjects, there did not appear to be a way to control for this problem. It should be noted that some assurance of similarity between those subjects who volunteered and those who did not was provided by the finding that these two groups did not significantly differ on the demographic variables of age, sex, race, and placement site.

A second potential problem was discovered when the distributions of the ego measures were examined. It was found that all of the ego measures were skewed, some of them markedly. The most severely skewed variables were the WUSCT, Interpersonal Expectations, and Thought

Disorder. The distribution of Thought Disorder indicated that most of the sample did not exhibit many of the indicators of severely disordered thinking that were assessed. This is understandable given the sample selection procedures which functioned to exclude subjects with previously diagnosed marked psychopathology. The degree of skewedness of the WUSCT was surprising and will be discussed later in this chapter. The restriction of range implied by such skewedness would tend to result in the underestimation of any shared variance between the ego measures.

Another approach to the sample bias question was to test for mean differences among demographically defined subgroups and to intercorrelate the various ego and demographic measures. These procedures revealed significant findings of a pattern of relationships among Verbal Intelligence, sex, race, and the WUSCT. Such findings would seem to imply that a complex interaction existed among all these variables that could potentially confound the results of comparisons among the ego measures. Similar results, however, were reported in a study by Redmore and Loevinger (1979) where a pattern of correlations was found to exist among the WUSCT, IQ, and SES (which was highly influenced by racial factors). When the variance due to IQ was partialled out in that study, the pattern of correlations became insignificant implying that IQ was the underlying variable producing all of the intercorrelations. These findings were replicated in this study as can be seen by the disappearance of the pattern of correlations among the WUSCT, sex, race, and Verbal Intelligence when the variance due to Verbal Intelligence was partialled out. Again,

these results imply that the potentially biasing pattern of intercorrelations was due not to a complex interaction among variables, but to the differences among demographically defined subgroups vis-a-vis their receptive knowledge of words, that aspect of verbal intelligence measured by the PPVT-R.

Once Verbal Intelligence was controlled for, it appeared that no observable, significant biasing influences existed in the sample, other than the problem of highly skewed distributions. It is always possible, however, that other, unmeasured factors biased the sample such as the length of time in foster care, placement (group home vs. foster home), or reason for being in foster care.

Comparison of the Ego Measures

The WUSCT and the Barron

This study hypothesized that there would be a moderate correlation between the WUSCT and the Barron. The results of this study, with a nonsignificant correlation between the two measures, do not support this hypothesis. This finding implies that because there is no shared variance between the two tests; they are measuring independent domains of personality. The results obtained by Gold (1984) implies, however, that some commonality exists in the domains of personality tapped by the two tests. Several factors may explain these discrepant findings. One factor has to do with the degree of variability among the two measures found in the different samples. In Gold's sample of predominantly home reared adolescents, an acceptable degree of variability was obtained on both measures, whereas in the

foster adolescent sample, adequate variability was obtained only on the Barron. The lack of variability among the foster adolescent's WUSCT scores would make it difficult to identify, using correlational techniques, any relationship between the two measures that may exist in a general population. Other factors include the differences in sample size (42 vs. 150) between the two studies and the differences in the populations sampled. Thus, it is possible that the WUSCT and the Barron do covary, but that this relationship is not apparent within this sample.

The WUSCT and the Rorschach

This study hypothesized that there would be moderate positive correlations between the WUSCT and the following Rorschach variables: F+%, Interpersonal Expectations, Defensive Functioning, Objective Imagination, and Intellectual/Organizational Functioning. A negative moderate correlation was predicted between the WUSCT and Thought Disorder. The results of correlating the WUSCT with the Rorschach variables do not support this hypothesis, except for the positive moderate correlation between the WUSCT and Objective Imagination. These findings imply that the WUSCT measures areas of personality independent from those measured by five of the six Rorschach variables. The magnitude of the correlation between the WUSCT and Objective Imagination implies that although these two variables have some areas of commonality, they are not redundant measures. The lack of convergence between the WUSCT and the Rorschach variables may, in part, be due to the problem of restricted range caused by the degree of skewedness seen in several of the variables concerned. Thus, these

results may underestimate any relationship that may exist between the WUSCT and the six Rorschach variables in the general population. It is also possible that given the number of correlations run with the WUSCT, this one significant correlation may be due to chance alone. If the correlation between the WUSCT and Objective Imagination is taken at face value, however, it implies that the WUSCT, in part, measures the flexible, constructive, and adaptive use of imagination.

One possible explanation for this correlation between the WUSCT and Objective Imagination is that, according to Loevinger, ego development is characterized by increasing differentiation, complexity, and flexibility in, among other things, cognitive style. Two studies (Candee, 1974; and Ginsberg & Orlofsky, 1980) lend support to this hypothesis by showing that subjects who obtain higher ego development levels on the WUSCT tend to display greater cognitive complexity and flexibility, and are better able to solve complex problems. It is likely that the adaptive use of imagination is one aspect of the above abilities which could account for the covariance of the WUSCT and Object Imagination.

The absence of covariance between the WUSCT and the Rorschach measures of F+% and Defensive Functioning support similar findings reported by Blatt and Berman (1984). Their findings do, however, imply that the WUSCT does, in part, measure aspects of defense effectiveness and object relations. Even though Blatt and Berman took a somewhat different approach to assessing object relations, using a variable constructed along lines similar to theirs failed to provide replication. These discrepant findings may be due to several factors

including inadequacies in Blatt and Berman's methodology, the differences between the Burstein-Loucks scoring system and that which they used, the differences in the populations sampled, the differences in sample sizes, the skewedness of the distributions observed in the foster adolescent sample, or some combination of the above factors. It is also likely that the error found in the interpretation of the Interpersonal Expectations variable contributed to these discrepancies.

The Barron and the Rorschach

This study hypothesized that there would be moderate positive correlations between the Barron and the following Rorschach variables: F+%, Interpersonal Expectations, Defensive Functioning, Objective Imagination, and Intellectual-Organizational Functioning. A moderate and negative correlation was predicted between the Barron and Thought Disorder. The results of this study do not support this hypothesis. These findings imply that the Barron and the six Rorschach variables tested measure independent domains of personality functioning. Although the distribution of Barron scores in this sample displayed only a modest degree of skewedness and an adequate range of scores, several of the Rorschach variables displayed a moderate to marked degree of skewedness. Again, it is possible that the skewedness of the distributions may have functioned to underestimate any relationships existing between the Barron and the Rorschach variables in the general population.

The previous research reviewed which compared the Barron with different aspects of the Rorschach have only some relevance to the

comparisons made in this study. In two reviews of this literature, Frank (1967, 1979), concluded that no significant relationship was found between F+% and the Barron across a number of studies. The results of this study support Frank's conclusion.

Sample Division on the Basis of WUSCT Scores

Several of the studies reviewed that employed the WUSCT produced results that suggested that subjects below the Conformist stage (I-3) differ significantly from those at or above the Conformist level. Following up on these suggestive data, the sample of foster adolescents was divided into those below I-3 and those at or above I-3. Correlations among the ego functioning measures were run separately for each of these subgroups. When this was done, it appeared that when the Barron and the six Rorschach variable were correlated with the WUSCT, the correlations were of greater magnitude for those subjects at or above I-3 than for those below the I-3 level. Only one of these increased correlatins was statistically significant, however, due to the small number of subjects in the higher WUSCT group ($n = 7$). Although the exact meaning of these findings is unclear, they imply that there may be a greater degree of commonality between the Barron and the WUSCT, and the WUSCT and the six Rorschach variables used in this study among those subjects who score at or above the Conformist level on the WUSCT. These results tend to lend support to the previous findings of qualitative differences between subjects below and at or above the Conformist level. These findings also tend to support Hauser's (1976) conclusion that many relationships between the

WUSCT and other measures of personality functioning are of a nonmonotonic rather than a linear, nature.

Implications for the Ego Measures

When the measures of ego functioning used in this study were compared, only one moderate correlation was found. Taken at face value, these data imply that the Barron, the WUSCT, and the six Rorschach measures have little shared variance, and therefore, must be measuring dissimilar constructs. A possible alternate conclusion, however, is suggested by some of the findings presented above. It is interesting to note that while some of the measures, such as the Barron, displayed adequate variability among the foster adolescents, others were markedly skewed, some positively and some negatively. This may imply that the majority of subjects were within the psychometric range of some of the measures, below the range of some, and above the range of others. Expressed differently, this may imply that the different measures are sensitive within different ranges of ego functioning. This hypothesis is supported by the finding that a trend existed in the data of greater shared variance between the WUSCT and the other ego measures among subjects at or above the Conformist level than among those below the Conformist level. Thus when different ranges of overall ego functioning were examined, different degrees of commonality among the ego measures were found. Given that only 17 percent of the subjects fell within this higher range of functioning, correlations between the measures performed on the whole sample would mostly reflect relationships among the pre-Conformist

group, obscuring relationships that may exist at different ranges of functioning. This may explain why the results of this study contrast with previous research which suggests that commonality does exist between some of the measures. Taken as a whole, the above findings might suggest that convergent patterns do exist among the measures, but that these patterns were obscured by differences in range of psychometric sensitivity among the measures.

If this alternate hypothesis is correct, it would have implications for the use of ego measures in clinical and research settings. Most typically, when a clinician or a researcher wants to measure ego functioning, a test is selected on the basis of theoretical orientation, familiarity, or administration and scoring considerations. Little consideration is usually given to a test's ability to adequately discriminate within the range of overall functioning at which the subject is likely to fall. If different measures are sensitive at different ranges, however, test selection should also be based on this factor. This could become particularly important if a single test is being given to a group of subjects with members at divergent developmental levels, or if individuals or groups at different levels are compared. What may be needed, then, is the development of a test of ego functioning that is sensitive across levels or a battery of tests, each sensitive at a particular level. Such a procedure would allow for more accurate assessment of an individual's ego functioning and would allow for meaningful comparisons between individuals or groups.

Implications for the Ego Models

In trying to understand the results from this study, there are, admittedly, several potentially confounding factors which make it difficult to interpret the findings, let alone make generalizations beyond the sample used. If the results are taken at face value, however, some inferences may be drawn regarding the two models of the ego outlined in the introduction.

The term "ego" has been in use for a long time and has been adopted by many different schools of psychological thought. The psychoanalysts typically conceptualize the ego as a collection of mental tools, although even among theorists of the different analytic subgroups, there is much disagreement as to how the ego forms and what functions are subsumed under the ego construct. Loevinger, on the other hand, sees the ego as a process, a templet of understanding through which persons give psychological meaning to their experience of their environment. These two definitions of the ego differ markedly from each other, and on the surface, appear to be describing dissimilar constructs. Based on the results of this study, one could conclude that they were, in fact, describing dissimilar constructs. Thus it may be that not only do the two models use different definitions to describe ego, they are describing different aspects of personality entirely.

This conclusion, if it can be drawn from these data, is an important one and has many implications. It is easy, when reading the psychological literature of a viewpoint different from one's own, to try to understand the new concepts by translating the new terms and

ideas into those that are already familiar and well understood. This becomes particularly enticing when the same terms are used in similar contexts. The danger of this approach is that the constructs of one system may not really be directly translatable into the constructs of the other. This appears to be the case with the ego construct. If this is so, when a theorist or researcher uses the term "ego," it will be important to fully understand what they mean by it before interpreting findings or evaluating theoretical reasoning. Thus, the results of this study seem to support the need for precision and differentiation in the language psychologists use to tell each other what they really mean.

Foster Adolescents

Although this study was principally concerned with comparing measures of ego functioning, the results also provide some interesting insights regarding the subjects employed. Originally, nonclinical foster adolescents were selected on the basis of research findings (McIntyre & Keesler, 1985) which suggested that this population should display an adequate degree of variability in regard to ego functioning in so far as they showed a range from virtually free of symptomatology to sub-clinical behaviorally disordered. As it turned out, however, their scores on several of the ego measures displayed little variability. One example of this trend was the finding that 83 percent of the foster adolescents scored below the Conformist level on the WUSCT. Previously reviewed research suggests that subjects who score below the Conformists level display a significantly greater

degree of psychopathology than do subjects at or above this level. Additionally, when the distribution of the foster adolescent's WUSCT scores were compared with other research samples of clinical adolescents, no significant differences were found. These findings are surprising since the foster adolescent sample was carefully screened to exclude adolescents with diagnosed emotional or behavioral pathology. Comparisons with other research samples of predominantly home reared adolescents also revealed that significantly more foster adolescents (and clinical home reared adolescents) display levels of ego development on the WUSCT that are characterized by impulsivity, externalization of blame, fear of punishment, manipulation of others, and preoccupation with material possessions than do home reared adolescents, significantly more of whom score at levels characterized by internalization of rules and impulse control, and heightened concern for social acceptability. SES alone was unable to account for these differences.

These findings imply that foster adolescents display a pattern of ego deficits in the areas of autonomous control of impulses and age appropriate concern for extra familial acceptability as compared to home reared adolescents. Very similar findings were reported by McIntyre, Lounsbury, and Berntson (1985) who found, using a picture projective scored to identify mastery of Ericsonian psychosocial milestones, that latency aged foster children could be discriminated from both low and high SES home reared children on the basis of deficits in the mastery of the autonomous control of impulses and extra familial social challenges. Greenberg's (1969) study support

these findings and suggest that age of separation from the family of origin does not impact upon the lower overall level of ego development found among foster children. Foster care, which typically provides external rules for acceptable behavior, appears to be an adequate holding environment for children with these deficits. Problems would only seem to arise when these children reach their majority and foster care is terminated. At that time, these adolescents would be ill prepared to adequately adapt to the social and occupational demands of adult roles. If they are expected to cope with this shift from dependence to independence, some form of psychological remediation would need to be provided for these children who can function adequately within the foster care system, but who are not prepared for independent adult life. A second alternative would be to extend some aspects of the fostering system to provide external structure throughout their lives. A third alternative would be to change the foster care system itself so that it focuses upon preparation for adults roles rather than solely on acceptable behavior. It is unclear from the current data on foster children whether the difference found between them and their home reared peers is due to the effects of the family environment factors that led to placement in foster care, the experiences of separation from the family or origin, the effects of the foster care experience itself, or some combination of the above factors.

The Rorschach Variables

In this study, the Rorschach was used to provide measures of six

independent areas of ego functioning. Of the measures employed, only the use of the F+% had been well documented in previous research. The others, although suggested and partially supported by previous findings, were constructed along theoretical lines and were used for the first time in this study. The results supported the structural independence of the six measures, and suggested that the F+%, when used as a bivariate, Objective Imagination, Defensive Functioning, and Thought Disorder performed in a manner consistent with theoretical predictions. As little useful information was provided regarding Intellectual/Organizational Functioning, the adequacy of this variable as a measure of ego functioning must remain in question.

The only measure which appeared not to function as expected was Interpersonal Expectations. The results of correlating this variable and its components with other measures using two independent samples seemed to indicate that persons who obtain higher scores on Interpersonal Expectations display greater pathology. If one antecedent of psychopathology is a chronic early history of unsatisfying relationships with dependency figures, then it is theoretically reasonable to predict that increased interpersonal vigilance would result from the continued expectation of threat arising within the interpersonal sphere. Since the Interpersonal Expectations variable was predominantly a measure of the degree of articulation of human percepts and their actions, persons who were defensively overinvested in social interactions would tend to obtain higher scores on it due to their overelaboration of responses that were dynamically reflective of their heightened interpersonal concerns.

Although there could be other interpretations of these findings, it is felt this is a reasonable hypothesis that is consistent with both analytic and Rorschach theory.

Future Research

As in many research studies, the results of this study suggest directions for future research. The major question of this dissertation dealt with the convergence or divergence of different measures of ego development derived from two disparate theoretical models. Although the results strongly support the relative independence of the ego measures tested, the skewedness of many of the measures' distributions made it difficult to completely accept this conclusion. To more fully address this question, further research should employ a sample with a greater degree of variability among subjects vis-a-vis the measures used. This could be accomplished by collecting data from a larger number of subjects, by collecting data from home reared adolescents as well as foster adolescents, or by utilizing a different population in which it is known that good variability exists. Such greater variability would also allow for a more statistically meaningful division of the data into those below the Conformist level vs. those at or above the Conformist level. This type of analysis needs to be carried out as the results of this study's sample division was only suggestive due to the small number of Conformist and post-Conformist subjects.

Further research into this question should also involve careful pilot testing of the Rorschach variables so that any modifications in

their construction can be carried out prior to hypothesis formulation and not post-hoc as in this study. Additionally, if the F+% is used, it should be employed using the bivariate computation explained above to accurately reflect functioning in this area. It is recommended that the Interpersonal Expectations variable not be used until a more accurate understanding of what it is measuring can be formulated.

In addition to providing some insights into the relationship between the ego functioning measures, this study incidentally produced some findings that may have some relevance regarding foster adolescents. To adequately test for differences between foster adolescents and home reared adolescents regarding their WUSCT scores, two samples of home reared adolescent cohorts would be needed. As the SES of the foster adolescents in this study was generally low, one would need data from both middle class and lower class home reared adolescents to adequately rule out the effects of SES. If the foster adolescents are found to have lower WUSCT scores, further research would be needed to test for the effects of the foster care experience. One way to accomplish this would be to compare foster adolescents who had just come into foster care with adolescents who had been in foster care for an extended period of time.

The results of this study also generated questions regarding the Rorschach variables used. Further work appears to be needed to understand the three Burstein-Loucks components of the Interpersonal Expectations score. One approach would be to develop more accurate scaling procedures for these scoring categories and then test them against various behavioral and psychological correlates.

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APPENDIX

TABLE A-1
FREQUENCY DISTRIBUTION OF VERBAL INTELLIGENCE
N = 42

Score	Absolute Frequency	Relative Frequency %	Cumulative Frequency %
Below 70	10	23.8	23.8
70 - 79	10	23.8	47.6
80 - 89	9	21.4	69.0
90 - 109	11	26.2	95.2
110 - 119	1	2.4	97.6
120 - 129	1	2.4	100.0

TABLE A-2
 FREQUENCY DISTRIBUTION OF WJSCT SCORES
 N = 42

Ego Level	Absolute Frequency	Relative Frequency %	Cumulative Frequency %
2	3	7.1	7.1
Δ	25	59.5	66.7
$\Delta/3$	7	16.7	83.3
3	1	2.4	85.7
3/4	4	9.5	95.2
4	2	4.8	100.0
4/5	--	--	100.0
5	--	--	100.0
6	--	--	100.0

TABLE A-3
FREQUENCY DISTRIBUTION OF THE BARRON
N = 42

Score	Absolute Frequency	Relative Frequency %	Cumulative Frequency %
20 - 24	1	2.4	2.4
25 - 29	2	4.7	7.1
30 - 34	6	14.3	21.4
35 - 39	9	21.4	42.9
40 - 44	13	31.0	73.8
45 - 49	9	21.4	95.2
50 - 54	2	4.8	100.0

TABLE A-4
FREQUENCY DISTRIBUTION OF F+
N = 42

Score	Absolute Frequency	Relative Frequency %	Cumulative Frequency %
31 - 40	1	2.4	2.4
41 - 50	11	26.2	28.6
51 - 60	4	9.5	38.1
61 - 70	10	23.8	61.9
71 - 80	10	23.8	85.7
81 - 90	2	4.8	90.5
91 - 100	4	9.5	100.0

TABLE A-5
 FREQUENCY DISTRIBUTION OF OBJECTIVE IMAGINATION
 N = 42

Score	Absolute Frequency	Relative Frequency %	Cumulative Frequency %
0 - 19	1	2.4	2.4
20 - 39	1	2.4	4.8
40 - 59	6	14.2	19.0
60 - 79	13	31.0	50.0
80 - 99	7	16.7	66.7
100	12	28.5	95.2
No value	2	4.8	100.0

TABLE A-6
 FREQUENCY DISTRIBUTION OF INTERPERSONAL EXPECTATIONS
 N = 42

Score	Absolute Frequency	Relative Frequency %	Cumulative Frequency %
0 - 4	21	50.0	50.0
5 - 9	9	21.4	71.4
10 - 14	5	11.9	83.3
15 - 19	2	4.8	88.1
20 - 24	2	4.8	92.9
25 - 29	2	4.8	97.6
30 - 34	1	2.4	100.0

TABLE A-7
 FREQUENCY DISTRIBUTION OF DEFENSIVE FUNCTIONING
 N = 42

Score	Absolute Frequency	Relative Frequency %	Cumulative Frequency %
3.0 - 3.1	2	4.8	4.8
3.2 - 3.3	5	11.9	16.7
3.4 - 3.5	7	16.7	33.3
3.6 - 3.7	11	26.1	59.5
3.8 - 3.9	9	21.5	81.0
4.0 - 4.1	8	19.0	100.0

TABLE A-8
 FREQUENCY DISTRIBUTION OF THOUGHT DISORDER
 N = 42

Score	Absolute Frequency	Relative Frequency %	Cumulative Frequency %
0	12	28.6	28.6
.01 - .20	21	50.0	78.6
.21 - .40	7	16.6	95.2
.41 - .60	1	2.4	97.6
.61 - .80	0	--	97.6
.81 - 1.00	1	2.4	100.0

TABLE A-9
FREQUENCY DISTRIBUTION OF INTELLECTUAL/ORGANIZATIONAL
FUNCTIONING
N = 42

Score	Absolute Frequency	Relative Frequency %	Cumulative Frequency %
41 - 50	4	9.5	9.5
51 - 60	8	19.1	28.6
61 - 70	9	21.4	50.0
71 - 80	9	21.4	71.4
81 - 90	7	16.7	88.1
91 - 100	5	11.9	100.0

VITA

Scott D. Glass was born and raised in Waterford, New York. He attended Union College in Schenectady, New York where he was a Nott Scholar and graduated Magna Cum Laude with a B.S. degree with Honors in Psychology. After graduation, he moved to New York City where he attended Teachers College, Columbia University and graduated with a M.A. degree in Psychology and an Ed.M. degree in Counseling Psychology. Scott worked at Postgraduate Center for Mental Health as a therapist for one year and then joined Rosenfeld, Sirowitz, and Lawson, Inc. as a Market Research Project Director where he worked for two years. During that time, he was also employed as an Adjunct Professor at Montclair State University where he taught Experimental Psychology. He left New York to attend the University of Tennessee at Knoxville in 1980, and graduate with a Ph.D. in Clinical Psychology in 1986. As part of his doctoral training, he attended a one year clinical internship at the Veterans Administration Medical Center in Kansas City, Missouri. The author is a member of the Phi Kappa Phi National Honor Society and is a licensed Psychological Examiner in the State of Tennessee.

After receiving his Ph.D., he was employed as a Clinical Psychologist at Cherokee Mental Health Center in Morristown, TN, and was appointed as a Research Associate with the Psychology Department at The University of Tennessee, Knoxville. In addition, he is co-authoring a study with Dr. Anne McIntyre comparing ego development among foster and home reared adolescents.