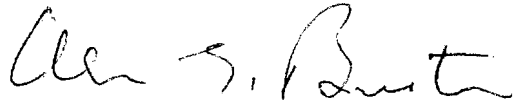


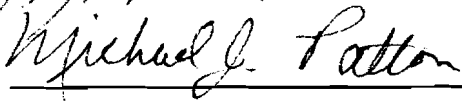
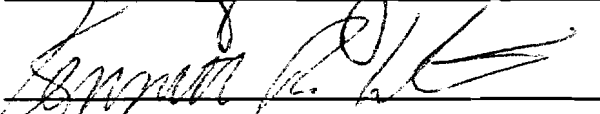
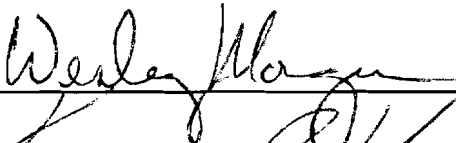
To the Graduate Council:

I am submitting herewith a dissertation written by Joyce Marie Cartor entitled "Loevinger's Ego Development Scale in Well Functioning College Students." 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.



Alvin G. Burstein, Major Professor

We have read this dissertation
and recommend its acceptance:



Accepted for the council:



Vice Provost
and Dean of the Graduate School

LOEVINGER'S EGO DEVELOPMENT SCALE
IN WELL FUNCTIONING COLLEGE STUDENTS

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

Joyce Marie Cartor

August 1987

DEDICATION

This dissertation is dedicated to Dr. Roger Knudson. His unwavering belief in me through the years of my undergraduate and graduate schooling, combined with his incredible enthusiasm for the subject matter of clinical psychology, provided me with invaluable sources of emotional support, self esteem, and intellectual excitement. His impact upon my development as a therapist and teacher has been significant and primary.

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ABSTRACT

The primary purpose of this study was to investigate the existence of different character styles among intellectually gifted people. Two groups of students at the University of Tennessee, Honors students in Physics and Chemistry and students in the College Scholars program, were studied in order to demonstrate that the difference in personality dynamics among intellectually gifted individuals goes beyond IQ level. Loevinger's Washington University Sentence Completion Test of ego development was used as a measure of overall character style. The Rorschach was administered to glean further information about the personalities of the participants, and to investigate the nature of its relationship to the Sentence Completion Test (WUSC).

Significant differences between group means on ego development level were found, with the College Scholars scoring higher. One source of these differences appeared to be the presence of extreme cases, low for the Honors and high for the Scholars. These were examined in more detail. What appears to be of primary distinction between the two groups has to do with minimal level of ego development necessary for success in the two groups. The minimal level for College Scholars is the national modal level, I-3/4, Self-Aware, while the minimum level for the

Honors may be lower. The single Rorschach variable which significantly correlated with ego development level, but accounted for only a minimal amount of the variance, was Imaginal Aspect usage, suggesting that persons at the lower levels of ego development may have their internal reactions more easily stimulated by external stimuli. The lack of other significant correlations between the scoring variables studied suggests that the two instruments measure different aspects of the person despite overlap in their operational definitions.

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GENERAL INTRODUCTION

Educational psychologists and personality theorists have long studied outstanding and exceptional persons, particularly those endowed with the valuable ability of creating new ideas and thinking past the obvious. For example, Lewis Terman and J.P. Guilford both devoted the major part of their careers to the different studies of genius and creative thinking. Although the economic and educational value of new ideas is generally recognized, there appear to be too few people who are capable of producing them. Indeed, many employers of supposedly highly intelligent college graduates criticize their lack of creative thinking in situations where a problem is presented which requires them to look for something other than an already determined "right" answer (Perkins, 1985). Being able to identify those whose outlooks are richer and more creative could certainly be useful. Unfortunately, our ability to identify and cultivate innovative thinkers is limited by incomplete understanding of the intellectual and psychological make-up of these persons.

Research into the area of intellectual giftedness has typically maintained a rigid assumption that giftedness-equal-high-IQ, thus limiting further expansion and application of the concept. Since the advent of the intellectual assessment measures, the concept of

intelligence has frequently been used to define individual and group differences in cognitive and creative potential as if that concept alone encompassed the totality of human thought and imagination. Especially in the schools, IQ has been the critical measure of individual performance and achievement and has even been used as a predictor for future academic success. With the exception of giftedness in the fine arts, which will not be a consideration for this study, differentiation of individual students into categories of gifted, average, or dull has traditionally been based solely upon the IQ metric. The reliance on this criterion for sorting has encouraged an equation of intelligence, based on performance on a fixed set of cognitive tasks, with all types of productive and creative thinking.

Heavy reliance on the IQ measure is understandable in that it is by far the most reasonable approach in existence for quantifying a characteristic as amorphous as intelligence in any manageable way. However, despite warnings from some of the test makers, IQ score and the concept are often equated, and investigators fail to look elsewhere for other characteristics a person might display that may not be measured or tapped by these tests. Some of the early test makers themselves argued that certain abilities are not adequately sampled by the instruments

constructed to measure "intelligence" (Getzels and Jackson, 1962). L.L. Thurstone, one of the early pioneers into the nature of intellectual abilities, made a comment that is still pertinent today when he said:

To be extremely intelligent is not the same as to be gifted in creative work. This may be taken as a hypothesis.

It is a common observation in the universities that those students who have high intelligence, judged by available criteria, are not necessarily the ones who produce the most original ideas. (Thurstone, 1952).

Lewis Terman, in the 1920's, provided one of the first pictures of other aspects of the personality of the individual with exceptional intellectual ability. Terman's work was primarily correlational and his major contribution lies in the information gathered concerning the other qualities associated with this ability. His work showed that the intellectually gifted individual is not a one dimensional "brainy" creature, but rather somebody who is on the average healthier, more attractive, better co-ordinated, and generally enjoying a fuller and richer life (Terman, 1952).

Although Terman's work was followed with more studies on the gifted individual, most of the studies invariably used the IQ as the criterion measure for giftedness. Information about the child with a high IQ accumulated and substantiated Terman's findings. At a symposium on

giftedness in 1954, the works of many of these contributors were summarized. Strikingly, no major discrepancies were found between later works and Terman's initial findings as to the personality characteristics of the high IQ individual; nor was any significant new information about the personality of the gifted individual brought to light (Strang, 1954).

In part, what was not integrated at the 1954 conference was the new work on creative thinking that was being done by J.P. Guilford at that time. Guilford, attempting to define the "creative personality" using a trait approach, had become convinced that "creativity and creative productivity extend well beyond the domain of intelligence" (Guilford, 1950, p.445). He believed that the lack of studies on creative and original thinking reflected the methodological constraints of the testing measures: "the quest for easily objectifiable testing and scoring has directed us away from the attempt to measure some of the most precious qualities of individuals and hence to ignore those qualities" (Guilford, 1950, p. 445). Guilford constructed instruments that were supposed to tap these other qualities and helped to make some of the initial distinctions between differing types of creative and cognitive abilities.

Since Guilford there have been other efforts made to

identify and articulate varieties of creative and intellectual processes not tapped by IQ measures, but which make themselves obvious in any sampling of human behavior. For instance, questions have been raised as to the nature of artistic ability, interpersonal acumen, a sense of humor, and creative thinking and imagination (Gardner, 1983; Stein and Heinze, 1960). The connection, however, between intellectual giftedness, as measured by IQ, and creative approaches to perceiving and construing is rarely investigated. The work most relevant to this issue was done by Getzels and Jackson in the 1950's in which they addressed the question of differences in types of giftedness. Their results lent support to the idea that, while IQ is certainly correlated with exceptional abilities in other realms, it does not by itself account for these abilities. Their work laid the foundations for further investigation into the characteristics of richness, depth, and originality as they pertain to the personality styles of intellectually gifted persons.

Getzels and Jackson posed some provocative questions challenging the widespread use of the psychometric definition of giftedness = high IQ. They argued that the abilities needed to do well on an intelligence test, namely recognition and recall memory, arithmetic ability and verbal fluency, are important but distinctly separate

from creative, spontaneous and inventive thought. They noted the inability of the IQ measure to account for the bulk of the variance in related areas of school achievement and academic performance. Finally, they criticized the field's rigid adherence to the initial concept of intelligence as measured in IQ despite advances in our theories of cognition, learning, and problem solving (Getzels and Jackson, 1962). It is interesting to note that a recent study, published some twenty years later, cites the same criticisms and raises some of the same questions, highlighting the lack of progress in this area of inquiry and the continued assumption that giftedness is one dimensional (Frederiksen, 1986).

The past studies of genius and creativity have provided valuable information concerning the qualities associated with exceptional intellectual ability. Despite this, the question remains unanswered as to the nature of the differences in the personalities of those persons who seem to possess an affinity for the style of thinking characterized by retaining the known and learning the predetermined versus the type of thinking characterized by revising the known, exploring the undetermined, and constructing what might be.

It seems that what is needed here is an overarching conceptual model that could incorporate information about

high intellectual endowment and creative productivity with information about the processes by which a person finds consistent and coherent meaning in experience in a manner that would facilitate an understanding of how a person approaches and construes the world. Perhaps then some light could be shed on the issue of personality style among gifted persons. Since it is clearly valuable, especially in this complex world, to be able to think flexibly and creatively, especially as we come across more and more problems and situations in which there are no obvious answers, it follows that the study of those who are able to be inventive and innovative in their perspectives would be of value.

CHAPTER I

REVIEW OF THE LITERATURE

In the general arena of giftedness and creativity there are a series of loosely interrelated concepts that have been examined. Those most primary include the conventional studies of intelligence and IQ, the newer work on cognitive styles, the studies of creativity and related personality and motivational characteristics.

This review of the literature will examine the overlap of these domains as well as their separateness. Special emphasis will be given to the literature concerned with the relation of these concepts to persons of exceptional abilities.

Traditional Notions of Intelligence

The domain of intelligence has been investigated from a number of perspectives, the primary ones being the investigation of its nature and definition, and the investigation of its measurement (IQ). There is also a large component of this literature which addresses itself to the study of exceptional intellectual endowment, usually couched in terms of genius or giftedness.

It has been most popular in psychology to view intelligence as a set of underlying abilities or factors

which facilitates the study of individual differences. This is a dispositional approach which assumes the existence of these abilities in greater or lesser degrees in each person. There are basically two ways in which to construe these underlying abilities: as separate and independent or as woven together into a bigger, more general ability (i.e. general intelligence). Theorists in this area differ greatly as to the number of factors of intelligence that exist and as to their interrelatedness. Spearman, in 1904, proposed the existence of a general factor (g) and a variety of specific factors (s) which are permeated, and therefore have their limits determined, by "g" (Wechsler, 1939/1974). Spearman believed that all intellectual abilities could be expressed as functions of these two factors (Sternberg, 1985). This is similar to the later view of Raymond Cattell, who in the 40's, began to promote a notion of two "types" of intelligences which he called "fluid" and "crystallized." He proposed that fluid intelligence is our inherited ability to adapt to and manipulate our environment; crystallized intelligence was more of a set of learned skills (Guilford, 1980). With both these conceptualizations, however, what emerges as of primary interest is the amount of general or fluid ability one possesses.

There are those who rejected the idea of limiting the

view of intelligence to two factors. Thurstone suggested that intelligence was comprised of seven "primary mental abilities", which consisted of verbal comprehension, verbal fluency, number ability, spatial visualization, memory, reasoning, and perceptual speed (Sternberg, 1985). For Thurstone it was the different combinations of each of these factors which equaled overall intelligence. J.P. Guilford's view expanded the notion of mental abilities to 150 which he has integrated into a spatial, three dimensional model of overall intellectual functioning known as the Structure of Intellect model (Guilford, 1967). According to Guilford, all of the previously mentioned mental abilities can be subsumed under his SI model, and he makes a clear statement that the notions of "g" and "s" or fluid and crystallized intelligence are not necessary to understanding intelligence (Guilford, 1980).

Although there are apparent differences in these views, their similarities may be of more importance. Despite the lack of consensus about what exactly intelligence is made of, the prevailing view in the field borrows from each of these factorial approaches and the most accepted model of intelligence is a hierarchical one with first-order factors, or specific abilities, on the bottom (eg., verbal comprehension, reasoning ability, ideational fluency), and a set of higher order factors

above them that represent the intercorrelations between the first-order factors, and, finally, general intelligence, or "g", at the top of the pyramidal structure (Frederiksen, 1986).

This model has largely determined the development of the psychometric measures of intelligence, which is commonly referred to as IQ, or the Intelligence Quotient. Although competing theories exist and are given much attention in the literature, especially by critics of the hierarchical model, the primary means of measuring intellectual ability remains the traditional IQ test which consists of tasks measuring a limited set of specific abilities which are then combined to produce a mathematical indice of general intelligence (i.e., the Full Scale IQ Score). Although the first intelligence test, originated by Alfred Binet at the turn of the century, was aimed at improving education in the public schools of France, the modern derivatives of that intelligence measure are today used primarily for the purpose of distinguishing individual differences among persons (Gould, 1981). Given the serious implications of this, especially as these tests are used for educational and clinical decision making, it is important to keep in mind the implicit assumptions of this testing approach.

For example, two of the most frequently used

intelligence tests are the revised versions of the Wechsler Adult Intelligence Scale and the Wechsler Intelligence Scale for Children (WAIS-R and WISC-R). These tests were originally designed by David Wechsler whose view of intelligence reflected Spearman's thinking. According to Wechsler, "Intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment. It is global because it characterizes the individual's behavior as a whole; it is aggregate because it is composed of elements or abilities which, though not entirely independent, are qualitatively differentiable. By measurement of these abilities, we ultimately evaluate intelligence" (Wechsler, 1939/1974, p. 32). Although Wechsler clearly states that what is measured by IQ tests cannot be entirely equated with intelligence he did believe that from what is measured the amount of a person's general intelligence can be inferred, stating that we "measure something which it is hoped will emerge from the total of the subject's performance, namely, his general intelligence" (Wechsler, 1939/1974, p. 33). Although there are other frequently used tests of intelligence, for instance the Stanford-Binet, their format is roughly equivalent to the Wechsler tests as is their assumption of an underlying general intellectual

ability which can be inferred from a person's performance on a series of subtests.

Given the generalized acceptance of the traditional IQ test, it is interesting to note the lack of emergence of a clear definition of intelligence. For example, examine the definitions of intelligence given by some of the early experts compiled in 1921 for the Journal of Educational Psychology and reported in Robert Sternberg's 1985 book:

The power of good responses from the point of view of truth or fact (E.L. Thorndike);

The ability to carry on abstract thinking (L.M. Terman);

The capacity to inhibit an instinctive adjustment, the capacity to redefine the inhibited instinctive adjustment in the light of imaginably experienced trial and error, and the volitional capacity to realize the modified instinctive adjustment into overt behavior to advantage of the individual as a social animal (L.L. Thurstone);

The capacity to acquire capacity (H. Woodrow) (p. 32).

David Wechsler's definition has already been mentioned. The point here is the relative lack of consistency and clarity among definitions of intelligence which has yet to be corrected, although it is true that some general themes emerge - namely, the ability to profit from experience and to adapt to one's environment. Today these ideas are most clearly discussed as verbal intelligence, problem solving ability and practical intelligence (Sternberg, 1985).

Giftedness. There has been a persistent interest, within psychology and without, in people who exhibit exceptional degrees of intellect or talent. Often these are the people who most clearly contribute something worthwhile to society and much work has been done concerning the early identification and cultivation of these exceptional minds. This interest can be traced at least back to Frances Galton whose primary concern was eugenics, the improvement of the race by permitting continued breeding of only those with average to superior qualities (Gould, 1981). Although this is an extreme view the interest in the cultivation of the gifted remains a contemporary concern.

Lewis Terman is perhaps the best starting point here as his voluminous work on the longitudinal study of "geniuses" has largely shaped the perception of giftedness in this century. Terman assumed a direct relationship of giftedness to intellectual activity and considered the standardized intelligence test to be the assessment method of choice in distinguishing superior intellect (Terman, 1925). The criterion most often used for classification of someone as gifted consisted of achieving a Full Scale IQ score almost two standard deviations above the mean. This line of thinking remained accepted by the majority of educators and researchers for the first half of this

century. In fact at a symposium on giftedness conducted in 1954, which had an impressive list of presentors including Terman himself, no significant new information was presented as to the nature of giftedness and its correlates (Strang, 1954). Clearly the investigations up to that point had been focused on the single criterion of IQ as the determiner and definitive descriptor of intellectual giftedness. The emphasis of most research from the early 1900's to the 1950's had been on identifying other personality traits associated with high IQ. Although superior school achievement has been found to correlate with high IQ, no set of consistent personality traits have been found to correlate with academic achievement and IQ measures. Neither has a clear and consistent set of values and goals emerged to characterize the high IQ individual. What has been found is that the ability to organize, greater self acceptance, more interpersonal relationships, and a higher level of self esteem are correlated with both high IQ and superior academic achievement (Lenning, Munday, Johnson, Well, and Bruce, 1974).

The enormous amount of attention given to the study of giftedness in the literatures of psychology and education resulted in a great increase in awareness of the differing educational needs of children. Special

education programs for the gifted were initiated throughout the entire country and educators became more focused on the special needs and abilities of their exceptional students as well as their problematic pupils. With the development of Special Education as a field of advanced study in the 1960's and 70's even more has been discovered about the nature of the gifted child and his or her particular qualities and attributes. What has emerged is a clear call for the revision of the concept of giftedness, particularly for its expansion to include notions of creativity, special talents, and unusual interpersonal skill (Getzels and Jackson, 1962; Torrance, 1984; Taylor, 1984; Yarborough and Johnson, 1983). Related to this is the consistent criticism of the intelligence test as inadequate to measure the complete domain of giftedness and the increasing knowledge that many important cognitive functions are not tapped by this measure (Yarborough and Johnson, 1983; McKean, 1985; Frederiksen, 1986).

Howard Gardner's (1983) response to this critique is innovative, without being radical. He hypothesizes that there are seven broad categories of intelligence, some of which are unusual: verbal, mathematical, and spatial intelligence; also musical ability, interpersonal intelligence, bodily skills, and self-knowledge. Each

intelligence involves unique cognitive skills and must be assessed independently. Gardner rejects the notion of "g" and supports the call for more differentiated testing.

Although the line of thinking that current intelligence testing is too limiting appears to be firmly established and accepted theoretically by both educators and educational psychologists, the implementation of these views in the school systems has lagged behind the theorizing. Yarborough and Johnson's study (1986) reveals a dismaying persistence on the part of public educational systems to continue to use the IQ as the criterion of choice for admission into programs for the gifted, again revealing the degree to which the concept has become embedded in the early conceptions of intelligence as a general ability.

Expanding the Concept of Intelligence

Although the psychometric view of intelligence as a quantity of a general factor has largely determined the method of intelligence testing in this country, that is not to say that alternative conceptualizations do not exist. The primary alternative to viewing intelligence as an ability is to think of it as a cognitive process or set of processes. Kurt Goldstein, in his study of schizophrenic thought in the 1930's, determined that there

were two basic cognitive attitudes, the concrete and the abstract. These attitudes are not specific aptitudes but rather "capacity levels of the total personality, each furnishing the basis for all performances on a certain plane of reference to the outer world situation" (Kasanin, 1939, p. 17). Although each attitude determines a behavior range which would involve performance capacities, Goldstein disdains the idea of these performances constituting discrete cognitive entities. If analyzed closely, he reasoned, a set of seemingly diverse performances and behaviors has "as a common basis one functional level of integration" (Gurwitsch, Haudek, and Haudek, 1971, p. 366). Basically what these attitudes explain are the manner in which a person manipulates and operates on ideas, perceptions, and thoughts. For neurologically and mentally intact people both attitudes are always present, their operation determined by the demands of a given situation (Gurwitsch, et al, 1971).

An alternative line of thought lies in the psychoanalytic investigation of thinking, perhaps put forth most succinctly by David Rapaport. Building upon the energy model, Rapaport postulates a tension-reduction model of thinking which characterizes ideas as indicators of tension arising from drives or needs that are seeking discharge. The ideas originally appear in hallucination

or memory form and discharge a portion of the built up drive. This is primary process thought. Each sequence of drive build-up and discharge through primary process channels builds structures in the original unstructured unawareness of the child. Secondary thought processes develop as further structures are put in place through continuing drive build-up, delay, and partial discharge processes (Holt, 1967).

Although Goldstein's and Rapaport's theories are not necessarily compatible ideas, they do represent approaches to the question of intellect and cognition that are qualitatively different from the psychometric formulations and illustrate the thinking that can arise when intelligence and cognition are investigated as processes. The modern day developments of these approaches are most clearly represented by the literature on cognitive styles and information processing systems which came into its own in the 1960's but was actually preceded by the works of Kurt Lewin and George Kelly. Each of these theorists devised cognitive theories of personality before cognitive psychology was truly established. Often their contributions to the development of the cognition literature are overlooked (Pervin, 1985).

Lewin's Field Theory was both a drive model with tension reduction as a central motivating force, and a

cognitive model which suggested that a person comes to know by analyzing causal relations between environmental events and objects and building scientific constructs from the inferences drawn. Greater cognitive skill and expertise is a function of higher and higher levels of differentiation within one's "life space" as a result of more and more interactions with the environment (Sahakian, 1970).

George Kelly's personal construct theory illustrates the kind of thinking that later developed into the more precise information processing models of cognition. Kelly's view regards us all as scientists, gatherers and evaluators of knowledge, who formulate personal theories, or constructs, about the world, our selves, and the relationships between the two. The emphasis is how one comes to know the world in a meaningful way thus making it more predictable (Kelly, 1955).

In the 1960's, models of drive discharge were being supplanted by an emerging view of the human being as an information processing organism. More and more interest was being taken in the nature of cognitive processes and the process by which a person organizes internal and external stimuli into meaningful perceptions and ideas. Neisser's 1967 book, Cognitive Psychology, is one of the most definitive statements of the cognitive orientation.

Neisser essentially modified Piaget's ideas about the development and refinement of schemas, proposing a continuing cycle of perception involving schemas, searches for knowledge to fit existing schemas, and perceptions which reflect a constant revision and modification of the schemas - essentially, what one looks for determines what one sees, which in turn determines what one looks for (Neisser, 1967).

Although Neisser later recanted some of his ideas, cognitive theorizing flourished through the 1970's and 80's, emphasizing concepts such as schema, plans, problem solving, attributions, encoding strategies, speed of processing, and self-regulatory systems (Pervin, 1985; Sternberg, 1985). What is of import with all of the ideas emerging from this paradigm is the interest in the active process by which people go about interpreting their world and making it meaningful. The problem with this area lies in the relative lack of integration among the theorists who have often made up their own cognitive style labels without addressing the possible overlap of their individual work with that of others in the field.

Perhaps the most well known and enduring cognitive style is Witkin's field independence-dependence which suggests embeddedness in context as the determinant for how an individual organizes his/her experience. The data

supporting this stylistic dichotomy certainly indicate its value as a stable personality dimension and suggests that further work concerning its relationship to other characterological variables would be worthwhile (Singer and Singer, 1972; Pervin, 1985).

Other cognitive styles which have been investigated include repression-sensitization (Weissman and Ritter) which encompasses the extent to which a person can remain open to a variety of experiences, internal and external, without serious anxiety or defensiveness interfering with their perceptions. People classified as high repressors are more prone to see things in rigid dichotomies and to not note some important environmental and internal information. High sensitizers, on the other hand, are more interested in intellectual activity and exploration, are more able to be aware of and tolerate inconsistencies, and are less prone to depression and self doubting, thus permitting them a fuller and richer perception of the world and of themselves. A high repression style has also been indirectly correlated with high field dependence (Singer and Singer, 1972).

Related to Weissman and Ritter's styles is the work of Bronson on the varying degrees of fear of novelty in children, which limits their perceptual panorama and their intellectual complexity. Goldsmith (1984) proposes an

adaptation-innovation dimension which delineates problem-solving styles. Adaptors tend to solve problems by doing things better within existing frameworks, while innovators change the frameworks and do things differently. Grove and Eisenman's studies of the complexity-simplicity dimension in construing are also mentioned frequently in the literature (Singer and Singer, 1972; Pervin, 1985; Sternberg, 1985). Along similar lines is the "depth of experiencing" construct proposed by Wexler. The depth of experiencing of which a person is capable "reflects the amount of cognitive activity expended in elaborating and synthesizing facets of meaning with respect to the emotional state" (Carlson, 1975).

Relation to Giftedness. The cognitive, information processing approach to intelligence arose in part as a reaction to the essential failure of the psychometric approach to shed light on the actual processes which constitute intellectual performance and activity. However, this literature has had relatively little to say about the practical application of these concepts to individual differences, especially in relation to the nature of giftedness (Davidson and Sternberg, 1984). In fact, Pervin's 1985 review of the literature includes a rather scathing remark as to the actual relevance of these ideas to real life: "...while current cognitive

approaches to personality give lip service to individual differences, the organization of cognitive structures, and idiographics, the fact of the matter is that relevant studies are hard to come by" (p. 97).

While this seems to be generally true, there are the beginnings of attempts at the integration and application of these concepts to the area of giftedness. Most notable and perhaps most passionate is Davidson and Sternberg's attempt to address the nature of giftedness with Sternberg's new model of intelligence called the Triarchic Theory (Davidson and Sternberg, 1984). Sternberg's theory breaks intelligence into three parts, the first of which has to do with the internal mental mechanisms with which a person plans and carries out tasks. According to Sternberg, this is similar to what others have called problem solving but also includes the mechanisms by which a person plans and evaluates potential problem solution strategies. The second part of the triad takes into account the effect of experience. The intelligent person is capable of solving problems quickly and also retaining the problem solving method in abstract form so that he or she can solve familiar problems by rote later on, thus freeing the mind for other things. The third part of the triarchic theory is practical intelligence, or the relation of intelligence to the external world. This can

be loosely translated into common sense which is largely a function of what Sternberg refers to as tacit knowledge - what they don't teach you in school (Sternberg, 1985).

In keeping with his theory Sternberg views giftedness as the possession of exceptional insight skills (a mental mechanism concerned with the ability to do nonentrenched thinking) and an unusual ability to adapt to any environment in which one finds oneself (Davidson and Sternberg, 1984; Sternberg, 1985). More specifically, Sternberg and Davidson (1984) hypothesize three separate but related processes involved in insightful thinking. These processes are selective encoding, the ability to sift relevant information from irrelevant; selective combination, the capacity to synthesize what appear to be isolated pieces of information into a whole which may not resemble its parts; and, selective comparison, integrating new information with information acquired in the past. The author's initial test of their hypothesis that gifted children are those who possess greater capacities for insightful thinking was successful (Davidson and Sternberg, 1984). Further work remains to be done on this.

Another potentially promising application of cognitive style theory to the nature of giftedness has been done by Kammer who has applied Hunt's model of

conceptual level to this area. Kammer's belief that giftedness is not adequately reflected by IQ scores is consonant with the new thinking in the educational psychology literature. She postulates that "assessing students' abilities to process information and assume responsibility for their own learning could facilitate the integration of gifted identification and program development" (Kammer, 1984, p. 89). For this she suggests the use of Hunt's technique for assessment of conceptual level (CL) which describes a person's conceptual organization in terms of conceptual complexity, interpersonal maturity, and the ability to accept responsibility. Included in the notion of conceptual complexity is the ability to make increasingly finer discriminations in cognitive information and integrate the levels of distinction. Inherent in Hunt's ideas about interpersonal maturity is the idea of flexibility and the capacity to reflect upon oneself. The results of Kammer's use of the CL instrument with high school students already identified as intellectually average or gifted by IQ measures demonstrated that the mean performance for gifted students on the CL measure was significantly higher than that of the nongifted students. It also revealed that some promising students not targeted as gifted by traditional measures could be identified with the CL measure. She

notes, however, that neither approach alone is satisfactory for the identification and understanding of these students.

Related Concepts

Creativity. Within the area of creativity, research productivity has waxed and waned. Its conception as a separate arena of study took place in the 50's, its primary impetus stemming from the strident and insistent writings of J.P. Guilford (Helson and Mitchell, 1978). Today, the focus and interest in this potentially fruitful concept appears to have been revived.

Perhaps one of the most frustrating and unproductive aspects of the work done on creativity stems from the lack of consensus among psychologists as to the definition of the concept. Although this fact has been pointed out by numerous reviewers (Dahlstrom, 1970; Dellas and Gaier, 1970; Golann, 1963; Helson and Mitchell, 1970; Stein and Heinze, 1960), a definitive or integrated agreement has yet to be reached on this issue. Especially confusing is the mixup in the literature of the studies examining artistic creative talent with those examining creative thinking. In this light, it seems productive to initially review some of the more popular and differing views of the creativity notion.

As is often the case in psychological writings, a relevant starting point is the thinking of Sigmund Freud. The traditional psychoanalytic notion of creativity, as postulated by Freud, is that it represents a temporary weakening of the repressive barrier, brought on by a primitization of the ego, which allows theretofore unconscious and conflictual psychosexual drive material into awareness or pre-awareness (the preconscious). Inherent in this view is the assumption that creative processes stem from the same impulses and conflicts from which neurotic and psychotic problems arise. What salvages the creative person (and here it is worth noting that Freud was referring to those with artistic leanings) and distinguishes them from a neurotic or psychotic is the effectiveness of their ability to sublimate the drive material and thus use it to produce something creative and artistic (Freud, S., 1917/1977). This was a view shared by many of the early psychoanalysts, such as Abraham and Brill (Stein and Heinze, 1960).

Modification of these original views by the neo-Freudians resulted in Ernst Kris's famous notion of regression in the service of the ego, which embraces the idea of creativity stemming from weakening of the repressive barrier, thus allowing unconscious processes into awareness, but elevates the creative process to a

healthier place. A subtle, but important, distinction between Kris's ideas and those of Freud was the shift in emphasis from the role of unconscious processes to the role of mentation which is not fully conscious but which is potentially so - the idea of the preconscious as a productive mental system (Kubie, 1958). Other related but different views from the psychoanalytic camp include those of Fairbairn, Sharpe, and Lee who saw creative production as a means of restitution for early destructive impulses towards the parents - again the sublimation motif is clear.

For all of these theoretical writers the subject matter was primarily concerned with the creative artist, versus the creative thinker, although their ideas have been generalized by some to incorporate a theory of creative thinking. For instance, Getzels and Jackson, in their study of highly intelligent and highly creative thinkers, postulated that the preconscious material of these children was more available to them, lending a more intense affective tone to their perceptions of the world around them (Getzels and Jackson, 1962). Heinz Werner's comparative developmental theory which characterizes development as increasing differentiation and heirarchic integration has also been used as a launching point for investigations into the cognitive functioning of the

creative person. Werner's view, which has similarities to that of Kris, suggests that "creativity presupposes mobility in terms of regression and progression" resulting in a reorganization of information into new and unique patterns (Hersch, 1962).

The humanistic writers viewed creativity from a motivational point of view ranging from the impetus to compensate for a sense of inferiority [Adler], to a desire to immortalize oneself [Rank], to an urge towards self-actualization [Goldstein, Maslow, Rogers] (Stein and Heinze, 1960). Carl Rogers proposed three qualities of the creative person which are: openness to experience; an internal locus of evaluation; and an ability to playfully toy with concepts and elements (Golann, 1963). This is, in part, similar to the idea of Schachtel who distinguishes creative thought process from primary process in that the former is not due to drive discharge but rather to the openness of the person to the world which means that "one's sensibilities are more freely receptive to new reflections of the world and its objects" (Getzels and Jackson, 1962, p. 112). This allows the person the chance to "try out" various approaches to the object of perception through thought and feeling.

Three of the primary foci in the investigation of creativity during the past three decades have been its

relationship to intelligence, the identification and measurement of creative abilities and processes, and the identification of the personality traits associated with creativity. For the purposes of the present study only those investigations into creative thought and perceptual processes, versus artistic creativity, will be discussed.

Guilford, in his 1950 article entitled "Creativity," states his belief clearly that "creativity and creative productivity extend well beyond the domain of intelligence" (p. 445). He goes on to hypothesize that there are primary mental abilities relating to creativity which account for such activities as "inventing, designing, contriving, composing, and planning" (p. 444). His tireless work over the years with the factor analytic method resulted in the establishment of his famous concept of "divergent thinking" which he considered to be "a mode of productive thinking, typical of the creator, which tends toward the novel or unknown" (Dellas and Gaier, 1970). Subsumed under his Structure of Intellect model, the divergent thinking mode encompasses anywhere from 16 to 24 intellectual abilities. The most firmly established of these include the factors of ideational fluency, word fluency, spontaneous flexibility, associational fluency, originality, adaptive flexibility, elaboration, sensitivity to problems, verbal

comprehension, originality, and redefinition (Dellas and Gaier, 1970; Guilford, Merrifield, and Cox, 1961). Guilford believes that these factors are distinct from the factors which account for IQ, and although there is some minor correlation of the creative factors with performance on IQ tests, he maintains that it is not high enough to predict from, nor is it adequate or appropriate to test for creativity with measures of intelligence. Guilford found it especially incorrect to equate giftedness in IQ with giftedness in creativity (Guilford, Merrifield, and Cox, 1961).

Getzels and Jackson, supporting the intelligence/creativity distinction, looked at two samples of children, one whose members were in the top 20% of their peers on the intellectual measures administered but not on measures of creativity, and one whose members were in the top 20% of their peers on the creativity measures administered but not intellectually. The High Creativity group's mean IQ was 127, below the mean IQ of the total population which was 132. The mean IQ of the High Intelligence group was 150. Despite the significant differences in mean IQ's both groups were highest in the population on measures of school achievement; however, interviews and questionnaires revealed that teachers clearly preferred the high IQ children to the highly creative children. These results

emphasize the inadequacy of either IQ or teacher ratings for identification of all children of high potential. Examination of the writing and perceptual styles of the two groups revealed that the highly creative subjects exhibited a striking level of imagination, originality and playfulness not seen with the high IQ group (Getzels and Jackson, 1962). According to the authors, "They seemed to 'play with' the picture stimulus for the pleasure of invention rather than 'labor' the stimulus in order to find the 'correct' theme" (Getzels and Jackson, 1958, p. 77).

The above study, as well as the eight partial replications of it that were done by Torrance, did help distinguish creative thinking as a partially separate phenomenon from intelligence. However, the data also indirectly point to some relationship between IQ or intelligence and creativity, since by no means can the High Creativity group be considered unintelligent (in fact, their mean IQ of 127 would alone qualify them for entrance into gifted programs in most states in the U.S.). Despite many good solid demonstrations of the lack of significant correlations between IQ and measures of creativity (Dahlstrom, 1970; Golann, 1963; Guilford, 1967; Helson and Mitchell, 1978; Torrance, 1984), there exist equally solid demonstrations of intellectual superiority

as the primary determinant of creative performance (Kershner and Ledger, 1985). Obviously, no black and white distinction has emerged, suggesting that the relationship between intelligence and creativity is more complicated. This is actually not new thinking -- Thurstone in 1950 suggested that the two were probably correlated, as did Stein and Meier in 1955. Stein and Meier's study of chemists with PhD.'s suggested that beyond a certain point, roughly the 95th percentile, IQ becomes less significant for creative productivity. The idea that creativity may have a non-linear relationship to IQ was also suggested by Barron in 1961. He demonstrated that a small positive correlation (about .40) exists between intelligence and creativity for the total range of each capacity, but that beyond an IQ of about 120, intelligence as it is currently measured is unimportant for creativity (Golann, 1963). The two competing, usually implicit, assumptions among investigators in the field are that there is a positive linear relationship between IQ and creativity; or, that the relationship is somewhat fan-shaped with a wide range of creativity at the high IQ levels and less variation at the lower levels, implying that the average IQ for the highly creative person is already a superior one (Dellas and Gaier, 1970).

The argument about the creativity/intelligence

distinction can easily become circular and irrelevant to the task of increasing current understanding of gifted persons. Perhaps a more fruitful investigatory approach can be found in the literature concerned with the modes of thinking and perceiving that are characteristic of high creatives. Wallach and Kogan (1965) have been very outspoken about this issue. From their intensive review of the literature of the 50's and early 60's they concluded that the existing creativity measures were as strongly related to general intelligence as they were to each other. They were particularly critical of the measures used by the Getzels and Jackson study and the Torrance studies. Although they strongly embraced the hypothesized distinction between the two domains, they felt that there had so far been a failure to measure the dimension of creativity. Their definition of the concept borrows heavily from Carl Rogers when they state that creativity is the "ability to generate unique and plentiful associations in a generally task-appropriate manner and in a relatively playful context" (Wallach and Kogan, 1965, p. 292). Their conclusion, following a lengthy study of 151 fifth grade children, was that creativity is a mode of thinking which is independent of general intelligence and independent of the creativity

measures which approach it as a trait (Wallach and Kogan, 1965).

Preference for cognitive complexity has been one of the stylistic variables which has emerged to distinguish the highly creative. This concept, originally proposed by Barron, suggests that a preference for "the rich, dynamic, and asymmetrical" versus a preference for simplicity is a perceptual style typical of both the creative thinker and the creative artist (Dellas and Gaier, 1970, p.59). Cognitive flexibility, or having greater access to both mature and primitive mental processes, is another stylistic feature which appears to characterize creative thinkers and artists (Dellas and Gaier, 1970; Hersch, 1962). The important aspect of this style appears to be that of ego control which permits temporary regression to be useful and productive rather than pathological. Dellas and Gaier (1970) state that, "Regression is not symptomatic of loss of ego control, but, rather, appears to be a part of the creative individual's thinking development, since primary process seems to be well integrated with secondary process" (p.61). A related and recent study (1985) by Kershner and Ledger using Torrance's Your Style of Learning and Thinking test concluded that an "Integrated" style of thinking in which both right hemisphere and left hemisphere capacities are

freely available is more characteristic of highly creative children of above average intelligence. Highly creative children of average intelligence preferred a left hemisphere style.

There can be no doubt that cognitive characteristics are of much importance in understanding creative people. However, it is clear that they do not operate in isolation but rather within the context of a whole personality. The study of the personality and motivational aspects of the creative individual began with earnest in the 1960's and has increasingly been the focus of much current research. As is typical in this area of study, the literature is a confusing conglomeration of isolated studies using different populations and different approaches with few attempts at integration. Interestingly enough, despite the inconsistencies in the research, there is some agreement as to which personality characteristics are typical of both creative thinkers and creative artists (Dellas and Gaier, 1970).

One of the consistent qualities associated with creativity is something often called perceptual openness which is conceptualized as "greater awareness of and receptiveness to not only the outer world but also to the inner self" (Dellas and Gaier, 1970. p. 61). This is consonant with Getzels and Jackson's (1962) discussion of

their creative subjects as having greater insight, greater social seriousness, greater capacity to be personally introspective without fear of the inner world.

The list of traits consistently associated with creativity is lengthy with some overlap. The following is a listing of the most established personality attributes found in numerous studies using numerous populations. A high need for independence appears to be a necessary creative characteristic. Related to that are qualities of encapsulated introversion marked by a strong need for privacy but also a sophisticated interpersonal capacity and attunement. Creatives also appear to be less concerned with the judgements of others (similar to Roger's notion of internal locus of judgement), more assertive, more self sufficient, less paranoid. An interesting paradox along this line is the finding that high creatives are often more anxious, which appears to be a function of their propensity to introspect and hold in awareness ambiguities and painful knowledge as well as pleasant thoughts. They seem to manifest a consistent curiosity or need to know, are more interested in ideas than things, and have the capacity for sustained, intrinsic involvement in their work. A characteristic that frequently emerges is sometimes called impulsivity and sometimes called spontaneity of ideas. Perhaps what

is meant here is a greater freedom to trust one's own perceptions and act upon them. This may be related to the greater adventuresomeness and dominance that is frequently attributed to creative persons. Finally, it has been found that high creatives are more sensitive and intuitive and are able to communicate feelings and experiences in an articulate and enriching manner (Dahlstrom, 1970; Dellas and Gaier, 1970; Golann, 1963; Stein and Heinze, 1960).

It is clear that abundant information has been gathered as to the nature of creativity. This has primarily concerned the intelligence/creativity distinction, the cognitive functioning of the creative process, and the personality characteristics associated with creativity. What has yet to emerge is an effort to integrate the cognitive and personality data into coherent discussions of the personality types or styles of creative persons. Although there is a recent study by Krippner (1983) attempting to use the Jungian typology as a framework for conceptualizing creative persons, this is yet to be a focus in the literature. This tends to limit our understanding of these persons to one dimension (eg., cognitive style) or to a listing of traits.

Personality Style and Character. This aspect of the literature was reviewed because the literature on intelligence, IQ, and creativity did not provide an

adequate understanding and description of the total personality of the gifted individual. An examination of the work on personality or character style was conducted in hopes of finding a more in depth model for articulating the psychological make-up and processing of intellectually gifted and creative thinkers.

This was not a simple task as the lack of theory building and model formation is currently a problem in the field. In fact, the reviews of the personality literature for approximately the past fifteen years appear to resound the same theme. Consistently called for is integration of the research findings into theories of personality types, thus facilitating an understanding of the person as a whole versus as a function of the experimental situation. (Carlson, 1975; Dahlstrom, 1970; Helson and Mitchell, 1978; Loevinger and Knoll, 1983; Pervin, 1985; Singer and Singer, 1972; Sundberg, Snowden and Reynolds, 1978). Rae Carlson (1975) contends that a "most serious problem remains the absence of any widely shared, comprehensive, and dynamic theoretical framework capable of posing significant, researchable questions or tying together research findings" (p. 396). What follows is a review of some of the more promising attempts at a reconciliation of this problem.

The theory of character structure proposed by

Malerstein and Ahern (1982) builds on the Piagetian model and defines character as a person's "most basic and abiding intrapsychic organization as a social being: his primary concerns and his system for processing data involving person relationships" (p. 24). These authors make a distinction which many theorists do not, calling personality the "cloak" worn over the character structure, primarily consisting of traits and defenses. They propose three basic character structures each of which determine the way in which the person construes the self in the social world. The first structure is Symbolic, involving an internal object world of part objects and part self, with a serious blurring of boundaries between self and other in relationships. Primary issues are identity and attachment. The second structure is the Intuitive where the person is more concerned with getting narcissistic supplies. Boundaries are loose but not blurred. Others are construed in terms of the needs they meet based on external cues. The third structure is the Operational. Social data are processed via a system of classification and ordering. Self and others are understood in terms of roles and functions. Mutuality is possible (Malerstein and Ahern 1982).

Another intriguing model of personality style is that of Little (1976) who discusses the characteristic ways in

which people construe the environment. Using what he calls "specialization loops" he is able to predict relationships between cognition, affective response, and behavior for his four types. Little suggests that the world is made of things and people. A person develops an orientation toward one or the other or both to greater or lesser degrees. He suggests that there are Person-Specialists who construe experiences in terms of personality attributes and interpersonal tones, paying little attention to physical objects. They have a primary interest in encounters with people and little interest in working with things. There are Thing-Specialists who construe both persons and things in a physicalistic manner. They have a limited, simplified view of the internal worlds of themselves or others and prefer mechanical or analytic activities involving objects, machines, or scientific ideas. The Nonspecialists express comparatively little interest in persons or things. They are withdrawn, negativistic, and unexpressive. The Generalists have orientations towards both people and things and are interested in encounters with both. They construe persons personally and things physicalistically. They may have a tendency towards information overload.

This emphasis on interpersonal construing is not new, of course. Harry Stack Sullivan (1953) theorized that

"personality is the relatively enduring pattern of recurrent interpersonal situations which characterize a human life" (p. 110-111). This is what he came to call the self-system which encompasses one's interpersonal and perceptual style and which continues to develop throughout the lifespan in response to the person's maturing needs and capacities.

An idea inherent in Sullivan's model is that of increasing complexity and differentiation brought about as a necessary response to the intake of new information. This is not unlike the Piagetian and Kohlbergian conceptions of cognitive and moral development. Content aside, the model of development each has used involves increasing complexity that has to do with becoming more and more aware of one's separateness from but relationship to the world. The greater the degree of each, the more able one is to see multiple possibilities or dimensions in an experience (Duska, 1975; Kohlberg, 1984; Loevinger, 1976; Piaget, 1975).

Jane Loevinger has built upon the ideas of Sullivan, Piaget and Kohlberg to postulate a theory of character structure which she has called a model of ego development. This construct constitutes an individual's frame of reference by which one characteristically organizes, synthesizes and gives meaning to one's sense of self in

relation to the environment and to others. She has borrowed from Isaacs' concept of "relatability" which involves the development of the capacity to have relationships through a process of increasing differentiation of self from other, with a corresponding increase in the affective appreciation of others as separate. She also integrates the ideas put forth by Sullivan, Grant and Grant as to levels of "interpersonal integration", which account for the manner in which one experiences needs, perceptions and expectations of others (Loevinger, 1976). Loevinger indicates that this concept is distinct from, but related to, intellectual capacity. She views her construct as a "master trait" which indicates a personality style which informs the degree of a person's perceptual embeddedness, cognitive complexity, level of impulse control, and degree of individuation and relatedness. "Ego development, as we use the term, encompasses the complexity of moral judgement, the nature of interpersonal relations, and the framework within which one perceives oneself and others as people...Concept formation, the search for meaning, the striving for self consistency, those are the ways of describing the essence of ego" (Loevinger, 1979, p. 3-4).

The model proposed by Loevinger is a stage sequence based on a heirarchical model which presupposes that there

is an invariable order to the stages and that the stages build on each other with each successive stage being an integration of the previous stages and a preparation for the ensuing stages (Loevinger, 1966; Loevinger, 1976). The fixed sequencing of the stages inherent in any heirarchic model is attributed to an "inner logic" or organizing principle which underlies development. Robert Kegan's imaginative approach to ego development as the individual's effort to make sense of experience and to make meaning of life is an attempt to articulate this inner logic, or "deep structure" as Kegan calls it. His amended revitalization of Piaget's theory suggests that at the core of the meaning-making activity is the continual drawing and redrawing of the distinction between self and other. He suggests that this is the underlying structure and process "missing" from Loevinger's theory (Kegan, 1979; Kegan, 1982). Like Loevinger, Kegan suggests stages of development that represent "successive evolutions in self-other relating" that culminate in temporary points of stability and balance - "evolutionary truces". A person's position, whether transitional or at a point of balance, determines a framework for perceiving and knowing the world, oneself, and others. "The guiding principle of such a truce - the point that is always at issue, and renegotiated in the transition to each new balance - is

what, from the point of view of the organism, is composed as 'object' and what is 'subject', to what extent, in other words, does the organism differentiate itself from (and so relate itself to) the world?" (Kegan, 1979, p.8). Kegan believes this guiding principle or "evolutionary motion" is innate, part of being human, or even just being a living thing. From this continual evolution comes a way of knowing the world, and from this comes thought and emotion (Kegan, 1982).

Although Kegan's theory is appealing and thorough, he remains primarily a theoretician so his ideas are difficult to test. Loevinger, on the other hand, has constructed a measure, the Washington University Sentence Completion Test, with which she can assess a person's level of ego development. Her model proposes ten stages on a continuum of development referring to sequential changes in structures of meaning and structures of character which can be operationally defined. There are actually seven stages, with three transitional stages which characterize the person in flux. Together they generate a typology of individual differences in character styles (Loevinger and Wessler, 1970; Loevinger, Wessler, and Redmore, 1983).

Her first stage, the Symbiotic (I-1), is only seen at infancy. It is characterized by the absence of

differentiation between self and other and is oblivious to anything but the immediate gratification of immediate needs. This stage ends when language is acquired and is therefore impossible to measure with the sentence completion test which is reliant upon verbal language. The second stage is the Impulsive, I-2. The world view here is egocentric and concrete. Primary concerns are impulses, their gratification through others and their control which is experienced as unpredictable and punitive. Actions and people are construed as simply good or bad. The next stage (Delta) is the Self-Protective stage in which interpersonal relations are manipulative and exploitative. Rules are recognized in terms of self interest, immediate advantage, and punishment. The person at this level is consciously preoccupied with control, getting into trouble, domination and deception. The transitional stage of Delta/3, sometimes called the Ritualistic-Traditional, is not clearly conceptualized at the theoretical level but was derived empirically when the test was constructed. Responses not complex enough to warrant a higher rating but not impulsive enough to receive a Delta rating are placed here. The fourth stage, the Conformist (I-3), is reached by most people at some point during adolescence or adulthood. Many people do not move beyond this point at which rules are obeyed because

they are rules, morals and values are based on cliches, and interpersonal relations are understood in terms of actions and concrete events. Because self is identified by the relationships had, issues of shame and disapproval are very salient here. Inner life is beginning to be acknowledged but only in very simplistic and banal terms. People are primarily construed in terms of externals. The next stage, the Self-Aware, is transitional (3/4), brought on by the dawning recognition that right and wrong and good and bad may be relative to situations. Beginning introspection emerges with growing self-awareness and self-criticism resulting in some sense of psychological causation, but only in global ways. The issue of struggling with contingencies is an anxious one for the 3/4 individual (Hauser, 1976; Loevinger, 1970; Loevinger, 1976). It is interesting to note that this appears to be the modal stage for educated adults in this country (Holt, 1980).

The fifth full stage is the Conscientious, I-4. Morality is now internalized but tends to be rigid, although quite principled. Inner rules guide behavior and guilt ensues for transgressions. This type of person is reflective. Interpersonally others are construed in terms of feelings and motives and individual differences are now perceived clearly. Relationships are now quite

meaningful and more vivid, and separateness is tolerable. Conscious preoccupations include obligations, ideals, achievements, and traits. The final transitional stage, the Individualistic (4/5), is manifest by greater complexity in conceptualizing interpersonal relationships and environmental events characterized especially by the beginning of the capacity to tolerate paradoxical relationships between things. Interpersonal relationships are deeper and more intense but the issue of dependence/independence is recurrent as this person struggles with the awareness of emotional dependence as separate from physical or financial dependence. The moralism of the lower stages is replaced by an uncomfortable awareness of inner conflict. The ability to cope with inner conflict comes in the sixth stage (Autonomous, I-5). Here conflicting need, ideals, and perceptions are faced directly and coped with. Interpersonally the person recognizes and accepts other people's needs for autonomy while relating in a mutually interdependent way, lending a more intimate but individuated tone to the relationships. Self-fulfillment rather than achievement is a primary concern, along with role differentiation and individuality. Studies have shown that this type is infrequently found. The final stage, the Integrated (I-6), is less well understood since

fewer than one percent of most populations will be found here. It is a stage of individuation and intense interrelatedness. Here individuality is not only tolerated but cherished. One proceeds beyond coping with conflicts to renunciation of the unattainable. Identity is the conscious preoccupation (Hauser, 1976; Loevinger, 1970; Loevinger, 1976).

Summary and Conclusions

The present study is an attempt to examine giftedness and creativity in a different manner than that undertaken in the past. The study will focus on the differing character styles of gifted individuals because past attempts to understand persons of exceptional abilities have not produced an adequate personality template of the gifted person. An understanding of them in terms of a single trait or dimension or even a list of traits and dimensions does not adequately articulate the person inside of the label. Therefore, this project will build upon a theoretical model of the entire person in an attempt to more fully articulate an understanding of the personalities of gifted persons.

It has been shown that the traditional approach to giftedness was limited to the use of the IQ measure with the assumption that intelligence is a quantity of which the gifted have more. This is a limited and limiting view

and does little to enrich our understanding of those with exceptional abilities. The cognitive style literature poses interesting questions as to the processes which differentiate original thinking from the norm, but has yet to become an integrated data base and has produced little research into the application of the cognitive style concepts to the assessment and understanding of persons with exceptional abilities. What has been important here is the expansion of the concept of intelligence to include perceptual processes and thinking styles. However, neither approach integrates personality theory with what is known about intelligence, IQ, or cognitive style. Therefore, to study giftedness in this context may produce a label that defines one aspect of a person, for instance how smart one is or how one solves problems, but it does not adequately build a picture of the person that allows understanding of one's functioning in a variety of situations.

Other areas of investigation related to understanding exceptional ability and talent can be found in the creativity and personality literature. The creativity research done to date is plentiful and absorbing. It has helped delineate the relationship between intelligence and creativity and has produced knowledge helpful in understanding the creative process. There have also been

some consistent findings as to the personality characteristics associated with creativity. The primary flaws in this research concern the failure to find a common definition of the concept and the ubiquitous lack of integration of the enormous amounts of isolated data. Again, while the existing data does articulate still another dimension of human functioning, it does not provide a theoretical model of the entire person.

A complete understanding of the gifted individual needs to come from an integrated theoretical model of personality styles which would allow an understanding of the person as a whole. While we have become capable of identifying someone as intellectually superior or highly creative in thinking, we fall short of being able to understand from this how a person construes the world, his or her self, and others. Nor does this provide understanding of how a person will emotionally react to a situation, what the primary areas of concern and wonder are for them, the unconscious issues, how they will operate in relationships, and what is meaningful to them. Although not utilized enough, there are some promising ideas along these lines. The one selected as the point of departure for this study is that of Loevinger. Her typology of character style, which she calls ego development, is both thorough in its inclusion of

cognitive, interpersonal, and integrative processes with notions of self concept and impulse control, and is also amenable to research because of her sentence completion test which was designed to assess it.

The purposes of this study are two-fold. Two groups of equally intellectually endowed individuals will be examined in order to demonstrate the existence of differing personality types among gifted individuals. One correlate of intelligence is being held constant in order to understand what other factors distinguish gifted, creative thinkers from the norm. Secondly, a projective personality technique, the Rorschach, will be used to investigate whether certain Rorschach variables correlate with level of ego development and account for the variance in level of ego development. Not only would this enrich the understanding of each instrument, it would also help to articulate the interpretation of some experimental Rorschach variables. In addition, the building of this conceptual bridge between the two instruments promotes understanding of how the Rorschach informs what underlies this "master trait" of Loevinger's and provides further articulation of this important construct and its relation to the personality styles of gifted individuals.

CHAPTER II

METHOD

Purpose of the Study

The primary purpose of this study was to investigate the existence of different personality types, or character styles, among intellectually gifted people. An underlying assumption here is that intelligence is a necessary but not sufficient component in explaining degrees of complexity and creative productivity among individuals (Frederiksen, 1986; Getzel's and Jackson, 1962; Guilford, 1950). In light of this, only persons of high intellectual ability, as determined by academic performance measures, were solicited for participation in this study.

Operationally, this hypothesis was tested by looking for significant differences between the two groups, College Scholars and Honors students, on a variable called ego development level, as measured by the Washington University Sentence Completion Test. This test was chosen as a measure of overall character style, which is assumed to be manifested in the manner in which the person contrues the world and makes it meaningful to him or her. The original hypothesis had been that the College Scholars as a group would score higher on the Sentence

Completion Test than would the Honors students because participation in the Scholars program is based on the students' demonstration of their ability to produce novel ideas and to think independently and creatively.

A second point of inquiry concerns the relationship of the differences, between groups and individuals, in ego development, or character style, as measured by the Sentence Completion Test to certain Rorschach scoring variables. The Rorschach was selected as an instrument useful for tapping perceptual and cognitive processes and indicating both the pathological and adaptive processes of the individual. Should analogs of ego development be found in the Rorschach the implications of these will be discussed.

Participants

There were two comparison groups in this study. All were undergraduates at the University of Tennessee participating in either the College Scholars Program or the Honors curriculum in the Chemistry or Physics departments. The College Scholars program is an alternative to the basic undergraduate course of study that allows specially selected, academically talented students who have shown signs of self-motivation and creativity, based on their independent creation of unique projects and on letters of reference which attest to this,

to have maximum flexibility in designing their own major and curriculum. Students enrolled in either the Physics or Chemistry Honors curriculum must have achieved a minimum ACT score of 28 or 29, respectively, and must maintain a minimum grade point average of 3.2. Both sets of participants are considered to be academically and intellectually above average.

There were 25 participants in the College Scholars sample and 22 participants in the Honors sample, a total of 47 participants for the study. Of the 113 total subjects solicited, this was a 42% participation rate. All together there were 21 females and 26 males. Within the Scholars sample there were 14 females and 11 males. Within the Honors group there were 7 females and 15 males. The ages of the total sample ranged from 17 to 38. The median age of all the participants across sexes was 19. The academic status of the participants ranged from freshman to senior. The fields of study for the College Scholars were quite varied and sometimes unique. It is not unusual to be a Scholar with a dual major in a hard science, for example, genetic biology, and a fine arts area, for instance, classical guitar. The Honors sample were primarily majoring in physics, chemistry or engineering. Many of the Honors students were in pre-med tracts.

The comparison groups were chosen because membership in each requires a superior academic ability, which is usually correlated with superior intellectual ability (Matarazzo, 1980). This superior ability is reflected in the average ACT scores and GPA's of the groups. The mean ACT score among the Scholars was 28.5; among the Honors students the mean was 29.4. The difference between means is not significant. These scores reflect superior performance on the ACT according to the national norms which indicate that a score of 29 would place a student in the 98th percentile (American College Test Program Technical Report, 1980). The mean GPA for the Scholars was 3.6 and for the Honors it was 3.4. Again, the difference between the group means is non-significant. These statistics were used as criterion measures for establishing the superior intellectual and academic abilities of the group members and for determining inclusion in the study. Again, the two groups were specially selected as groups of high intellectual ability since this study aims to hold an analog of intelligence constant while attempting to articulate what other qualities go into making these students gifted, the assumption being that to know that a person is very intelligent is not enough to understand him or her.

The data for this study were gathered as part of a

larger, ongoing project, the purpose of which is the study of academically successful individuals. The particular data used for the present study were gathered in two parts. Nineteen of the subjects were solicited and tested during the 1984-85 academic year, and the remainder were solicited and tested during the 1985-86 academic year. The nineteen tested first were asked to return for a brief follow-up meeting in 1985-86 during which they filled out one of the instruments which was not used the year before.

All participants were volunteers who expressed an interest in the project after receiving a letter and a follow-up call explaining the testing and interviewing procedures, the fact that two sessions of two to three hours in length were to be scheduled at their convenience, and that an optional follow-up session for feedback purposes could be scheduled if they so desired. There was a motivation factor operating in terms of subject selection since some of those solicited declined participation in the study. Since this was operating for both groups it does not appear to be a confounding variable in terms of possible group differences and thus does not interfere with the primary purpose of the project.

Procedures

Several psychological assessment procedures and an interview were administered to each subject by a member of the research team. All members of the team were graduate students in clinical psychology and had had training in the administration of each of the techniques used. Each researcher was randomly assigned a list of possible participants. The researcher was responsible for calling each possible participant and scheduling the two sessions needed for collection of the data. During the first meeting with each subject, demographic data were collected and the following tests were administered: The Washington University Sentence Completion Test (WUSC), Jackson Personality Research Form (PRF), Tellegen Differential Personality Research Questionnaire (DPQ), and the Van Lenep 4 Picture Test. The WUSC was always administered first. Next the subject would fill out the PRF or the DPQ, write a story to the Van Lenep 4 Picture Test, and then fill out the test not taken earlier (i.e., either the DPQ or the PRF). The second session involved the completion of the Cornell Index, the administration of the Rorschach Inkblot Test, and an audiotaped interview.

Instruments

The Cornell Index was used as a screening device for the presence of severely maladaptive pathology and

aberrant behavior. This test was devised primarily for use in the Armed Forces during World War II as a "rapid psychiatric and psychosomatic evaluation of large numbers of persons in a variety of situations" (Weider, Wolff, Brodman, Mittelmann, and Wechsler, 1949 p. 2). The instrument was normed on 600 individuals without significant personality disturbances and 400 with such disturbances. The reliability coefficient for the one thousand subjects tested at five different sites in the United States is .95 (Weider, et al, 1949). Three of the items on the Cornell were considered "Stop Items". The subject would be dropped from the study if he or she affirmatively answered any of the following: 1.) Did you ever have a nervous breakdown?, 2.) Were you ever a patient in a mental hospital?, 3.) Have you been arrested more than three times?, and also had a total score of 13 or more (Weider, et al, 1949). The purpose of this screening was to ensure that the population under study could be considered mentally healthy within reasonable limits. No subject was excluded from the study based on this screening measure.

The Washington University Sentence Completion Test (WUSC) was used to test the principal thesis of this study. It was designed by Jane Loevinger and corresponds to her theory concerning the development of character

styles, which she calls ego development. The test locates a subject on a 9 point scale which indicates one's core level of ego development (as defined by Loevinger). Loevinger's model of development is hierarchical which suggests that there are multiple aspects of the personality developing simultaneously. For instance, she postulates that intelligence is separate from, but developing alongside, the ego. This model also suggests an invariable order to the stages of development with each successive stage an integration of the previous stages and a preparation for ensuing stages (Gedo & Goldberg, 1973).

Loevinger's concept of ego does not fit the traditional conception of ego as a set of functions. She conceives of ego as "master trait" which suggests a personality style or type, which in turn suggests the individual's frame of reference and characteristic manner of construing the world of self and others. This includes the degree of a person's perceptual embeddedness, cognitive complexity, level of impulse control, and degree of individuation and relatedness. She has borrowed from constructs which have been described by others as moral development (Kohlberg and Piaget), cognitive complexity (Piaget), relatability (Isaacs), interpersonal integration (Sullivan, Grant, and Grant), and perceptual style (Perry). Loevinger likens her concept to Sullivan's idea

of the self system and uses his work along with Freud's notion of the ego as an organizing process to develop her ideas (Loevinger, 1976).

Since its publication in 1970, Loevinger's Washington University Sentence Completion test has generated much research. The original samples of subjects on which the test was constructed and refined totaled nearly 1600 persons (Loevinger, 1970). Initial reliability ratings among self-trained raters and among raters trained in person by Loevinger and her associates were consistently high. Interrater correlations for each test item ranged from .59 to .99, with the median interrater correlation falling at .76. Per cent agreement and interrater correlations for Total Protocol Ratings (TPR -- the summary score of each protocol) were also high with per cent agreements within one half step on the scale ranging from 88% to 100% (median Level - 94%), and interrater correlations ranging from .81 to .93 (median level at .85) (Loevinger, 1970). Later reliability studies yielded similar results (Hauser, 1976; Holt, 1980).

Construct validity studies of the WUSC have shown evidence for the theoretical descriptions of her stages and for their sequentiality (Loevinger and Knoll, 1983). Other studies have supported the conceptually predicted links between level of ego development and interpersonal

behaviors, degree of conformity, level of moral reasoning, and degree of conceptual complexity (Hauser, 1976). Discriminative validity studies have supported Loevinger's contention that the WUSC is not simply a measure of intellectual capacity or verbal fluency, although the question remains to be settled as to the exact nature of the relationship of these two constructs to her construct of ego development (Loevinger, 1970; Hauser, 1976). Loevinger originally hypothesized that intellect and ego were separate but related areas of development (Loevinger, 1976). Studies attempting to correlate ego development with IQ have found inconsistent results, reporting correlations from 0 to .5 (Loevinger, 1976; Redmore & Loevinger, 1979). What emerges from this work is the finding that ego development level is most affected by intelligence during early development and at the lower levels of IQ (Redmore & Loevinger, 1979). This is consistent with Loevinger's initial claim that ego level may be limited by intellectual level but is not determined by it, especially at the higher levels of both (Loevinger, 1976).

Loevinger's original data pool provided the preliminary norms for levels of ego development as measured by her test. These norms were for females only, ages ranging from 11 years to 50 years (Loevinger, 1970).

More recently, Robert Holt has normed the test on a probability sample of 966 American young people, male and female, ages 16 to 26 years (Holt, 1980). Both sets of norms suggest that the modal personality type is the so-called Self-Aware (WUSC stage I-3/4).

Rorschach's test will be used to examine the second question concerning this study. The Rorschach is a projective technique composed of ten inkblots. Participant's responses to each inkblot are recorded and scored according to several categories and along several dimensions. Each of these scores signifies some dimension of personality.

The Burstein-Loucks Rorschach scoring system will be used in this study. This system was created in an attempt to resolve some of the inconsistencies and confusion that have plagued existing scoring systems, with the aim of producing a more comprehensive, internally valid alternative. The system is, in part, a synthesis of aspects of other existing scoring systems including those of Holt, Exner, Blatt, Holtzman, and Beck (Burstein & Loucks, 1980). Based on research on these other systems, location, determinant, and content categories have been amended, and material only informally rated in other systems is assessed in this system. In addition, based on the psychoanalytic theory of the personality, some new

scoring categories have been created. A primary aim of the authors in assembling this scoring system was to build an instrument from a conceptual model (i.e., psychoanalytic theory) which would allow for a more complete interpretation of central personality dimensions rather than isolated characteristics. In this vein, the authors have advocated the norming of the test for clearly specified criterion groups rather than the ephemeral "normal" and pathological personalities (Burstein & Loucks, 1980). This makes the Burstein-Loucks scoring system very compatible with the aim of the present study to determine personality styles of intellectually gifted individuals.

Scoring Procedures and Reliability

Three persons were chosen as raters for the Sentence Completion test. One had had previous experience with the test and scoring procedure. All were trained using Loevinger's self-training manual. Research has shown that "use of the scoring manual for rating level of ego development leads to ratings that attain a high degree of reliability" and that are equivalent with the degree of reliability achieved by the constructors of the manual (Loevinger & Wessler, 1970, p. 47).

Each rater scored two sets of 20 practice sentence

completion protocols over a three month period of training. This amounted to each rater scoring 1440 sentence completions before beginning on the actual data. The raters first were given the readings on Loevinger's concept of ego development and the manifestation of ego development in sentences. Then the raters read Loevinger's "Instructions to Raters" (Loevinger & Wessler, 1970). Finally each rater scored his or her practice protocols. Periodic meetings between raters were held to discuss and reconcile differences in scoring, as suggested by the training manual.

When scoring the actual data Rater 1 scored 21 protocols; Raters 2 and 3 scored 20 protocols each. 30 per cent, or 14, of the total 47 protocols were randomly assigned for double scoring by two raters. All scoring was done blind with respect to age, academic year, ACT, GPA, and group membership. None of the raters knew which of the 4 or 5 protocols that they were double scoring were being scored by another rater. Total Protocol Ratings (TPR's) were determined by Raters 1 and 2. The same 14 protocols were double scored for TPR's.

Reliability ratings for practice and actual scoring were in keeping with predicted reliability ratings from past research using this instrument. Interrater correlations were calculated between raters and between

each rater and the scoring manual for the practice protocols. Per cent agreements and interrater correlations for the actual data were calculated between each rater for the double-scored protocols.

Interrater reliability coefficients for the first practice sentence completion set ranged from .81 to .95, with a mean and median correlation of .875. For the second set of practice protocols, interrater reliability ranged from .84 to .95. The median correlation was .87, with the mean at .88. Reliability on the 30 per cent of the actual data that was double scored was slightly lower but still within reasonable limits. Per cent agreement within one half step on the scale for the double scored data ranged from 80.6 to 97.2, with the median agreement at 88.9% and the mean agreement at 88.3%. The median correlation across raters was .73; the correlation between Rater 1 and Rater 2 was .73; between Rater 1 and Rater 3, it was .73; between Rater 2 and Rater 3, .60. A relatively high correlation of .97 was found between Rater 1 and Rater 2 on the assessment of TPR's, suggesting an internal consistency to this instrument despite specific scoring disagreements on specific stems.

Raters for the Rorschach were all members of the research group. Each was a graduate student in clinical psychology with specific training in the administration

and scoring of the Rorschach test. Each of the protocols was scored by two raters who then met to discuss discrepancies in scorings. Inconsistencies in scorings that were not able to be reconciled between raters were then taken to one of the authors of the system for final arbitration.

Because of the nature of the Rorschach scoring system the question of interrater reliability as usually expressed in terms of per cent agreement and reliability coefficients loses meaning. Although some studies have attempted to calculate reliability on individual scores of Rorschach variables and have achieved impressive numbers (up to $r = .95$), this does not appear to be a meaningful measure of interrater consistency (Goldfried, Stricker, and Weiner, 1971).

The Rorschach's unsuitability for traditional reliability measures has to do with the complexity and vastness of the system used to score it. It presents initial problems for reliability estimates in that it is not a scoring system which uses numbers. Scoring variables are usually descriptors of the presence or absence of a characteristic, and sometimes the intensity of the presence of the said characteristic is scored. Although one could attempt to translate the scoring variables into numerical equivalents this would likely

distort the meaning of the data as there is no systematic way in which to determine the relative weight of a given variable, how its weight changes when it is present with other variables, etc. In addition, the rate of the occurrence or non-occurrence of each variable differs greatly, as does the importance or insignificance of its occurrence or non-occurrence. For example, should a subject give a response in which Bizarre Content is scored, this is extremely significant and rare. It is often an indicator of severe psychopathology so the relative weight of its importance is great. On the other hand, the occurrence of Human Movement, a frequently scored variable, while important and significant for interpretation, is not as independently significant as rarer variables. Thus the consequentiality of the occurrence or nonoccurrence of each scoring variable differs and there is as of yet no systematic and agreed upon ranking of these consequentialities.

Since interrater reliability estimates are used primarily for the purpose of saving time for raters by determining the lack of a need for multiple scoring of every measure, this study has used the alternative but more time-consuming procedures of double scoring each Rorschach protocol, along with conferences and arbitration by experts as a substitute for the usual reliability

procedures. This was considered an alternative but reasonable way in which to ensure an acceptable degree of scoring reliability.

Hypotheses

There are two primary hypotheses which are being investigated in this study. The main question concerns the differences between groups on the measure of ego development. It is hypothesized that the College Scholars as a group will score significantly higher than the Honors group in terms of ego development as measured by the Washington University Sentence Completion test.

The second purpose of the study is the investigation of possible relationships between level of ego development and certain Rorschach scoring variables from the Burstein-Loucks system. It is hypothesized that specific Rorshach variables will correlate with level of ego development and account for the variance in level of ego development between subjects.

The five Rorschach variables of interest include the Cognitive Complexity scores which are assumed to measure the subject's ability to "perceive and understand complex relationships". This includes assessment of the amount of energy the individual invests in organizing, synthesizing, and analyzing his or her perceptions and cognitions (Burstein and Loucks, 1980, p.8). Given the conceptual

basis of the Sentence Completion test, it is hypothesized that more advanced Cognitive Complexity scores will positively correlate with ego development level.

The Imaginal Aspects scoring category, used to designate an individual's inner experience of the blot, consists of human, animal and inanimate movement responses (HM, AM, OM), human emotion, texture and vista responses (HE, T, V). Higher frequency of Imaginal Aspect scores is predicted to occur at higher levels of ego development.

In the Burstein-Loucks scoring system (1980) there is an intriguing, experimental scoring variable called Interpersonal Expectations. This provides a framework for evaluating the "quality of interpersonal relationships that can be inferred from the fantasies implicit in the patient's responses" (p. 15). Responses are rated 1 through 4 as to the degree of human articulation (HA) and motivational articulation (MA). Given Loewinger's underlying conceptual model concerning increasing differentiation and complexity of interpersonal construing, it is hypothesized that the higher HA and MA scores will correlate positively with higher ego development scores.

A final category of Rorschach scoring variables under consideration is the Perceptual Cognitive Characteristics category. There are 22 such scores, some of which appear

frequently in records, some which appear rarely, and some which appear infrequently and are considered pathognomic. It is predicted that the occurrence of pathognomic scores will correlate with low levels of ego development, while common and rare Perceptual Cognitive Characteristics may account for placement at other levels of ego development.

CHAPTER III

RESULTS

Descriptive and Inferential Statistics

The first hypothesis of the study, concerning expected differences between groups, was investigated by computing the means and standard deviations of ego development level for the College Scholars group and for the Honors group. Because of the unequal sample sizes, a test of the homogeneity of variances was computed. $F(1.24)$ was not significant at the .05 level, therefore, the null hypothesis of equal variances was accepted. Differences between means were analyzed using a two-tailed t-test. As Table 1 indicates, there was a significant difference between group means for ego development ($t = 2.022$, $df = 45$, $p < .05$) with the College Scholars scoring higher than the Honors group.

TABLE 1. Means, Standard Deviations and Results of t-Tests for Differences Between College Scholars and Honors Groups on Ego Development Level.

COLLEGE SCHOLARS		HONORS		
MEAN	SD	MEAN	SD	t
42.00	6.77	38.18	6.08	2.022*

* $p < .05$.

Although significant differences were found between group means on the measure of ego development, a look at the separate distributions of the ego development scores for each group (Figure 1) sheds some light on the nature of these differences.

The frequency distributions for the comparison groups are very similar at first glance. For each the median level of ego development is I-4, the Conscientious. The modal score for each group is also at I-4. This indicates that both groups modal score is slightly higher than the national norm of I-3/4 found by Robert Holt (1980). However, there are interesting differences in frequencies at both the high and low ends of the distributions. The Honors group (n = 22) had two members fall at the Delta/3 category and one other member fall at the I-3 category, both of which are relatively low levels of ego development for young adults. The Delta/3 level is particularly low, found in about 7% of college educated populations (Holt, 1980) (see Table 2). The Honors groups, with 9% of the sample at Delta/3 is not abnormally high; in contrast, the Scholars group (n = 25) had no participants fall at or below this level. Neither did the Scholars group contain any I-3 level members, while the Honors group had one person (4.5%) fall here. Holt's norms suggest that most college educated populations will contain 10% to 12% at

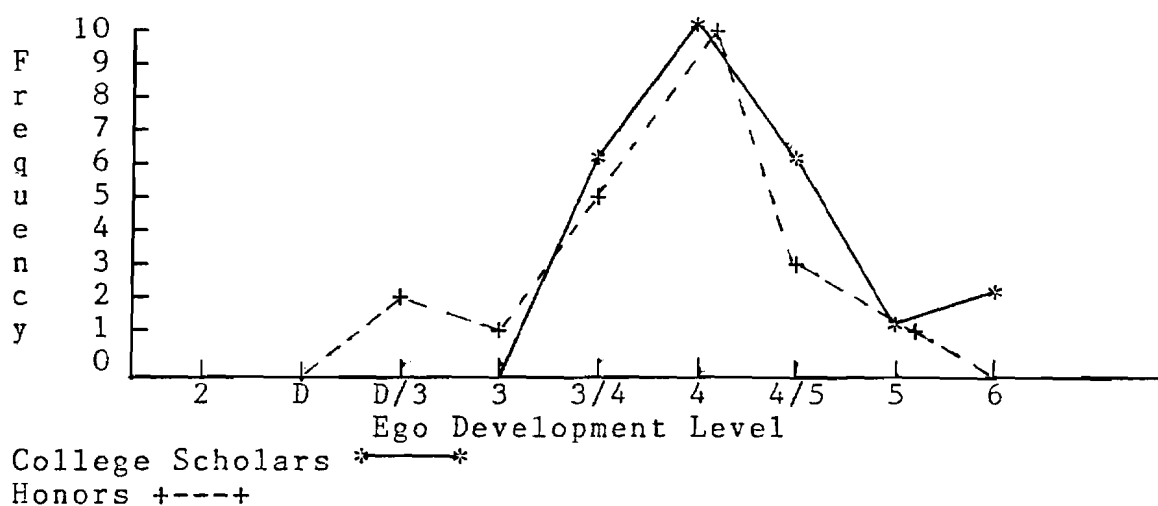


FIGURE 1. Frequency Distribution of Ego Development Scores for College Scholars and Honors.

TABLE 2. Percentages and Cumulative Percentages for Distribution of Ego Development Level for Honors and College Scholars Comparison Groups and National Norms.

ED*	NATIONAL NORMS ¹		HONORS		COLLEGE SCHOLARS	
	%	cum %	%	cum %	%	cum %
I-6	0		0		8	100
I-5	---@	100	4.5	100	4	92
4/5	8	99	13.5	95	24	88
I-4	27	91	45	82	40	64
I-3/4	40	64	23	37	24	24
I-3	11	24	4.5	14	0	0
D/3	7	13	9	9	0	
Delta	3	6	0	0	0	
I-2	3	3	0		0	

* Ego Development Level

@ Less than 1%

¹ Holt, 1980

the I-3 level.

Comparisons of the higher ends of the distributions between the two sample groups (Figure 1) and of the sample groups with the national norms (Figure 2) reveal an increase in frequency of scores at and above I-4 for both the Scholars and Honors. For instance, 45% of the Honors participants fell at I-4 while 40% of the Scholars participants fell there. The national norm suggests that about 27% of the population would be expected to achieve an I-4 score. The differences between the comparison groups and the norms are even more striking at the very high levels of ego development. At I-4/5 and I-5 both groups held substantially more members at these levels. The norms suggest that combined occurrences of I-4/5's and I-5's come to around 9%. There were 18% of the Honors at these levels and 28% of the Scholars at these high levels. At the highest level of ego development, the Integrated (I-6), Loevinger (1970) suggests that less than one percent of any populations will be found here, and Holt (1980) found no persons at this level. While there were no members of the Honors group falling at this level, two College Scholars (8% of the sample) achieved I-6 levels of ego development, a seemingly rare occurrence.

Since Holt provides no confidence intervals for his norms, two separate chi-square tests were used to

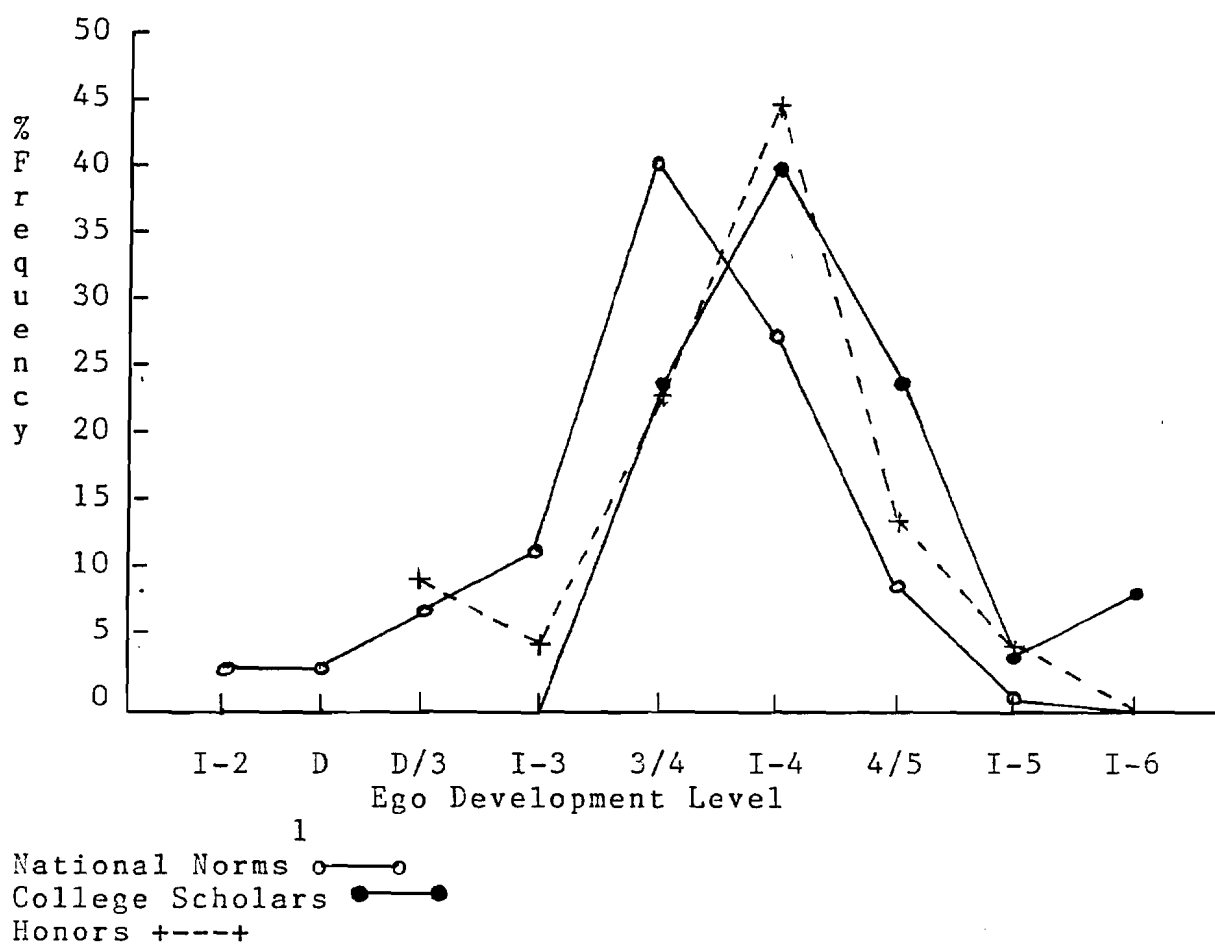


FIGURE 2. Comparison of Frequency Distributions (by Percentage) for Ego Development Level Between Holt's National Norms, College Scholars, and Honors Samples.

1 Holt, 1980

determine whether the frequencies of each sample differed significantly from the national norms. The obtained results indicated that the χ^2 for the Honors sample was not significant ($\chi^2 = 7.46, p > .05$) while the χ^2 for the College Scholars sample, $\chi^2 = 29.41$, was significant at the .001 level. The results of the chi-square analyses suggest that the Honors sample is more similar to a random sample taken from the average population than different from it, while the College Scholars sample tends to differ significantly from the norm.

Prediction of Ego Development Scores

The correlation matrix (Table 3) presents the intercorrelations between the Rorschach variables under consideration and ego development level. The single Rorschach variable that correlated significantly with ego development level is Imaginal Aspect Usage ($r = -.292, p > .05$). This indicates that the usage of Imaginal Aspects decreases with increasing levels of ego development. The expected intercorrelations among some of the Rorschach variables were also demonstrated.

To test the second hypothesis, concerning prediction of ego development scores from Rorschach scores, a multiple regression analysis was performed using ego

TABLE 3. Intercorrelations Among the Eight Rorschach Variable Groups and Ego Development Level.

Variables	1	2	3	4	5	6	7	8	9
1 Ego Dev't Level	----	-.003	-.029	.131	-.027	.038	-.292*	.092	-.130
2 avg HA level		----	.799**	-.089	.121	-.012	-.022	.199	-.184
3 avg MA level			----	-.052	.158	.229	.274	.065	-.069
4 % common PCC@				----	.295*	.123	.339*	-.231	.230
5 % rare PCC					----	.428**	.506**	-.267*	.230
6 % path. PCC						----	.476**	-.303*	.317*
7 % IA@@ usage							----	-.498**	.487**
8 % Intg, Artc, Simp								----	-.978**
9 % Diff, Arb									----

* Significant at .05 ($r > .288$)

** Significant at .01 ($r > .372$)

@ Perceptual Cognitive Characteristics

@@ Imaginal Aspects

development as the criterion variable which was to be predicted. Following the procedure suggested by Ray (1982), each of the eight Rorschach variables was entered into a stepwise regression analysis and a maximum R-square improvement procedure. The first of these techniques, the stepwise procedure, adds each possible predictor variable to the model separately, deleting those variables which do not produce a regression coefficient at the determined significance level (.05) (Ray, 1982). With this procedure, Imaginal Aspect usage emerged as the best single predictor of ego development level, accounting for 8.5% of the variance. No other Rorschach variable achieved significance in this model. Table 4 displays the results of the second procedure, the maximum R-square improvement technique, which systematically examines which combination of variables (starting with a one variable model, then a two variable model, etc) yields the greatest increase in R-square. This comparison and switching procedure continues until no increase in R-square is found (Ray, 1982). This procedure revealed that when Imaginal Aspect usage was combined with the common Perceptual Cognitive Characteristics variable, 14.5% of the variance was accounted for ($R = .38$, $p < .05$). The best three variable predictor model found included Imaginal Aspect usage, common Perceptual Cognitive

TABLE 4. Maximum R-Squared Multiple Regression Analysis Predicting Ego Development Level from Use of Rorschach Scoring Variables.

VARIABLES	R	R^2	Increase in R^2	F	r	Beta	F
% IA@ usage	.292	.085	.085	4.19*	-.292*	-.292	4.19*
% common PCC@@	.380	.145	.060	3.72*	.131	.259	3.07
% path. PCC	<u>.436</u>	<u>.189</u>	<u>.044</u>	<u>3.36*</u>	.038	.081	2.40
avg MA level	.441	.195	.006	2.54	-.029	.073	.25
avg HA level	.449	.202	.007	2.08	-.003	-.160	.37
% rare PCC	.456	.208	.006	1.75	-.027	.099	.31
% Intg, Artc,Simp	.458	.210	.002	1.48	.092	-.050	.09
% Diff, Arb	.498	.248	.038	1.57	-.130	-.031	.17

* Significant at .05

@ Imaginal Aspects

@@ Perceptual Cognitive Characteristics

R^2
Total R^2 achieving significance = .189
Total R^2 = .436
Total Adjusted R^2 = .123

Characteristic usage, and pathognomic Perceptual Cognitive Characteristic usage, significantly increasing R to .436 ($p < .05$) and accounting for 19% of the variance in development level. When this is adjusted for the small sample size, however, the percent of the variance accounted for decreases to 12.3%. Other combinations of Rorschach variables did not significantly increase the percent of variance accounted for in the criterion variable.

While the addition of both of the Perceptual Cognitive Characteristics variables to the regression equation does significantly increase R, neither of the regression coefficients for these variables attains significance. Therefore, their independent predictive power is poor (Table 4). The unique variable with clear predictive power is Imaginal Aspect usage, however its ability to account for a substantial amount of the variance in the criterion variable is limited. These results suggest that scores on the ego development measure are relatively independent of scores on the Rorschach variables.

Examination of Extreme Cases

A closer, non-statistical, analysis was done with the four individual cases which made up the extreme ends of the ego development level distributions for the Scholars

and Honors groups. The relatively rare occurrence of two I-6 level protocols occurred in the Scholars group only. In comparison, the Honors group included the two lowest level protocols for the entire combined sample (two at Delta/3). The Rorschach protocols for these four cases were examined for trends that could possibly account for the differences in ego development level. Only the notable differences between the protocol pairs will be reported here (Table 5).

The most striking differences between the I-6 and Delta/3 protocols is the increase in blends seen on the Delta/3 Rorschachs. While the number of responses per

TABLE 5. Notable Differences on Rorschach Protocols Between Two I-6 Subjects and Two Delta/3 Subjects.

VARIABLES	I-6 (SCHOLARS)		DELTA/3 (HONORS)	
	I-6a	I-6b	Delta/3a	Delta/3b
Responses	16	19	18	20
Blends	56%	42%	83%	85%
Imaginal Aspects	31%	37%	61%	75%
AM Usage	12%	5%	17%	30%
OM Usage	0%	0%	11%	10%
HE + HM Usage	12%	37%	39%	70%
Integrated	6%	10%	28%	15%
Affective Toning	0%	0%	17%	30%
F%	44%	47%	17%	10%
F+%	71%	78%	100%	100%

record does not differ significantly between the four cases (16 and 19 for the I-6's and 18 and 20 for the Delta/3's) the use of blends for the Delta/3's is 83% and 85% respectively, while the other two protocols used 56% and 42% blends. More specifically, the usage of Imaginal Aspects within the blends follows the trend suggested by the regression analysis. That is, the lower ego development scorers used more Imaginal Aspects (61% and 75% total usage) than did the two subjects at the highest ego development level (31% and 37% total usage). One specific Imaginal Aspect which contributes to this difference is Animal Movement (AM) which was used in 17% and 30% of the responses on the Delta/3 protocols. The I-6 protocols contained 12% and 5% AM usage. The preliminary norms for the Burstein-Loucks system (1982) suggest that the average college student will use AM in about 12% of the responses, which suggest that the two Delta/3 participants are using more than the average amount of Animal Movement. A second Imaginal Aspect which contributes to the differences in protocols between the low and high ego development level participants is Inanimate Movement (OM) which was used in 11% and 10% of the responses by the Delta/3's. This is average usage according to the norms. Neither I-6 participant used any

Inanimate Movement. Difference in usage of Human Emotion (HE) and Human Movement (HM) is less clear, however the range in usage may be suggestive of another possible trend. The Delta/3 participants used these two Imaginal Aspects in 39% and 70% of their responses; the I-6 participants used them in 12% and 37% of their responses. The norms suggest about 21% usage.

The primary differences between pairs of protocols with respect to Cognitive Complexity measures is somewhat surprising. The high level ego development scorers made little use of the Integrated responses (6% and 10%) which is well below what is expected according to the norms (24%). The Delta/3 protocols were within normal limits with 15% and 28% usage.

The Perceptual Cognitive Characteristic of interest in differentiating the pairs of protocols is Affective Toning (AT), a commonly found Perceptual Cognitive Characteristic. Neither I-6 protocol had an AT response, but the Delta/3 protocols used Affective Toning in 17% and 30% of their responses. The norms suggest that usage is likely to occur around 13% of the time (Burstein and Loucks, 1982).

There are possible trends seen in the differences in some of the important ratios computed for interpretation of the Rorschach. The F% ratios for the I-6's are

slightly higher than the suggested norm for college students (33%). The F%'s for these participants were 44% and 47% respectively. The Delta/3 F%'s were lower than the norm at 17% and 10%. The F+% ratio for the two pairs also differentiated the protocols. F+% 's for the I-6's were at 71% and 78%, and for the Delta/3's they were both 100%. The norm for this ratio is 68% (Burstein and Loucks, 1982).

CHAPTER IV

DISCUSSION

Because attempts to study persons of exceptional ability predominantly in terms of intellect or creativity have achieved only limited understanding of these persons (often based on a single characteristic), the purpose of this study was to acquire a broader description of the personalities of high functioning individuals. It has already been clearly established in the literature that we are capable of distinguishing levels of ability based on intelligence measures (usually IQ) and creative thinking measures. This frequently results in a continuum of distinction along the lines of low ability to high ability (eg., low IQ - to - high IQ). A primary thrust of the present study was the investigation of other personality dimensions of gifted individuals, a primary assumption being that to describe a person as "intellectually gifted," "smart," or "creative" is not enough to understand them. The question posed here is, "What else defines these individuals and accounts for the individual differences found at similar intellectual levels?" In order to answer this question correlates of IQ (ACT scores and GPA's) were held constant by studying two groups with superior academic talents (the College

Scholars and the Honors) on other personality dimensions in order to help articulate the aspects which define and describe these gifted persons and distinguish them from the norm and from each other.

Ego Development Level in the College Scholars and Honors

The results of the t-test, which was conducted to assess differences between the means of the two groups on the ego development measure (WUSC), suggest that the average ego development level for the Scholars is higher than that of the Honors students. This implies an overall difference in the way in which the members of the two groups organize their perceptions and give meaning to their world, suggesting that the College Scholars are more cognitively complex, less perceptually embedded, more individuated and more capable of mature relatedness. However, consideration of the frequency distributions of ego development for the two groups indicates that a statement of dramatic differences may be inaccurate (see Figure 1, page 75). While the means of the two groups are significantly different, they are both close to the I-4 level, with the Honors mean falling slightly below I-4, between I-3/4 and I-4, and the Scholars mean falling slightly above I-4, between I-4 and I-4/5. The more striking differences between the groups can be seen in their ranges and, most distinctly, in the presence of

extreme cases, low for Honors and high for Scholars.

In both groups, the medians and modes were at the I-4, Conscientious, level which is above the national modal norm of I-3/4 (Self-Aware level) (Holt, 1980). Since both groups are considered to be above average in intelligence, based on their superior academic abilities (measured by ACT scores and GPA's), this finding is consistent with Loevinger's contention that level of ego development may be affected by intelligence to a certain extent (Loevinger, 1976). However, a more recent study contends that this effect is mostly a problem when measuring ego development during early development and at the lower levels of IQ (Redmore and Loevinger, 1979). The implication of this for the present study is that the presumed above average intelligence level of the participants may, in part, be correlated with the above average ego development level of the groups and that, following Loevinger's thinking, it would be expected that the distributions would be positively skewed towards higher levels of ego development. It is clear, given the range of scores, however, that intelligence is not enough to account for this finding.

The increased ego development levels of both groups imply that membership in them requires advanced cognitive complexity, an ability for interpersonal relatedness as

well as differentiation, a more complex view of self and others that includes awareness of internal as well as external situations, and an ability to tolerate some degree of ambiguity. With 45% of the Honors and 40% of the Scholars at the Conscientious level (I-4), the bulk of these two groups are made up of people who have a principled and internalized standard of morality which guides their behavior and directs their goals and values. Because of the internalized nature of their belief systems these individuals would be able to take firm stands against the group or a norm, if need be, and tolerate the separateness that might ensue from this. Unlike the I-3 or I-3/4 person who is defined by his or her relationships, the Conscientious individual is defined by his/her beliefs, values, and goals which are integrated into an organized self-system. Thus, the person at this level is capable of having relationships while perceiving him or herself as being able to function separately as well. The I-4 is extremely responsible, maybe overly so, since the major weakness of this stage is a rigidity of standards that may not be tolerant of temporary transgressions, harsh self-criticism being the result. Achievement is a primary concern.

The principles and moral standards of the I-4 person are very interpersonally based as this stage is capable of

mutuality in relationships. This mutuality appears to be a function of a capacity for identification with others and the empathy that comes with this. Therefore, being sympathetic to the needs of others, not hurting another person, not being overly greedy in a relationship are all matters of great importance to the I-4.

The I-4's understanding of self and others is informed by knowledge of psychological causation, the idea of motives, traits, differentiated feelings, and a clear conception of the problem of impulses and their control. One of the primary concerns at this level lies in the realm of the interpersonal and concerns independence-dependence. The I-4 errs on the side of over independence, not fully able to grasp yet the idea of being separate and related simultaneously. Perhaps because of this, the Conscientious person is very aware of his/her individuality and proud of it.

The internal lives of I-4 persons are rich and differentiated; they are quite able to tell a feeling from a thought and are aware of the mutual interplay between the two. Cognitively, the I-4 person is capable of a complexity which is beyond the point of cognitive multiplicity (where one is able to think about something in many different ways) towards the point of being able to see patterns, to combine opposites, and to see

alternatives and implications. Primary conscience preoccupations for the Conscientious person have to do with achievement, obligation, communication and self respect.

The description of the personality of the I-4 person can be applied to many of the Honors and Scholars subjects, thus enriching our understanding of them past the idea of knowing them to be highly intelligent and/or highly creative thinkers (a trait sometimes applied to the Scholars). Understanding their characteristic approach to construing the world of self and other facilitates an understanding of how they will approach and understand other things. This information could be useful in designing academic programs which will not only benefit and cultivate these persons, but also hold their attention and be meaningful to them.

Although understanding the personalities of the I-4 persons who comprise 40% and 45% of these groups is worthwhile, it is not enough. The above description of the Conscientious (I-4) person does help illuminate the ways in which some of the members of the groups are alike. However, the groups means were found to be significantly different and these differences also need to be addressed.

The range of scores for each group helps indicate where these differences lie. The Honors group had ego

development scores ranging from Delta/3 to I-5. The College Scholars range was from I-3/4 to I-6, interesting in that the entire distribution for this groups falls at or above the average level according to Holt's (1980) norms. Therefore, although the bulk of the participants clustered in the centers of the distributions (I-3/4 and I-4) (see Figures 1 and 2, pages 75 and 77), there were a few outliers in each sample. It would be glib to say simply that the College Scholars are higher level; however, it is worth noting that the few extremely high scores were found there (36% at I-4/5 and above, vs 18% in the Honors group) and the rare occurrence of an I-6 score occurred twice in this group. It is difficult to generalize from these few cases; however, it seems safe to suggest that persons of very high ego development level would likely be drawn to membership in an organization such as the Scholars which encourages each person's individuality and autonomy while remaining an integral member of the group -- all qualities which the higher levels of ego development value.

Conversely, the very low to moderately low ego development scores (Delta/3 and I-3) were found exclusively in the Honors group. It follows from the theory of ego development as put forth by Loevinger (1976), that persons at the Delta/3 level (sometimes

called the Ritualistic-Traditional) and even those at the I-3 (Conformist) level would not be likely to apply for or be successful in a group like the College Scholars. These levels of ego development are wary of individualism, viewing it as a threat to inclusion in a group which is seen as necessary for need satisfaction or approval and belongingness. In addition, the cognitive life of these individuals is marked by simplicity, stereotypes and cliches; therefore, the capacity for abstract thought and the toleration for ambiguity found at the higher levels, where most of the College Scholars fall, might be experienced as meaningless, confusing and isolating to the lower level scorers. On the other hand, inclusion in the Honors programs, which is less of an organized, cohesive group and more of a list of requirements and expectations, would be a manageable and meaningful experience to these people. In addition, the fields of study found among the Honors students studied (hard sciences, engineering, and pre-med) may be areas of endeavor which have decreased levels of ambiguity and require (and perhaps tolerate) much less individualism than does the College Scholars program. This would make the Honors program a viable activity for those at lower levels of ego development.

The Relationship Between the Measures

The second hypothesis of this study was that a relationship would be found between certain Rorschach scoring variables and level of ego development, allowing prediction of ego development level from Rorschach scores. In light of this, the results of the correlational analyses were surprising. Of the five Rorschach variables investigated (Cognitive Complexity, Imaginal Aspects, Human Articulation, Motivational Articulation, and Perceptual Cognitive Characteristics), Imaginal Aspects emerged as the single variable which significantly correlated with ego development. More surprising was the direction of the relationship which suggests that greater usage of Imaginal Aspects occurs at lower levels of ego development. This was opposite from what was predicted; however, sense can be made of this finding.

Imaginal Aspects are thought to reflect the subject's internal experience of the blot, the emphasis here being on unconscious and preconscious experience and fantasy. Abundant Imaginal Aspect usage implies a complex and perhaps tumultuous internal life with much unconscious fantasy activity and, depending on the type of Imaginal Aspect used, much affective intensity and internal pressure. This phenomenon might be found in a person whose internal, unconscious fantasies and experiences are easily

stimulated by external stimuli. This is compatible with Loevinger's (1976) description of the lower and middle stages of ego development where impulse control and reflective capacities are limited.

The correlations between ego development level and the other Rorschach variables were not significant enough to allow confident prediction of a person's ego development score by virtue of their performance on the Rorschach. Although Imaginal Aspect usage did emerge in the regression analysis to account for 8.5% of the variance on the criterion variable, this is not enough for accurate and consistent prediction. Two of the Perceptual Cognitive Characteristic variables (common and pathognomic) did, when combined with Imaginal Aspect usage, increase the percentage of the variance in ego development accounted for to 19%. Alone, however, neither of the correlations of these two variables with the criterion achieved significance so their independent predictive power is weak. The regression model does suggest, however, that greater usage of Imaginal Aspects combined with lower levels of common and pathognomic Perceptual Cognitive Characteristics is more likely to be found in the lower levels of ego development and vice versa. This raises some interesting questions as to the meaning of having seemingly pathological responses to the

Rorschach cards at the higher levels of ego development. Perhaps this can be understood in light of the literature on highly creative thinkers who appear to have the ability to have access to and make use of their primitive and primary process material in an integrated manner. That is, perhaps a high level of ego development allows for awareness of one's personal "craziness" without this having a maladaptive effect on the person's life. In his examination and norming of the WUSC, Robert Holt (1980) discusses this same point, mentioning that "above approximately I-4, further development has a particularly paradoxical effect: Many persons become less rigidly controlled and feel free to allow the occasional expression of their less developed sides, as in playfulness, humor, or creative use of primary process thinking" (p. 917).

Alternatively, this could suggest a weakness in the Sentence Completion test in that it may not accurately pick up and account for pathology when it is present. What remains to be determined is whether there is a certain level of psychopathology which may eventually lower ego development level. Since none of the participants appeared to possess significant psychopathology, based on the Cornell Index, this is not a

question that can be adequately answered by the current study.

The weakness of the relationship between the WUSC and the Rorschach scoring variables may also be a result of the differences in the operational definitions of the two measures (i.e., the Rorschach makes inferences based on perceptual and cognitive behavior in response to ambiguous stimuli whereas the Sentence Completion Test makes inferences based on completion of already determined sentence stems). This may produce responses which are equivocal -- i.e., confusing because they aren't comparable. In addition, this finding may also be a function of a lack of convergence in the meanings attributed to the concepts purportedly measured (eg., cognitive complexity, level of object relations, and especially, ego).

This highlights a recurrent problem in a field like psychology where concepts are often ambiguous or multiply defined by different writers (eg., terms like ego, unconscious, cognitive complexity, moral development, etc.). For instance, the Burstein-Loucks scoring system is founded on psychoanalytic theory and Loevinger (1976) makes a clear statement of the fact that her usage of the term "ego development" does not reflect the same meaning given to it by many influential psychoanalytic thinkers.

She states, "Although I shall take ego development to cover topics previously given other names, it is also true that the term has been used in ways quite different from mine, particularly by psychoanalysts" (p. 4). She goes on to specify that her meaning for the term differs from those proposed by Spitz (ego development is confined to the stage during which ego comes into existence), Hartmann (development within the "conflict-free sphere"), and Bellak (ego as the seat of many separate functions) (Loevinger, 1976). In this light, the differing theoretical bases for the two instruments may have contributed to the weak correlations between the measures.

In sum, the results of the correlational statistics suggest that scores on ego development level are relatively independent of usage of the Rorschach variables. While this may partially be a function of the limited variability of both types of scores within the populations studied, it may also imply that the two measures evaluate very different aspects of the person and that care should be taken when assuming that two tests measure similar concepts simply because their defining terms appear to be identical.

Discussion of the Extreme Cases

The four most extreme cases were examined for trends in the Rorschach data which might be consistent for the

pairs at similar ego development levels. The identified trends will be discussed. First, however, a summary of the meaning of the two extreme ego development levels (Delta/3 and I-6) will be reviewed.

Definitions of Extreme Ego Development Levels.

There were two persons in the College Scholars sample who scored at I-6, the Integrated level of ego development. Loevinger (1976) admits to knowing less about this stage than the others because it is so rarely found. What is theorized about the personality of the I-6 person is that it is very much centered around the issue of identity. This is a conscious preoccupation, not an unconscious developmental process, and has less to do with roles than with self-fulfillment. Along with the combination of autonomy and relatedness which a person becomes capable of at I-5, the I-6 person adds to that a cherishing of and respect for the individuality of others as well as of oneself. Supposedly the I-6 person is not only able to acknowledge and cope with competing inner needs, values and contradictory beliefs, he or she is also able to renounce what is unattainable, able to live without closure on or resolution of the unresolvable, and is even able to see an existential type of humor in the imperfect nature of human beings and the paradoxes of living. The perceptions of the Integrated person are differentiated

and flexible. They are able to see alternatives and contradictions simultaneously. The increased concern with inner life that begins to develop at I-3/4 is combined with a concern for the outer world, often construed in terms of one's relations to others and also in terms of the broader relation of self to society and humankind.

Two Delta/3 persons were identified in the Honors sample. A Delta/3 person is at a level that has sometimes been called the Ritualistic-Traditional stage of ego development (Hauser, 1976). This is a stage of transition from the opportunistic and self-protective world of the Delta person to the conformist, black and white world of the I-3. At this stage impulses are more firmly under one's control although there is periodic slippage. Thinking is very concrete and simplistic; self and other are perceived in terms of external appearances and traditional sex roles. Causation is couched in physical terms as there is as yet no understanding of the psychological. Even emotions are described in quasi-physical ways. Obedience and conformity to social norms are based on simple and absolute rules. Relationships are probably confusing and difficult for a Delta/3 to navigate as they have moved from being perceived as sources of supply and protection (Delta level) but are not yet construed or valued as a means to approval and fitting in,

as seen at I-3.

Rorschach Trends. The increased cognitive complexity of the higher stages of ego development was expected to show up in an abundance of Integrated Cognitive Complexity Rorschach scores. Not only did this not prove to be true in the samples in general, it also did not hold with the two I-6 cases. These cases made less than average use of the Integrated response and less than the lowest, Delta/3, cases did (see Table 5., page 83). This suggests a lack of consistency in the meaning of cognitive complexity for the two measures. While the Integrated response on the Rorschach suggests an ability to take in many isolated pieces of information and combine them into a meaningful gestalt, the meaning that Loevinger implies has more to do with a cognitive flexibility and elasticity -- that is an ability to see many sides of the same situation and hold in awareness simultaneously contradictory or paradoxical ideas. Again, the error of assuming equivalent meanings for identical terms is illustrated.

Although the increased complexity of the internal life of the I-6 and other high stages was expected to be reflected in increased usage of blends and Imaginal Aspects, this was also not found to be true. The two I-6 cases used less blends and fewer Imaginal Aspects than did

the Delta/3's. As was discussed above, perhaps the lower levels are more likely to have their internal reactions and unconscious fantasies easily stimulated by external stimuli. With these particular cases this idea is further upheld by their higher than average usage of the Imaginal Aspect Animal Movement (AM), which reflects unconscious, disguised fantasies and is also thought to reflect an experience of needs and drives pushing for expression. It follows Loevinger's description of the Delta/3 person that, while impulse life is not out of control at this level, it is a point of constant conflict and struggle.

The two Delta/3 protocols also showed an average amount of the Imaginal Aspect called Inanimate Movement (OM), while the I-6's used none. Given Loevinger's description of the I-6, OM, which is a reflection of the experience of out of control anxiety, emotional flooding, and a fear of losing control, is not likely to show up on higher ego development level protocols.

The I-6's lower production of Imaginal Aspects of any sort may reflect an increased ability to distance oneself from one's internal affective reactions, something that Loevinger does not mention but which may be an important component to being an I-6. This is also a possible explanation for the lack of Affective Toning responses on the I-6 protocols, suggesting an inability to be

spontaneously moved by a stimulus.

This same phenomenon of increased psychological defensiveness, reflective delay, and filtering is also seen in the increased F% ratios of the I-6's and the lower than average F%'s of the Delta/3's. Perhaps at this very high level of ego development what is called an abstract perspective and a tolerance for ambiguity has more to do with a coldly scientific approach to the world which may result in a decreased emotional reactivity, while the lower level Delta/3's have some difficulty in achieving appropriate distance and objectivity some of the time when it is called for. That is, the Delta/3's may be more than optimally reactive and idiosyncratic in their thinking, less able to filter internal perceptions from external perceptions. When they do stick solely to the denotative world of experience the Delta/3's may tend to be rigid in their adherence to conventionality, reflected in their unusually high F+%'s. The F+%'s of the Integrated (I-6) protocols were average for college students which indicates that they have the capacity for adequate reality testing when necessary, without being rigid.

Summary and Conclusions

The College Scholars and Honors groups were found to have both similarities and differences. As predicted, the

College Scholars as a group showed higher average levels of ego development than did the Honors and higher levels than is expected in a randomly chosen population (Molt, 1980). While the average ego development level for the Honors was lower than that of the Scholars, it, too, was slightly above the norm for college educated populations. The results suggest that both groups can be considered atypical and perhaps more alike than different.

The difference in the group means was not large enough to imply that performance on the Loevinger test of ego development would be useful in predicting group membership. However, the fact that the Scholars sample had no occurrences of lower levels of ego development as well as the fact that the extremely high cases were found here exclusively, suggests that attraction to membership in the College Scholars program may require a minimum level of ego development (I-3/4). Successful membership in the Honors program, on the other hand, may require no minimum ego development level, but may not be a satisfactory experience for those with extremely high levels (I-6).

Understanding the limits of ego development levels for each group is helpful in providing a detailed picture of the character styles of the persons attracted to membership in each. In addition, this helps to

distinguish the members of the two groups as different from each other in some important ways even though both are considered equivalent in their academic ability. This might be useful in providing appropriate curricula and expectations for each group.

It was found that the WUSC and the Rorschach were less related than predicted. Prediction of ego development level from usage of Rorschach scoring variables is possible in a limited fashion based on the percentage of Imaginal Aspects used by the subject. It appears likely that less Imaginal Aspect usage will be found at the higher levels of ego development. It is also possible that a decrease in usage of Imaginal Aspects combined with an increase in the usage of common and pathognomic Perceptual Cognitive Characteristics is predictive of higher ego development level. This finding is weak, however, and cannot be generalized with any confidence. One may suspect, in terms of the statistical results, that participants in the Honors and College Scholars programs, except for the few extreme cases, are not different enough from each other to produce variability in their ego development scores sufficient for at least moderate correlation with the Rorschach scoring variables studied. Future research aimed at examining the relationship between these measures could help clarify the

nature of their relationship if samples with increased variability were used.

The more detailed examination of the Rorschach protocols of the two Delta/3 persons revealed trends in their Rorschach performances that were largely in keeping with Loevinger's (1976) description of that stage. Examination of the I-6 Rorschachs provided some contradictory clues as to the nature of this stage but also revealed a lack of consistency in the definitions applied to terms shared by both tests. What was most revealing about the I-6 Rorschach protocols were the indicators of increased psychological defensiveness and distancing from feelings which may result in a decrease in spontaneity. Because there is so little first-hand knowledge of the psychological make-up of persons at the I-6 level, this finding may indicate more accurately that their supposed ability to achieve an abstract perspective and tolerate ambiguity may have more to do with an increased, and perhaps not optimal, distancing from feelings and emotional reactions. Future research is needed using Loevinger's sentence completion test with other personality tests in order to more clearly define her final stage of ego development.

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APPENDIX

LOEVINGER'S WASHINGTON UNIVERSITY
SENTENCE COMPLETION TEST FOR WOMEN (Form 11-68)

Name_____Age_____

Marital Status_____Major_____

Instructions: Complete the following sentences.

1. Raising a family
2. A girl has a right to
3. When they avoided me
4. If my mother
5. Being with other people
6. The thing I like about myself is
7. My mother and I
8. What gets me into trouble is
9. Education
10. When people are helpless
11. Women are lucky because
12. My father
13. A pregnant woman

14. When my mother spanked me, I
15. A wife should
16. I feel sorry
17. Rules are
18. When I get mad
19. When a child will not join in group activities
20. Men are lucky because
21. When they talked about sex, I
22. At times she worried about
23. I am
24. A women feels good when
25. My main problem is
26. My husband and I will
27. The worst thing about being a women
28. A good mother
29. Sometimes she wished that
30. When I am with a man

- 31. When she thought of her mother, she
- 32. If I can't get what I want
- 33. Usually she felt that sex
- 34. For a woman a career is
- 35. My conscience bothers me if
- 36. A woman should always

LOEVINGER'S WASHINGTON UNIVERSITY
SENTENCE COMPLETION TEST FOR MEN (Form 11-68)

Name_____Age_____

Marital Status_____Major_____

Instructions: Complete the following sentences.

1. Raising a family
2. When a child will not join in group activities
3. When they avoided me
4. A man's job
5. Being with other people
6. The thing I like about myself is
7. If my mother
8. Crime and delinquency could be halted if
9. When I am with a woman
10. Education
11. When people are helpless
12. Women are lucky because
13. What gets me into trouble is

14. A good father
15. A man feels good when
16. A wife should
17. I feel sorry
18. A man should always
19. Rules are
20. When they talked about sex
21. Men are lucky because
22. My father and I
23. When his wife asked him to help with the housework
24. Usually he felt that sex
25. At times he worried about
26. If I can't get what I want
27. My main problem is
28. When I am criticized
29. Sometimes he wished that
30. A husband has a right to

- 31. When he thought of his mother, he
- 32. The worst thing about being a man
- 33. If I had more money
- 34. I just can't stand people who
- 35. My conscience bothers me if
- 36. He felt proud that he

VITA

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