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Correlates of the MMPI-A Immaturity (IMM) Scale in an Adolescent Psychiatric Population

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CORRELATES OF THE MMPI-A IMMATURITY (IMM) SCALE IN AN ADOLESCENT PSYCHIATRIC POPULATION

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ABSTRACT

CORRELATES OF THE MMPI-A IMMATURITY (IMM) SCALE
IN AN ADOLESCENT PSYCHIATRIC POPULATION

Eric Albert Imhof
Virginia Consortium for Professional Psychology, 1996
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Despite numerous theories of adolescent ego development, there is no objective measure of ego development or maturation targeted for the assessment of adolescents. The Immaturity (IMM) Scale developed for the Minnesota Multiphasic Personality Inventory - Adolescent (MMPI-A) was designed to fill this void in adolescent assessment. The present study examined the concurrent validity of the IMM Scale based on sixty-six adolescents (13-18 years old) in an inpatient setting using four prominent measures of maturity, i.e., The Defining Issues Test (DIT), the Washington University Sentence Completion Test (WUSCT), the Extended Objective Measure of Ego Identity Status - Second Revision (EOM-EIS-2), and the Wechsler Intelligence Scales including the Wechsler Intelligence Scale for Children - Third Revision (WISC-III), the Wechsler Intelligence Scale for Children - Revised (WISC-R), and the Wechsler Adult Intelligence Scale - Revised (WAIS-R). Additionally, demographic profiles and staff ratings using the Devereux Adolescent Behavior Rating Scale (DABRS) were employed to examine the external correlates of the IMM Scale. Correlations, analysis of covariance, and a stepwise

multiple regression were conducted to examine the relationship between the IMM Scale and the instruments listed above. The results of this study provide concurrent validity for the IMM Scale and support the construct validity of the IMM Scale as a measure of maturity. A number of descriptors for high and low scores on the IMM Scale are provided. This study does not support the use of the IMM Scale as a moderator variable in the MMPI-A Basic Scale interpretation.

DEDICATION

The following is dedicated to the teachers who have greatly enriched my life in so many ways.

To

MARY MICHEALEAN MONAHAN

my
twelfth grade government teacher who saw in me so many things I had not yet seen myself.
She believed in me when others would not; and had the patience to help me realize my potential.
I will always be grateful for her friendship;
a gift I will never be able to repay her.

To

ROBERT PATRICK ARCHER, PHD

A
teacher, mentor, skipper, and friend.
His love of learning has inspired me and
fueled my interest and enthusiasm for the field.

"You can do business with anyone
but
you can only sail with a gentleman."
(J. P. Morgan)

And in memory of

DAVID L. PANCOAST, PHD

It
is my privilege to continue his work on
the Immaturity Scale;
may
his dreams and ideas be carried on
by those lives he touched.

THANK YOU

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CHAPTER I

INTRODUCTION

The majority of personality theorists including Erikson (1963), Freud (1933), Kohlberg (1976, 1981), and Piaget (1966) have sought to provide a developmental component to their theories of adolescence. Although these theorists provide invaluable conceptual frameworks for understanding development, their data are often derived from clinical observation of individual cases rather than from rigorously designed psychometric instruments. Although some standardized assessment instruments that measure components of ego development are available, few are designed to evaluate the varied concepts inherent to theories of adolescence. Some of the most prominent developmental measures currently available to the clinician are the Washington University Sentence Completion Test (WUSCT; Loevinger & Wessler, 1970) which is based on the theories of Loevinger, the Defining Issues Test (DIT; Rest, 1979b) which is based on Kohlberg's theory of moral development, the Extended Objective Measure of Ego Identity Status, Second Revision (EOM-EIS-2; Adams, Bennion, & Huh, 1989) which is based on Erikson's concept of identity development, and the

Wechsler Scales of Intelligence, The Wechsler Adult Intelligence Scale - Revised (WAIS-R; Wechsler, 1981), the Wechsler Intelligence Scale for Children - Revised (WISC-R; Wechsler, 1974), and the Wechsler Intelligence Scale for Children - Third Revision (WISC-III; Wechsler, 1991), which are related to cognitive maturation.

All of the developmental theories cited above are stage theories in that development is conceptualized as proceeding in a stepwise manner with each stage identified by distinguishing behavior patterns. These stage theorists may differ in how they define their stages, but all of them share some fundamental assumptions (Bijou, 1968). Stage theorists assume that individuals progress through hierarchical stages in a fixed sequence with each stage representing a form of organization, learning, or maturation that is more complex than the previous one. While individuals may progress through these stages at different rates and at different ages, and some may never progress through all stages, the sequence is considered universal. Due to the sequential nature of organization, each stage evolves from the previous one and participants are generally thought to advance through the stages in order, without

skipping stages. Most stage theorists agree that stage related behavior patterns are not typically exact or rigidly separated. Individuals may behave as if they are in one stage and then, under different circumstances, behave as if they are in another stage. These issues will become apparent in the following review of relevant developmental stage theories and the assessment instruments primarily identified with each theory. Although the present study focuses specifically on the adolescent age period (13 -18 years), the following theories are reviewed in their entirety to provide pertinent background information specific to the theory.

Piaget's Cognitive Development Model

Piaget is most associated with cognitive development (Elkind, 1974, 1981) and his work has been the most influential in this field over the last century. Piaget considered himself a biologist rather than a psychologist, and his theory reflects this orientation. Piaget conceptualized intelligence as a biological adaptation of the individual to his environment. The basic tenet of Piaget's theory is that an adult's perception of the world is not simply the direct result of environmental experience

but is constructed and maintained over time through an innate logic. For Piaget, cognitive development equals the movement of the individual first through a period of immediate action-reaction response to the environment then to a symbolic level of interaction, and finally to a process of internal reaction and problem solving.

Two inherent tendencies govern the individual's interactions with the environment. The first, the Scheme, Piaget (1966) described as an individual mental structure which represents a general class of objects, events or actions. Schemes are the basic unit of cognitive structure. The level of abstraction (i.e., dog vs. justice) and complexity (i.e., tying one's shoe vs. sailing a boat) differs for each scheme. The second inherent feature, Organization, is the combination of two or more separate schemes into one higher-order integrated scheme. Piaget devoted his career to the clinical observation and recording of these basic operations in children and adolescents. He formulated a developmental stage theory, in which the child progresses through a series of stages marked by the acquisition of specific cognitive abilities. In fact, Piaget's theory examines how children learn to understand

the underlying stability of their world despite varying and often conflictual input from their environment. Two fundamental cognitive abilities in Piaget's (1966) theory include, object permanence and conservation which will be described in more detail below.

The cognitive processes of adaptation, assimilation and accommodation, are utilized by the child to store new knowledge which takes the form of classified and organized schemata. Assimilation is the incorporation of novel perceptual input into the individual's existing scheme. For example, when a child sees a turkey that he or she has not seen before, that child is able to utilize the available cues, (i.e., the animal possesses a beak and feathers) to classify that animal within the "bird" scheme. A child who has not yet developed this skill will either be confused as to how to classify that animal or will give that animal an inaccurate classification. Accommodation, on the other hand, is when new inputs cannot be assimilated into the child's existing structure and force a reorganization of the existing scheme. For example, turkeys do not fly, therefore, the child would have to readjust his or her "bird" scheme to incorporate birds which do not fly.

Object permanence (Piaget, 1966) is one of the infant child's first cognitive milestones. Object permanence refers to the child's ability to understand that an object which is removed from direct view continues to exist. This concept explains the young child's fascination with the Peek-a-Boo game. For a child who has not acquired object permanence this is a game of constant surprise, a face that disappears and reappears. As the child matures, his or her use of object permanence becomes more sophisticated.

Conservation is defined by Piaget as the reality of permanence in some feature of the world despite an apparent change in that feature. Piaget's classic example of conservation is the child's understanding that a quantity of water is conserved when moved between two different sized containers (see Figure 1).

Insert Figure 1 about here

In his research, Piaget found that some children perceived container C as having more liquid than container A while other children determined that containers A and C held the same amount of liquid. For Piaget this difference in

perception became the demarcation between pre-operational and operational cognitive stages.

Using the skills of assimilation and accommodation children achieve further developmental milestones, and Piaget's stages are described by which cluster of milestones the child has achieved. Piaget divides cognitive growth into four major stages which roughly correspond to the age ranges of birth to two years, two to seven years, seven to twelve, and twelve to fifteen years of age. Development beyond fifteen years of age is considered to be a further refinement in the development of the final Formal Operations Stage.

Stage 1, the Sensorimotor Stage, ranges in age from birth to two years. The child's first impressions of the world are formed by his or her innate reflexes. The infant at this stage of development possesses a self-centered view of the world but, through the use of developing perceptual abilities, the child acquires comprehension of the physical world and understands the existence of separate objects. Toward the later half of this stage the child develops the awareness that these external objects are permanent and separate from self. Furthermore, the child begins to

identify him or herself as an object in the environment with the power to manipulate other objects. While the Sensorimotor Stage is described primarily in terms of the physical maturation of sensory and motor skills, the last three stages are defined in terms of cognitive operations.

Stage two, the Preoperational Stage, ranges in age from approximately two to seven years of age. At this stage, the child still thinks in egocentric terms and is unable to adopt the perspective of others in social interactions but is moving toward a less self-centered perspective. The child does not believe the world is manipulated solely by him or herself, but instead tends to be animistic, attributing the movement of all things, including inanimate objects, to living forces. This is the basis of the preschooler's endearing and often cited request for a parent to make a sunset happen again. This is the stage at which the child acquires primary language skills with which to form symbolic representations of the external world. While the child possesses symbolic representations, the child cannot yet perform mental manipulations on these symbols and can only focus attention on one property at a time when examining objects.

The Concrete Operational Stage, the third stage, covers the age range of seven to about twelve years. At this stage, the child can perform mental operations which involve physical objects but has not developed the cognitive capacity to grasp abstract concepts. The child is able to classify, number, and arrange objects in a series. This stage is also identified by the child's acquisition of conservation in number, mass, and weight. However, the child's use of logical reasoning is based primarily on concrete or realistic relationships. For example, the child can understand the concept of two cats and a dog but cannot understand the abstract concepts of liberty and justice, and is not capable of hypothetical thought.

Piaget's last stage, Formal Operations, begins at about age twelve and continues through adulthood. Although Piaget (1960) states that the majority of cognitive growth occurs by age 15, the individual continues to refine the use of the concepts achieved in the Formal Operations Stage throughout adulthood. This stage is identified by the ability to appreciate abstract concepts (i.e., liberty and justice), formal logic, and complex relationships. The individual is able to think in abstract terms and discuss hypothetical

events. Furthermore, the individual utilizes systematic investigation to solve problems by formulating a series of possible solutions and testing those solutions. Additional cognitive and logical abilities acquired at this stage are probability, identity (i.e., mathematical relationship when one equals another), negation (i.e., something does not belong to a category), and reciprocity (i.e., if A = B then B = A).

Piaget investigated these hypotheses through systematic clinical observation of children at various ages. Within these clinical interactions, Piaget would pose a question or problem to the child and then analyze the child's answers, attending to both the incorrect and correct responses. Through the analysis of the child's answer, Piaget would formulate hypotheses regarding the child's underlying structure of thought and then test his hypotheses by offering the child altered tasks, posing the problem differently, or by suggesting a response to the child that was different from what his theory predicted. For example, he would assess conservation via the task shown in Figure 1. The child would be shown beakers A and B filled with equal amounts of liquid and an empty beaker (C). The child would

be asked whether beakers A and B contained the same amount of liquid. The liquid in beaker B would then be poured in to beaker C and the child asked whether beaker A or C contained more liquid. If the child stated that beaker C contained more it would be assumed he or she had not developed the cognitive abilities involving conservation and, therefore, would fall within the Preoperational Stage. If the child were to answer that both contained the same amount of liquid, then the child would be assumed to have developed the cognitive skills inherent to conservation and would therefore be in the Concrete Operational Stage.

While Piaget was able to construct a detailed stage model of cognitive development, he has been criticized for his method of assessment (Phillips, 1969). The problems with Piaget's method of assessment are numerous. Most importantly, this type of assessment is poorly standardized. Piaget's method of inquiry, hypothesis formation, and alteration of the original problem increase the number of possible sources of error (i.e., examiner error, social desirability) which will alter the administration of tasks across subjects. Given the standardization problems with Piaget's assessment procedures, creating a normative sample

for comparison is a demanding task. Piaget based his norms for development on his clinical observations, not on a methodologically sound, stratified sample that had been given standardized tests. Lastly, the time involvement for assessing children in this capacity is considerable.

While there have been attempts to incorporate Piaget's theory into a standardized assessment instrument (Phillips, 1969; Sattler, 1988), "there is presently no comprehensive battery of Piagetian tests of intelligence" (Sattler, 1988, p.55). While there may not be assessment instruments of Piaget's concepts, there exist a number of similarities between Piagetian and psychometric approaches to assessment. For example, both approaches accept a maturational determination of intelligence, both attempt to measure intellectual functions that the child is expected to have developed by a certain age, both conceive of intelligence as essentially rational, and both are capable of predicting intellectual behavior outside of the testing situation. However, in his review of the research, Sattler (1988) stated, "studies have consistently shown that correlations between Piagetian tasks and contemporary psychometric scales of intelligence... are consistently positive and generally

moderate in magnitude" (p. 55). Therefore, it appears that there is a common factor measured by Piagetian tasks and standard psychometric tests of intelligence.

While many psychometric instruments have been developed to measure intelligence, none have achieved the popularity of the Wechsler Intelligence Scales. In fact, the Wechsler Scales have been the preferred instrument of intelligence assessment for most psychologists (Archer, Maruish, Piotrowski, & Imhof, 1991; Lubin, Larsen, & Matarazzo, 1984) due to the sound psychometric properties of these scales.

The Wechsler Scales

The Wechsler scales were designed to assess those aspects of intelligence which are currently quantifiable. Wechsler's conceptualization of intelligence is not simply that of one quantifiable general ability but of numerous separate abilities which together comprise the concept of intelligence. Wechsler (1958) believed, in much the same way as Piaget, that intelligence is "the aggregate [of these abilities] or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his [or her] environment" (p. 7). Therefore, within the Full Scale Intelligence Quotient (FSIQ), the Wechsler

scale assesses a broad range of abilities which Wechsler grouped into two broad categories, Verbal Intelligence Quotient (VIQ) and Performance Intelligence Quotient (PIQ). The VIQ consists largely of verbal or language mediated skills and includes the subtests Information, Digit Span (does not figure into VIQ in WISC-R and WISC-III), Vocabulary, Arithmetic, Comprehension, and Similarities. The PIQ addresses skills of a more visual-motor nature and includes the Picture Completion, Picture Arrangement, Block Design, Object Assembly, and Digit Symbol (titled Coding for WISC-R and WISC-III) subtests.

Wechsler sought to measure intelligence by presenting the participant with a set of standardized questions and tasks which would effectively assess that individual's potential for purposeful and meaningful behavior. The score that an individual receives on a particular subtest is based on a criterion reference. The items in each subtest increase in difficulty based on the responses of a sample of normal individuals. The items increase in difficulty so that individuals pass less difficult items until they eventually reach those items which are beyond their cognitive abilities. They are given points for those items

they answer correctly which figure into the VIQ, PIQ, and the FSIQ raw scores. These raw scores are then compared to the normative tables for that individual's age group to produce the VIQ, PIQ and FSIQ. These normative tables are based upon sophisticated methodology that includes stratified sampling techniques (Wechsler, 1974, 1981, & 1991).

Loevinger's Ego Development Concept

Loevinger's conceptualization of ego-development is best described as "...referring to the framework of meaning that the individual subjectively imposes on experience" (Hauser, Powers, Noam, Jacobson, Weiss, & Follansbee, 1984, p. 196). Loevinger conceptualizes that ego development occurs in a series of nine sequential stages and levels. These stages and levels occur in sequence, each stage building upon the previous stage. Loevinger elected not to assign age specific guidelines to her developmental stages due to a high degree of developmental variability among same aged participants (Loevinger, 1976).

The first stage is the Presocial/Symbiotic (I-1) Stage. In this stage, the child is considered to lack an ego and is attempting to differentiate him or herself from the

surrounding environment. The presocial aspect of this stage is identified in the infant's attempts to differentiate him or herself from the environment. Piaget's (1966) cognitive developmental concepts of object constancy and conservation of objects are relevant to Loevinger's ego development theory, though Loevinger describes a psychological rather than a maturational process. The child who remains in this stage, unable to differentiate self from inanimate objects, is referred to as autistic.

The symbiotic nature of this stage refers to the infant's tendency to remain unable to clearly differentiate from the mother in a way that would permit independent manipulations of separate, stable objects in the environment. The infant's development of language skills facilitates emergence from the symbiotic stage into the Impulsive Stage.

The next stage, the Impulsive Stage (I-2), is identified by the child's beginning to establish his or her own identity through impulsive behavior as evidenced by "..the emphatic 'No' and the later 'Do it by self'..." (Loevinger, 1976, p. 16). At first, the child responds only to the use, or threat, of force by the parents. As the

child matures, his or her impulses are then controlled by immediate reinforcers or punishers.

The child at this stage tends to be self-focused. The child tends to externalize problems, often blaming the environment for his or her frustrations. The child tends to label others as good and bad, not as a moral judgement but more as a value judgement of what they provide or not do not provide for the child. The child at this stage needs others and is highly dependent and demanding in social interactions, often valuing others according to how well they meet the child's personal needs. Loevinger (1976) describes the child who remains in this stage as "uncontrollable" or "incorrigible" (p. 16).

The next stage, the Self-Protective Stage (Delta), is marked by the child moving from external to internal controls. The child attempts to control his or her impulses and anticipate short-term rewards and punishments. However, the child fails to adequately comprehend rules and regulations and uses them in a very egocentric and crude fashion, mostly for self-satisfaction and protection. The child comprehends the idea of blame but externalizes blame to circumstances or other people. Loevinger explains the

common imaginary friend, who receives the blame for the child's wrongdoing, as a byproduct of this stage of development. The child's main rule is "...Don't get caught..." (Loevinger, 1976, p. 17).

A child who remains fixated in this stage of development may be described as opportunistic, deceptive, and exploitive of others (Loevinger, 1976). These individuals appear to lack the trust necessary for the transition into the next stage and live their lives with the perception and anxiety that others are their constant rivals.

The Conformist Stage (I-3) is characterized by the child's identification of his or her own welfare with that of the family or group. The conformist obeys rules not because he or she fears punishment as in the previous stage, but rather because they are simply the group rules. The individual's value system is based upon rigid adherence to group rules without consideration for the consequences of the action. An application of rules in this framework is "Because it's the law" or "Because I said so".

This tendency to follow the identified group's standards of behavior is an evidence of trust. By belonging

to a group the individual feels a sense of comfort and security. The individual protects this sense of belonging by rigidly defining the group along obvious characteristics or stereotypes (i.e. age, sex, race). Furthermore, the individual begins to exhibit concern regarding how they appear to others, as their acceptance within the group depends upon their following the group mores.

The Self-Aware Level: Transition from Conformist to Conscientious Stage (I-3/4) is a transition point which has been found to be the modal level for adults (Loevinger, 1976). This is not a stage but rather a level of functioning. This transition is marked by an increased self-awareness and the acknowledgement that one is fallible. Furthermore, the individual comes to appreciate the various alternatives inherent to any situation. However, the individual makes crude applications of this conceptualization such as exceptions and contingencies being based on stereotypical or demographic variables rather than on individual preferences and needs. Loevinger (1976) provides an example of this type of thinking: "...people should not have children unless they are married, or unless they are old enough" (p. 19). Loevinger continues,

postulating that an individual in the next stage would state that people should have children if "...they really want children, or... the parents really love each other" (p. 19). This stage sets the framework for the following stage.

The next stage, the Conscientious Stage (I-4), is identified by the individual's internalization of rules that they have evaluated and chosen for themselves. This stage marks a focus on internal standards and the development of one's own moral code. The individual develops long-term goals which are regulated and evaluated by the individual's ability to utilize self-criticism and self-evaluation. Loevinger (1976) states that very few 13- to 14-year-olds develop this capacity and progress into this stage.

The Conscientious individual is able to view situations from others' perspectives. An individual at this stage no longer perceives rules in absolute terms but realizes that there are exceptions and contingencies to every rule. Therefore, the Conscientious individual may break the rules in following what they perceive is correct for that situation.

This is also the point at which the conscience and sense of responsibility for one's self and others begins to

develop. The individual feels compelled to help others and prevent them from making mistakes. These developments, combined with the individual's ability to view situations from different perspectives, heightens the ability to interact interpersonally in a reciprocal manner.

The Individualistic Level: Transition from Conscientious to Autonomous Stages (I-4/5) "...is marked by a heightened sense of individuality..." (Loevinger, 1976, p. 22). As the Conscientious person's appreciation for individual differences and complexities inherent in situations increases, he or she is able to be more accepting of self and others; this being the cornerstone of the Individualistic Level. The individual also begins to recognize the conflict between the achievement associated with reaching one's standards and one's relationships with others. The paradoxes of this conflict, however, are not yet fully internalized. Loevinger (1976) provides an example of this inner conflict when an individual must choose between a career and marriage. The failure to fully internalize this conflict is presented when that individual blames his or her spouse for the conflict, expecting the

spouse to be more helpful and reduce the burden of the conflict.

The Autonomous Stage (I-5) is marked by the capacity to acknowledge and cope with inner conflict without projecting it onto the environment. Individuals in this stage recognize the existential humor in the paradoxes of human existence. They are able to integrate ideas which may appear to those at lower stages as incompatible alternatives. They do not perceive situations as black and white or view problems as polar opposites, but see situations as multifaceted and complex. These individuals recognize the need for autonomy in others (i.e., allowing children to make their own mistakes) but are also aware of the limitations of autonomy and accept emotional dependence as a natural part of life.

The final Stage, the Integrated Stage (I-6), is characterized by surpassing the conflicts of the Autonomous Stage and consolidating of a sense of personal identity. Loevinger draws parallels between the Integrated Stage and Maslow's (1970) Self-Actualized person. Furthermore, Loevinger admits that this stage is the hardest to define and study because of its rarity, and the fact that

psychologists' own limitations interfere with their ability to comprehend the many aspects of this stage.

Many researchers (Gfellner, 1986a; Hauser, 1978; Hauser, 1976; Hauser, Jacobson, Noam, & Powers, 1983; Hauser et al., 1984; Noam, Hauser, Santostefano, Garrison, Jacobson, Powers, & Mead, 1984), including Loevinger (Redmore & Loevinger, 1979), have preferred to collapse Stages 2 through 4/5 into general groupings for conducting research. These groupings are Preconformist (I-2 and Delta/3), Conformist (I-3 and I-3/4), and Postconformist (I-4 and I-4/5). Descriptions of these groupings are as follows: Individuals in the Preconformist developmental grouping tends to be wary, impulsive, demanding, and a concrete reasoner. Furthermore, he or she has stereotyped cognitive styles and exploitive or dependent interpersonal styles. The second grouping, Conformist, consists of individuals who tend to verbally express their feelings but who do so in terms of cliches, stereotypes and moral judgements. The final grouping, Postconformist, tends to consist of individuals who cope with conflict through self-perception, demonstrate cognitive complexity, and who

possess interpersonal styles which emphasize mutuality, autonomy, empathy, and acceptance of individual differences.

The Washington University Sentence Completion Test

In developing the Washington University Sentence Completion Test, Loevinger and Wessler (1970) assumed that each individual has a core level of functioning within Loevinger's theory. They utilized a sentence completion format to assess the individual's level of ego development. Each of the 36 responses is matched against a sequence of qualitative stages, utilizing response examples provided in the scoring manual (Loevinger & Wessler, 1970). The raw score is tabulated and then a frequency count is completed. Then an distribution is completed using the distribution rules provided in the scoring manual (Loevinger & Wessler, 1970). These calculations identify the stage at which the individual is functioning most frequently. Loevinger and Wessler (1970) provide extensive rational and empirical support for their classification system.

Kohlberg's Moral Development Model

Kohlberg's (1976) cognitive developmental approach to moral development takes the form of a stage and sequence model similar to Piaget's (1966) and Loevinger's (1976)

theories. In fact, Kohlberg's theory of moral development was based on Piaget's (1932, 1956) work. Kohlberg, however, found Piaget's descriptions of moral stages to be incomplete and he sought to refine Piaget's ideas on moral development into a more precise stage conceptualization. Furthermore, Kohlberg found Piaget's theory to be so intensely focused on moral development in childhood, that the theory was limited in its application to adolescents and adults. Kohlberg's contribution has been described as a revision and expansion of Piaget's original moral judgement stage system. Kolhberg's theory focuses on "...how individuals prioritize and integrate principles that are used to determine a course of action in a given situation as right or wrong" (Schlaefli, Rest, & Thoma, 1985, p.319).

Windmiller, Lambert and Turiel (1980) state that "most people believe that children learn morality by observing adults or by being instructed in moral virtues by adults" (p.38) and that as the child grows the child's level of morality approaches that of his or her role model. Structural developmentalists, such as Kolhberg, disagree stating that this tenet does not allow for the anomaly or the fact that some individuals eventually supersede the

morality of their parents or society. Furthermore, the structural developmentalists posit that the individual is more creative in his or her abilities to understand and conceptualize morality and moral dilemmas, but this creativity and understanding is reflective of specific developmental stages. As the child matures, the child cultivates his or her own morality by actively structuring and restructuring social experiences. Progress consists of a series of such reorganizations which change the nature of the individual's moral knowledge. Each individual progresses in a sequence which is invariant for all individuals. Each mode or stage of moral organization is necessary for the emergence of its successor. While the progression outlined above is the same for all individuals, the rate at which and the extent to which they progress through these stages varies given critical factors such as intellectual ability, environment, and educational opportunities.

Kolhberg claims that cognitive development establishes the broad limits of the individual's progress through moral stages. As cognitive structures become more complex, a corresponding complexity of moral reasoning is possible. In

principle, one must be able to understand and believe principles before one can follow those principles in behavior. Thus, cognitive development, which is influenced by numerous factors in the child's environment, in turn, influences moral development.

Kohlberg proposed six stages in his conceptualization of moral development. Each of these six stages are grouped together to form developmental levels. These stages are grouped by level and defined by Kohlberg (1981) as follows:

Level A: The Preconventional Level:

Kohlberg defined the first stage, The Stage of Punishment and Disobedience, in the following:

> ...the physical consequence of the action determines goodness or badness regardless of the human meaning or values of these consequences. Avoidance or punishment and unquestioning deference to power are valued in their own right... (1963, p.34).

The child at this stage of development does not have an internalized moral system but rather relies on an external moral system which is conveyed to the child via physical consequences. Therefore, the child's approach to morality is to avoid breaking the rules solely to avoid punishment by powerful authority figures. The child is egocentric in the

sense that he or she is unable to perceive the situation from the perspective of others.

The second stage is The Stage of Individual and Instrumental Purpose and Exchange (Reciprocity). The child is concrete and individualistic at this stage and approaches moral reasoning in accordance with these traits. The child's reasons for behaving in the correct manner are primarily to meet his or her own needs. While there is recognition that others have needs as well, they are of secondary concern. These children are able to separate their interests and perspectives from that of others. They understand that each person is trying to meet his or her needs and therefore what is right or correct is relative. The child integrates his or her own needs and others' needs (which may be in conflict) through equal exchanges (i.e., I'll scratch your back if you scratch mine) or evening the score (i.e., an eye for an eye, a tooth for a tooth).

Level B: The Conventional Level:

The stage of Mutual Interpersonal Expectations, Relationships, and Conformity (Good Child) is marked by the child's comprehension and adherence to the principle of the golden rule. The child values the generosity and

forgiveness of wrong doings. Justice is equal to doing good within the context of interpersonal relations. What the child perceives as important in relationships is playing nice, being concerned about others and their feelings, and living up to the expectations of others. The child begins to develop social skills which include mutual relations, maintenance of trust, loyalty, and respect. While the child is able to take the other's position, he or she does not yet take a generalized societal perspective; the focus is on his or her immediate world.

Stage four, The stage of Social System and Consciousness Maintenance (Law and Order), extends the sense of justice of stage three to the entire social order or community. The individual's perspective is defined by the community which establishes the roles and rules of the individual. Justice is equal to establishing good citizenship and working hard to maintain the laws and welfare of the community.

Level B/C: Transitional Level:

At this level the individual has some conventional thoughts and behaviors yet does not possess the qualities of someone that is functioning at the Principled level. The

individual recognizes that choice is personal and subjective. An individual at this stage is able to take a perspective outside of the society and does not consider him or herself committed to the moral values of a particular society. This individual often chooses to follow the values and rules of a particular society but has no internal principles to support his or her choice.

Level C: Principled Level:

At The Stage of Prior Rights and Social Contract or Utility (Social Contract), the individual begins to contemplate ethical issues such as why one should be moral. Moral responsibility is seen as binding upon all those who would claim the rights to society. The individual is able to see that what is right is relative to one's group values but that the basic rights (i.e., life and liberty) of a society take precedence over these relative rights. The individual's reasoning for this approach is that of abiding by the laws for the protection of oneself and others (i.e. the greatest good for the greatest number). The individual at this stage comprehends the moral and legal conflicts but has difficulty integrating the two perspectives into a workable moral system.

The final stage, The Stage of Universal Ethical Principles, is denoted by the individuals's ability to assume the role of all parties in a moral conflict and appreciate each party's perspective. The principles utilized by these individuals focus on the equality of human rights and respect for the dignity of human beings as individuals. These principles are utilized to generate moral decisions. These individuals understand that solutions may transcend obedience to society's codes but that these solutions always respect the rights of others. Equal rights are supreme for these individuals and laws are recognized as imperfect approximations toward equal rights.

In 1983, Kohlberg, Levine, and Hewer extensively revised Kohlberg's original theory of moral development. Kohlberg et al. attempted to accommodate criticisms and bring the theory into line with Piaget's (1960) standards for a stage theory. The major revisions by Kohlberg et al. were the addition of "hard" and "soft" stages and the addition of a seventh stage, Ethical and Religious Problems. Furthermore, the name of the theory was changed to Justice Reasoning. This later change is less significant to the functioning of the theory than the addition of "hard" and

"soft" stages. "Soft" stages are distinguished from "hard" stages in that a "soft" stage minimizes the focus on normative development. "Soft" stages depend on formal reflections or moral thinking, not on the performance of tasks. "Hard" stages, on the other hand, accentuate normative standards and meet Piaget's (1960) criteria for a formal stage.

In their research on A and B substages, Candee and Kohlberg (1983a, 1983b) and Kohlberg and Candee (1983) found that an individual who scored in a B substage was more likely to follow moral reasoning in his or her action than the individual who scored in substage A. This finding is explained by the fact that an individual scoring in the B substage is more likely to link moral reasoning to moral action, in part due to the comprehension of the moral reasoning at that stage. The person scoring in the A substage is less likely to translate moral reasoning into action because, while he or she fears the consequences for not adhering to the rules, he or she does not fully comprehend them, thus he or she is less likely to reason the correct response in a novel moral situation.

The second major revision to Kohlberg's theory was the elimination of stage six, Universal Ethical Principles, because it was empirically unidentifiable (Kohlberg et al, 1983) and the addition of a "soft" seventh stage Ethical and Religious Problems. The seventh stage is based on the construction of a sense of identity or unity in one's life or with God. These individuals struggle with moral and ethical issues which move beyond the domain of justice and move into metaethical, metaphysical, and religious epistomologies.

In his efforts to empirically identify these stages of moral development, Kohlberg utilized moral story dilemmas to investigate moral philosophy (i.e. responsibility, value of life, rules and norms, and property issues). Kohlberg borrowed this format from Piaget but utilized stories which were adult focused. Therefore, we would "...expect Kohlberg's view of adolescent and adult moral development to be sharper than his view of childhood moral development..." (Windmiller et al., 1980, p. 42).

The Defining Issues Test

The only instrument available to test empirically for moral development was Kohlberg's (1976) moral judgement

interview. In this approach, participants respond to hypothetical stories which "...raise moral judgement issues and then [ask] them to explain and justify their views" in written format (Rest, 1976, p. 199). Rest determined that the data obtained using Kohlberg's method were not empirically valid due to poor standardization of the interviews. Rest (1974, 1979b, 1990) attempted to rectify this problem in developing the Defining Issues Test (DIT). This test is standardized and "...attempts to assess what people see as crucial moral issues in a situation" (Rest, 1976, p. 204). The responses to the DIT are scored on the definitions of the six stages as proposed by Kohlberg: Punishment and Obedience, Reciprocity, Good Child, Law and Order, Social Contract, and Universal Ethical Principles.

The DIT requires the participant to read a moral dilemma and respond to 12 issues about the implications of that situation. The participant then rates these 12 issues on a five point scale in terms of how important that issue was in their decision in solving the dilemma. The participant also is asked to select the four most important issues of the situation.

Rest designed each of these issues so that it displays characteristics of one particular stage of Kohlberg's six stages of moral development. The DIT was designed to present the participant with a forced choice between different concepts of justice/morality (e.g., if the individual consistently responds with Stage 4 reasoning then it is possible to infer that this concept of justice is prevalent in the individual's thinking). The participant, in choosing his or her responses to the dilemma, responds with his or her best answer which varies according to the developmental level of the participant. According to Carrol and Rest (1982) the DIT assumes that people at different developmental stages define the crucial issues or moral dilemmas differently. The DIT is designed to work as a developmental measure of moral judgement by a dual process of comprehension and preference. Less developed participants do not pick the highest stage items because they do not comprehend them; more developed participants do not pick the lower stage items because they are viewed as too simplistic.

The respondents define the critical issues differently and have different intuitions about what is right and fair in a

given situation. These differences are believed to reflect the participant's underlying tendencies to organize his or her social experiences.

Rest also claims that there are several other methodological advantages of the DIT which facilitate its use over Kohlberg's (1976) moral judgement interview. These advantages include:

> 1) the DIT is highly structured so that the information (obtained) from each participant is comparable;
> 2) the DIT minimizes variance in stage scores caused by individual differences in verbal expressitivity;
> 3) the DIT is objectively scored (often by a computer), saving time and minimizing scorer bias;
> 4) each test item and participant response is discrete and can be analyzed separately; each part of the test can be checked for reliability and its contributions to trends. (Rest, 1975, p.77)

Therefore, the DIT measures moral development in a more standardized and objective manner than Kohlberg's (1976) moral judgement interview. This increased validity is due, in part, to Rest's use of a recognition task, rather than a production task as used by Kohlberg. Rest reasoned that with a production task, an individual may have an understanding of higher moral principles but articulate them poorly and obtain a misleading lower score. This hypotheses is validated in research by Rest (1979c).

The DIT results are divided into eleven sections as follows: Stage 2, Stage 3, Stage 4, Stage 5A, Stage 5B, Stage 6, A, M, P, D, U. Stage 2 through Stage 6 correspond to Kohlberg's morality levels. These stages

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Insert Table 1 about here

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are briefly outlined in Table 1.

Although the participants have scores for each stage, a participant's score is not represented in terms of a single stage (Rest, 1979b). Reporting the scores for all the stages allows the progression of the participant through the stages to become apparent; "... over time and with development, participants come to use less of the lower stages and more of the higher stages" (Rest, 1979b, p.5). This implies that the individual's score will be highest under the stage where he or she performs the majority of the time, but that the individual will score under all stages to a lesser degree. As the individual's moral reasoning develops, the participants highest score falls in the higher stages. "Development is therefore a matter of increases in

Stages 5 and 6 and decreases in the lower stages" (Rest, 1979b, p.5).

Rest then collapses these stages into three levels of moral development. The first level, Premoral, is identified by egocentric thought and the child's apparent inability to think of anyone's needs but his or her own. The second level is the Conventional Level and is defined by the child's developing mental operations and the ability to adopt conventional roles and maintain them for the sake of social stability. The third stage, Principled Level, is defined by formal operational thought and the ability to understand morality in more abstract terms, first as a democratic social contract and then on a basis of pure ethical principles. Rest (1979a) stated that participants' responses on the DIT were influenced by maturational variables (i.e., chronological age and years of education). Rest (1979b) supported this claim in a follow-up longitudinal study in a high school age population. Furthermore, Rest (1986) cites extensive data which supports this finding. Thoma and Davison (1983) sought to isolate these variables in concordance with the amount of variance they accounted for in determining one's level of morality as

measured by the DIT. Their results supported the hypothesis that older individuals were likely to score higher on the DIT but that this finding was due to the interaction of selection and environmental (educational) effects. Furthermore, they found that females score higher on the DIT, indicating that females have higher levels of moral development in relation to their same age male peers.

Erikson's Psychosocial Development Model

Although based on psychoanalytic principles, Erikson's (1963) theory of psychosocial development places less emphasis on sexuality than Freud's and instead focuses on the interactions between the individual and society. Erikson identifies a series of psychosocial crises or conflicts that demarcate the different stages of life. At each stage, the person's needs interact or conflict with those of society in some fashion. For example, the issue of toilet training in Freud's anal stage represents a conflict between the child's autonomy and shame or self-doubt in Erikson's psychosocial theory. This conflict arises out of the societal demand (represented by the parents) that the child develop the correct elimination behaviors. Thus, we see the conflict between the individual's need and the needs

of society that Erikson described. Erikson outlined a number of these conflicts which delineate different developmental stages in the individual's life, and he provided approximate age periods for their occurrence.

In the first stage, Basic Trust versus Mistrust, the development of trust is the primary conflict. This stage occurs during infancy when the child first experiences interactions with others. In order to foster basic trust, the parents must provide a stable, supportive environment with an emphasis on love and nurturance. Once the infant develops basic trust in the primary care giver and that infant feels secure, it develops tolerance to be separated from the primary care giver for an extended period of time. Also, the child develops a sense of hope from these positive interactions with the primary care giver. Hope develops when the care giver is consistent, provides nourishment, and returns from an absence. With each positive experience of hope, the infant's sense of hope and trust increases. Failure to instill a sense of trust develops a sense of estrangement and abandonment in the individual.

Autonomy versus Shame and Doubt is the second of Erikson's stages and occurs between the approximate ages of

one to three years. At this stage the child begins to develop a sense of what is expected of him or her. Development of self-control is the skill which becomes a metaphor for the child's increasing independence and self-sufficiency. Gradually, the child develops a sense of will which constitutes the ability to make choices, to exercise self-restraint, and to assert oneself. If the child is made to feel guilty or otherwise constrained in his or her efforts to establish independence, the child is likely to feel shameful or doubtful of their abilities to appropriately interact with the environment. If the child's autonomy is stifled, he or she is likely to develop a pattern of rigidly following rules; rules often established by others.

The third stage, Initiative versus Guilt, extends from about three years to five and a half years of age. At this stage, the child utilizes the autonomy gained in the previous stage and begins to initiate planned, goal directed actions on his or her own. At this age the child learns quickly and easily, and utilizes play to learn new roles. Often these roles are imitations of parents which provide the child with an understanding of others, helping to

develop his or her personality. If the child finds his or her actions to be unsuccessful and unrewarding, then he or she is likely to develop guilt and self-doubt. Furthermore, he or she may fail to develop the adequate structure for a personality and may continue to adopt roles or act in such a way that is not representative of his or her own personality.

Issues of competence and failure comprise the key conflict in the Industry versus Inferiority stage. This stage extends from roughly five and a half years to twelve years of age. During this stage the child transitions from the work of play and make-believe to a focus on formal education, including academics, assuming responsibility, the arts, and sports. The child learns to perfect and master skills in these areas. The child must learn to feel competent when interacting with others, especially in competing with peers. Erikson defined competence as "...the free exercise of dexterity and intelligence in the completions of tasks, unimpaired by infantile inferiority" (1964, p. 124). If the child is unable to compete or feels inadequate in comparison to peers, inferiority is likely to develop, including a regression in the ego.

Adolescence ushers in the stage of Identity versus Role Confusion. At this stage, the adolescent is faced with the conflict of developing a sense of identity, especially in selecting a future career. The adolescent becomes aware of the differences in persons, their likes, dislikes, and goals. The adolescent is faced with the challenge of integrating their past with the vast possibilities for their own lives which they have learned from observing others. The overwhelming nature of this challenge is likely to leave the adolescent feeling anxious, isolated, and indecisive. Furthermore, the adolescent may feel that society is pushing him or her to make decisions and he or she may become more resistant. He or she is deeply concerned with how others view him or her during this phase. The adolescent is likely to be unpredictable and may often regress into the safety of a childlike state rather than confront the complex tasks which lie ahead. Failure to develop an identity, in particular regarding a personal vocation, leaves the individual confused as to his or her identity; or worse the development of a negative identity. A negative identity is that of possessing bad or unworthy characteristics as determined by society.

In stage five, the adolescent develops a sense of fidelity. Erikson defined fidelity as "...the ability to sustain loyalties freely pledged in spite of the inevitable contradictions of value systems" (1964, p.125). Fidelity is the foundation upon which a stable identity is formed. Possessing fidelity the adolescent begins to fulfill a need to belong and identify with social groups (i.e. ethnic, religious, political, and philosophic groups). Erikson emphasized the importance of this stage because of the transition from childhood to adulthood. How the adolescent resolves this conflict is of great significance for the development of the adult personality.

As the adolescent transitions into adulthood he or she enters stage six, Intimacy versus Isolation, and remain in this stage throughout their early adult life. The young adult is faced with the task of forming monogamous intimate relationships with others that is vital for healthy development. These relationships are identified by the sharing of love between the partners. Failure to develop close relationships leads to isolation because one is unwilling to commit to a relationship. This failure to commit may also develop into elitism or the development of a

sense of superiority which permits the systematic exclusion of others.

The seventh stage extends through middle adulthood and was labeled Generativity versus Stagnation by Erikson. At this stage, the focus of life for the adult becomes production. This need to produce takes many forms, including the generation of ideas and products and the establishment of guidelines for future generations (i.e., the raising of one's children). At this stage, the individual develops care and concern for one's fellow man outside the intimate relationship. Those adults who do not have children must resolve this conflict through other means or relationships such as adoption, teaching, or another form of guidance for other generations. When generativity is weak or is blocked the individual experiences a sense of impoverishment or stagnation. Additional distortions of generativity are authoritarianism or the seizure of control which are polar to genuine care for one's fellow man.

The final stage parallels the final stage of life, later adulthood, and is termed Ego Integrity versus Despair. The primary conflict in this stage is finding meaning in one's life. At this stage in life, adults tend to review

their lives and look for a sense of accomplishment and success. A life that has been well spent, and therefore has meaning, will result in a sense of integrity and self-fulfillment. The individual is able to look back on their accomplishments and develop a sense of wisdom and knowledge of life and its challenges. If the individual is unable to identify his or her accomplishments in life, his or her life ends in a sense of despair and unhappiness for not having maximized his or her potential; because at this point it is too late to attempt an alternative lifestyle.

While Erikson delineated several stages in his theory, he was hesitant to provide exact age periods for these stages. His opinion was that each person moves through these stages at varying ages and at differing rates. This is not to say, however, that the age groupings provided above are inaccurate, rather they are age brackets based on the average population. Lastly, it is important to note that Erikson supported the epigenetic principle which states that as the individual moves through these stages and resolves each conflict, this experience is added to all prior experiences which forms the personality.

Marcia (1966) developed an assessment instrument congruent with Erikson's theory of identity development. Marcia utilized an interview format based on incomplete sentence stems. Through the use of this interview, the structure of the respondent's identity status was inferred. Marcia delineated four statuses within Erikson's theory of identity development in adolescence. They are presented as follows in order of increasing development.

The first stage is termed Diffusion and is defined as the absence of either crisis or commitment to an identity and the failure to engage in the questioning and searching process which leads to the development of an identity. The second stage is Foreclosure and involves commitment to an identity which is achieved without a period of crisis or exploration. This commitment is often premature and is an acceptance of others' values and advice without question. Moratorium, the third stage, is identified when an individual is actively in a state of crisis and exploration of alternatives but has not formalized commitment to an identity. The last stage, Identity Achievement, is identified when a self-defined commitment has evolved out of an experience of crisis and exploration.

Marcia's interview taps into the ideological domains of occupation, religion, and politics in these stages. Growing evidence provides support for the belief that identity formation is a developmental process and essentially parallels the descriptions above (Marcia, 1976; Waterman, Geary, & Waterman, 1974; Waterman and Goldman, 1976, Waterman & Waterman, 1971). However, the interview format of this instrument is time consuming and possesses questionable interrater reliability due in large part to the demand for rater inference in the coding of the responses (Grotevant & Adams, 1983).

The Extended Objective Measure of Ego Identity Status

Adams, Shea, and Fitch (1979) created the Objective Measure of Ego Identity Status (OMEIS) in response to the need for an easily administered and scored objective instrument to assess ideological and interpersonal concerns inherent to Erikson's theory. This instrument assessed the areas of ideological development similar to that of Marcia's interview but provided an overall identity score as well.

In 1982, Grotevant, Thorbecke, and Meyer developed an extension of Marcia's interview which tapped into the interpersonal domain, including aspects of friendship,

dating, and sex roles in the individual's life. This instrument, however, still utilized the interview format. Grotevant and Adams (1983) developed the Extended Objective Measure of Ego Identity Status (EOM-EIS) to address the need for an instrument which assessed identity status in a greater depth than the OMEIS. This instrument was adapted from the interview format by Grotevant, Thorbecke, and Meyer (1982) but incorporated the objective measurement provided by the OMEIS. The EOM-EIS assessed the interpersonal domains of friendship, dating, sex roles, and recreation in addition to the original ideological domains of occupation, politics, religion, and philosophic lifestyle. Conceptually, the four identity stages measured by the EOM-EIS represent a dichotomy of two components, crisis and commitment. The manner in which these two components are present in the adolescent produce the adolescent's identity development. Grotevant and Adams (1983) report acceptable levels of internal consistency, test-retest stability, and content, construct, discriminant, and concurrent validity for the EOM-EIS. In 1986, Bennion and Adams revised the EOM-EIS (EOM-EIS-2) to provide improved interpersonal identity subscale items. Adams, Bennion, and Huh (1989)

report significant reliability and validity data for this version of the EOM-EIS.

Jones and Streitmatter (1987) state, "the EOM-EIS has been determined to be an appropriate measure of Erikson's theoretical framework" (p. 658) based on their review of the literature. Longitudinal research with the EOM-EIS confirms this statement, finding that individuals mature along the stages as delineated above (Adams et al., 1982) and that males tend to score significantly higher on the Diffusion Scales indicating lower levels of maturity (Adams & Fitch, 1982).

In their exploration of the reliability and validity of the EOM-EIS, Jones and Streitmatter (1987) found the instrument to be reliable and valid with junior high and high school students. They state that

> the EOM-EIS has been determined to be an appropriate measurement tool for assessing identity development according to Erikson's theoretical framework... for early/middle adolescents. (Jones & Streitmatter, 1987, p. 658).

Furthermore, they found that females mature at an earlier age as measured by the EOM-EIS.

Summary of Developmental Theories

Table 2 displays the developmental theories described previously, providing a cross-theory comparison of development.

Insert Table 2 about here

While the stages of these theories are presented in chronological format by expected age, these theorists were hesitant to identify specific age groupings for the manifestation of stage traits. For the present study, those stages listed under the age grouping of adolescence are of particular interest. This age bracket of 13 to 18 years of age includes Piaget's stages of Concrete Operations and Formal Operations, Loevinger's stages of Conformist, Conscientious-Conformist, and Conscientious, Kohlberg's Good Child, Law and Order, and Social Contract stages, and Erikson's stages of Industry versus Inferiority, Identity versus Role Confusion, and Intimacy versus Isolation. The developmental tasks which occur in adolescence are most likely to contribute to the child's manifestation of

psychological problems and, thus, influence his or her responding on psychological instruments.

Although the instruments to measure these theories appear to measure a similar construct, i.e., maturity, limited research has been conducted comparing these instruments. Researchers have indicated only modest correlations of .4 to .6 (Lambert, 1972; Liberman, Gaa, & Frankiewicz, 1983; Sullivan, McCullough, & Stagerm, 1970) between the WUSCT and the DIT despite the apparent similarities between the various stages. A review of the literature by the author revealed no comparison studies between the EOM-EIS-2 and the WUSCT or the DIT.

These instruments are generally designed to assess ego development using a life span approach and are targeted at a broad spectrum of ages from children to adults. A review of the literature, however, revealed no ego development instrument targeted specifically for the adolescent population. The fact that many of the instruments were designed to complement the existing theories of ego development accounts, in some part, for this oversight. This method of test development is questionable due to the lack of empiricism in the theories themselves. For example,

many of the theories of ego development posit that certain developmental advances occur in specific age brackets and that each stage builds upon another. Such suppositions are questionable in an adolescent population given the dramatic fluctuation in maturation among individual adolescents (Archer, 1987). Individuals can regress, or be delayed, in reaching a developmental milestone (Gfellner, 1986b). Furthermore, Newcomb and Bentler (1988) contend that the adolescent may exhibit "pseudo maturity" in which maturational stages are "skipped" over and maturation is accomplished too quickly. This pattern leads to significant failures in adaptation to adult roles.

The effect of level of maturity on psychological test responding has been a consistent issue in the development of many psychometric instruments and has necessitated the development of multiple norms for child and adolescent age groupings. For example, the Wechsler Scales (Wechsler, 1974, 1981, & 1991) and the Rorschach (Exner, 1990) provide multiple norms for various child and adolescent age groups. The effect of level of maturity on responding has also been a specific concern in the development of the Minnesota Multiphasic Personality Inventory (MMPI; Hathaway &

McKinley, 1967), beginning with the development of adolescent norms stratified by age subgroupings (Marks, Seeman, & Haller, 1974) up to the current development of the adolescent form of the MMPI, the MMPI-A (Butcher, Williams, Graham, Archer, Tellegen, Ben-Porath, & Kammer, 1992).

The Minnesota Multiphasic Personality Inventory - Adolescent

The growing popularity of the MMPI for use with adolescents was the impetus for the development of the adolescent form of the MMPI. In fact, Archer et al. (1991) found that the MMPI is the most frequently used objective personality assessment instrument with adolescent populations. Based on a review of the available literature and research data, the MMPI Adolescent Project Committee recommended that a separate form of the instrument be published with separate adolescent norms. This committee also recommended that the MMPI Clinical Scales remain because of their value in assessing adolescent psychopathology. Limitations in the use of the original MMPI with adolescent populations were determined to exist in the areas of item content (i.e., objectionable, archaic, and awkwardly worded items; some items written from an adult perspective), lack of scales which relate specifically to

adolescent and adolescent pathology, the tendency for extreme responding by adolescents on the MMPI, resulting in an unusually high F Scale score, and the confusion regarding adolescent norms and their use with the MMPI (Butcher et al., 1992).

The MMPI-A was developed from an experimental form (TX) which consisted of 704 items. These 704 items included 550 original MMPI items with 82 revised items which eliminated awkward wording, outdated expressions and sexually biased language. Fifty-eight new items were also included which related to amenability toward change, substance use, eating disorders, and suicide. Additionally, ninety-six "...new items were developed to assess problems, behaviors, and attitudes of adolescents in areas related to identity formation, negative peer-group influence, attitudes toward school and teachers, relationships with parents and families, and sexuality (Butcher et al., 1992). Keeping in mind the issue of length, the MMPI-A development committee attempted to reduce the overall number of items on the instrument while preserving its validity for adolescent populations. The committee reduced the overall length of the instrument from the 704 item Tx form to 478 items.

Twenty of these items were reworded from the adult perspective to an adolescent perspective and were found to have similar or improved psychometric properties over the original wording of the item (Williams, Ben-Porath, & Heveren, 1991). Furthermore, raw scores of Clinical and Content Scales were standardized through the use of Uniform T-scores developed by Auke Tellegen. A description of the Uniform T-score is beyond the scope of this study; for more information on the Uniform T-score refer to Tellegen and Ben-Porath (1992).

The MMPI-A was then normed on a sample of 805 boys and 815 girls between the ages of 13 and 18. The sample was balanced across the variables of geographic region, rural-urban residence, and ethnic background. Additionally the MMPI-A was normed on a clinical sample of 420 boys and 293 girls aged 14 to 18 years of age. The majority of this sample was attending inpatient or partial (day) treatment at the time of testing.

The Immaturity (IMM) Scale

Archer (1987), in his overview of adolescent development, speculated that elevations on adolescent MMPI profiles may be due to maturational as well as

psychopathological processes. Preliminary research conducted with the MMPI and the WUSCT supports that assumption (Archer, Pancoast, & Gordon, 1994). Researchers have demonstrated that psychological maturation may covary with age (Redmore et al., 1979; Coor, 1970; Hoppe, 1972) and the gender of the participant. Females tend to produce higher psychological maturational scores (Redmore et al., 1979; Adams and Fitch, 1982; Hauser et al., 1983). Furthermore, these researchers found that MMPI elevations also tended to co-vary with psychological maturational level as measured by the WUSCT when the effects of reading level, socioeconomic status, race, and age are controlled. These findings underscore the importance of psychological maturation in adolescents' responses to the MMPI and reinforce the need for a scale related to psychological maturation for the MMPI-A.

Based on the above research and observations of differences between adolescents and adults in MMPI response patterns (particularly MMPI Scales F, 4, 6, 8, and 9), Archer, Pancoast, and Gordon (1994) developed the IMM Scale for the MMPI-A, hypothesizing that the psychological

maturational level of the adolescent is more likely to influence MMPI responding than chronological age.

The IMM Scale of the MMPI-A was developed by examining the relationship between individual items on the 704-item MMPI, Form TX, and the WUSCT in a sample of 202 normal adolescents ranging in age from 12 to 17. MMPI items were retained if they demonstrated significant relation to WUSCT scores. This produced 101 items which were submitted to six independent research assistants, trained in the scoring of WUSCT items using Loevinger et al. (1970) criteria. The raters were directed to evaluate each item in terms of its relationship to ego maturation as developed by Loevinger (1976). An item was retained if four of the six raters were in agreement that the item content was representative of psychological maturation development. This step reduced the scale to 49 items. Next, IMM Scale items were eliminated if the removal of an item increased the scale's alpha coefficient value in the sample of 222 normal adolescents or 122 clinical adolescents. Additionally, the normal and clinical samples were utilized to evaluate the relationship between each of the tentative IMM Scale items and their correlations with the 704 items of the MMPI-A (Form TX).

New items were added or old items deleted based on the item's statistical and conceptual relationship to the immaturity construct. These latter procedures resulted in the elimination of six items for a total of forty-three items. Statistical criteria were then used to evaluate the item total correlations and the effect of scale alpha coefficient values for each IMM Scale item and all 704 Form TX items were then reevaluated for correlation with the IMM scale, using a criteria of $r \geq .20$, to determine if any additional MMPI items should be included in the IMM Scale. This procedure produced two additional items for a total of 43 items. Appendix A provides the IMM Scale item numbers, item content, and item membership in other scales. The IMM scale is included in the Content and Supplementary Scales profile form of the MMPI-A. Archer (1992) further states that adolescents who score high on the IMM scale are likely to be impulsive with limited capacity for self awareness. Furthermore, they are likely to be egocentric with poor interpersonal relations and have cognitive processes which are concrete and simplistic.

The IMM Scale as a Moderator Variable

Given the ability of the IMM Scale to differentiate between levels of maturity of development, it could be hypothesized that the scale could be used as a variable in the interpretation of the overall adolescent profile in much the same manner as the K Scale is utilized in the interpretation of the MMPI with adult populations. As Archer et al. stated, "..it may be possible that the Immaturity Scale might serve to modify interpretation of an elevated profile in terms of determining the degree to which elevated scores are related to actual pathology" (1990, p. 10).

The predecessor to the K Scale was Meehl's (1945) N Scale. The N Scale was developed based on the premise that all individuals possess a certain degree of pathology. Meehl stated his hypothesis as the following:

> Is there a fairly stable trait (variable, characteristic) of persons, with regard to which there exist wide individual differences, that is relatively uncorrelated with abnormal components of personality but which, if present, lessens the likelihood that a large amount of some abnormal component will result in psychiatric breakdown? If there is how can it be measured? (1945, p.3)

It was Meehl's notion that some individuals possess a factor or personality characteristic which permits them to better

control their pathology than others. Meehl attempted to devise a measure that would assess an individual's ability to moderate or control their pathology hoping that it would provide a means of reducing errors in prediction and classification in psychometric instruments such as the MMPI.

Meehl's ideas are largely based on Rosanoff's (1938) theory which presented the idea of a four factor temperament, the last being a normalizing, inhibiting or controlling factor of the personality. The Humm-Wadsworth Scales (Humm & Wadsworth, 1935) first incorporated this theory into their development of a personality instrument. Essentially this scale measured the respondents' failure to report any psychiatric disturbance or to "fake good" on the instrument. Humm and Wadsworth failed to provide a statistically derived cut-off score based on a normal sample, therefore the validity and usefulness of this scale was somewhat obscured. However, Meehl (1945) stated that many of the items on the Humm-Wadsworth Normal Scale are found, in slightly altered form, on the MMPI and are responded to in the normal direction on the Humm-Wadsworth Scale by eighty-eight percent of a normal sample.

Meehl hoped that the N Scale would permit the distinction between those individuals who produced elevated profiles but remained clinically "normal" (i.e., remain out of treatment and/or treatment facilities) and those with elevated profiles who entered treatment of one form or another. Such a scale would permit a more refined interpretation of the MMPI and reduce the number of false positives produced by the instrument. Meehl was only partially successful in this endeavor, finding that the N Scale was valid for the neurotic triad (MMPI scales 1, 2, and 3). Although statistically supported, the scale was not clinically useful with the remaining basic scales. Even within the neurotic triad, Meehl (1945) found "..only a slight tendency (none for one sex) for it [the N Scale] to discriminate between normals generally and abnormals, when the rest of the MMPI profile does not enter into consideration" (p. 51).

Meehl and Hathaway (1975) state that the N scale was not formally adopted due to its length and loading with genuine psychiatric factors which led to an under-interpretation of profiles belonging to abnormal participants. While Meehl's N Scale was never formally

adopted into the MMPI scales, the concept of a moderator variable was incorporated into the instrument. Wiggins (1973) defined a moderator variable as the relationship between two variables, X and Y, modified by concurrent status of a third variable, which is referred to as a moderator variable. The N Scale was eventually superseded by the K scale in the development of the MMPI. The K Scale can be conceptualized as the inverse of the N Scale because it is a measure of defensiveness which reflects an effort by a psychologically disturbed individual to produce an MMPI report similar to that of a normal or non-disturbed respondent (i.e., a conscious or unconscious effort to fake-good). The function of the K Scale, therefore, is to improve the discrimination of psychopathology of selected clinical scales by "correcting" for fake-good responses, thereby reducing the number of false-negative classifications produced by the instrument.

The IMM Scale may function in much the same manner as the N Scale. Maturity may effect the adolescent's ability to accurately respond to the MMPI-A items. Therefore, an adolescent's responses which produce a clinical scale elevation may reflect his or her maturity level rather than

his or her degree of psychopathology as measured by the scale. If the IMM Scale can effectively delineate between adolescents who respond spuriously high from those adolescents who are producing validly elevated profiles then a more refined interpretation of the MMPI-A would be possible, reducing the number of false-positives. Erikson's (1963) theory asserts that a failure to reach psychological maturation as expected is the basis of psychopathology. As with defensiveness as measured by the K Scale, some degree of immaturity is normal but an extremely elevated score is indicative of psychopathology. Substantial research is required to validate the application of the IMM Scale in this manner.

Statement of the Problem and Hypotheses

The purpose of this study was to examine the construct validity of the IMM Scale in relation to established scales of development, including the Wechsler Scales, WUSCT, the DIT, and the EOM-EIS-2. Based on the conceptual definitions of cognitive development (Piaget, 1966), ego maturation (Loevinger, 1976), moral development (Kohlberg, 1975), identity maturation (Erikson, 1963), and the IMM Scale (Archer et al., 1994), it was expected that the Wechsler

Scales, WUSCT, DIT, EOM-EIS and IMM Scale would be negatively correlated. Differences in age (older participants scoring as more mature) and gender (girls scoring as more mature than boys) were expected given the previous research with these instruments. The following hypotheses are offered for this study:

Hypothesis 1: Scores on the IMM Scale were predicted to be negatively correlated with scores on the WAIS-R, WISC-R, and the WISC-III. This hypothesis centers on the definition of higher scores on the IMM Scale as indicative of Preconformist traits such as poor impulse control, less capacity for psychological sophistication and insight, lower ability to engage in reciprocal and mutually satisfying interpersonal relationships, and less use of cognitive processes (Archer, Pancoast, & Gordon, 1994). Lower scores on the IMM Scale were predicted to be indicative of Postconformist traits such as increased self-awareness and psychological sophistication, greater use of cognitive processes and rationalization, and greater autonomy and acceptance of individual differences.

Hypothesis 2: Scores on the WUSCT were predicted to be negatively correlated with scores on the IMM Scale. This

hypothesis is based on previous work by Archer et al. (1994) in a comparison study of the IMM Scale and the WUSCT. Higher scores on the WUSCT should indicate traits associated with the Preconformist (i.e., the ability to verbally express feelings but in terms of cliches, stereotypes and moral judgements) and Postconformist (i.e., the ability to cope with conflict through self-perception, demonstrate cognitive complexity, and interpersonal styles which emphasize mutuality, autonomy, empathy, and acceptance of individual differences) stages. These individuals were predicted to score in the moderate to low range on the IMM Scale as these are traits indicative of a more mature individual.

Hypothesis 3: It was hypothesized that the IMM Scale would correlate moderately and in a negative direction with the DIT, based on the moderate correlations reported between the DIT and the WUSCT (Gfellner, 1986a). This hypothesis is based on the view that lower scores on the IMM scale should be related to Principled Level thinking such as following one's personal abstract values which are formulated with a recognition of the benefits to all individuals regardless of the law. High scores on the IMM Scale, in contrast, were

predicted to be associated with the Premoral Level of thinking as evidenced by thinking designed to avoid punishment or, at best, designed to be fair, in the sense of reciprocity.

Hypothesis 4: It was hypothesized that negative correlations would be found between the EOM-EIS-2 and the IMM Scale. This prediction is based on the observation that low scores on the IMM Scale should be related to the Achievement Stage which is evidenced by the commitment to an identity following a period of crisis and exploration. Further, high scores on the IMM Scale were predicted to correlate with the Diffusion Stage of the EOM-EIS as evidenced by the absence of either crisis or exploration regarding an identity.

In addition to the formal hypotheses stated above, two exploratory issues will be examined in this study. First, the correlational analysis with the instruments utilized in this study should provide sufficient information to derive a set of descriptors for varying response patterns on the IMM Scale. It was predicted that high scores on the IMM Scale would correlate with scores on the Weschler Scales, WUSCT, DIT, EOM-EIS-2, and the Devereux Adolescent Behavior Rating

Scale (DABRS) which would describe the respondent as having difficulty grasping abstract concepts, poor social relationships, low frustration tolerance, and a history of academic and social difficulties. Further, it was predicted that adolescents scoring high on the IMM Scale would be described as egocentric, impulsive, impatient, and untrustworthy. Low scores on the IMM Scale were predicted to correlate with the above instruments in a manner which suggests the ability to grasp and apply abstract concepts, an understanding of social structure, psychological insight and understanding of self. Further, low scores in the IMM Scale were predicted to correlate with descriptors associated with maturity including an ability to delay gratification, responsibility, independence, and improved emotional control.

The second experimental hypothesis predicted that the use of an IMM Scale correction factor to the Clinical Scales of the MMPI-A would improve group discrimination of normal versus abnormal adolescents. This hypothesis was tested by the comparison of profiles from the clinical setting in this study with profiles from the MMPI-A normative sample.

CHAPTER II

METHOD

Participants

Sixty-six inpatient adolescents, 27 girls and 39 boys, 13 to 18 years of age, inclusive, participated in this study. The mean age for boys was 15.59 (*SD* = 1.41) and the mean age for girls was 15.33 (*SD* = 1.14). These participants were recruited from inpatient facilities at the treatment programs of the James Barry Robinson Center in Norfolk, Virginia and The Pines Treatment Center in Portsmouth, Virginia. Participants were recruited on a volunteer basis and received no reimbursement for their participation.

Instruments

Appendix B provides a brief summary of the instruments described in this section and may facilitate the recognition of abbreviations used in the discussion section.

The Minnesota Multiphasic Personality Inventory - Adolescent (MMPI-A). The MMPI-A is a 478 item revision of the original MMPI designed specifically for adolescents. The instrument retains the format of the original MMPI in that it requires the participant to respond "True" or

"False" to a number of statements. The Basic Clinical and Validity Scales have been retained in the instrument with the addition of a number of new validity scales including Variable Response Inconsistency (VRIN) and True Response Inconsistency (TRIN) and the F_1 and F_2 subscales which constitute the first and latter halves of the F Scale, respectively. A number of content and supplemental scales have been added which were specifically designed for adolescent populations. These areas include substance abuse, school problems, familial conflict, eating disorders, and maturity.

The Immaturity Scale (IMM). The IMM Scale is a 43-item scale developed for the MMPI-A by Archer et al. (1994) using Loevinger's (1976) conceptualization of ego development. The IMM Scale was designed to assess issues related to psychological maturation during adolescence. The items in the IMM Scale are related to psychological maturation and cover such content areas as self-confidence, externalization of blame, insight and introspection, interpersonal and social discomfort and alienation, a present centered orientation as opposed to a future orientation, hostile or antisocial attitudes, and egocentricity (Archer, 1992).

Butcher et al. (1992) report that the IMM Scale is negatively correlated (r = -.53) with the WUSCT, suggesting construct validity for the IMM Scale. Reliability is supported by one week test-retest correlations of .83 for a sample of 86 adolescent females and .75 for a sample of adolescent 63 males.

The Wechsler Scales: The Wechsler Adult Intelligence Scale - Revised (WAIS-R), The Wechsler Intelligence Scale for Children - Revised (WISC-R), and The Wechsler Intelligence Scale for Children - Third Revision (WISC-III). The Wechsler Scales consist of a number of subtests designed to measure verbal and performance abilities. The majority of the verbal subtests utilize a question and answer format while the performance subtests utilize different types of physical performance tasks, i.e., construction of patterns with blocks or completion of puzzles. The subtests which comprise the verbal subtests and VIQ are Information, Digit Span (not calculated into the WISC-R and WISC-III VIQ), Vocabulary, Arithmetic, Comprehension, and Similarities. The subtests which compose the performance subtests and PIQ are Picture Completion, Picture Arrangement, Block Design, Object Assembly, and Digit Symbol (labeled Coding in the

WISC-R and WISC-III). Both the VIQ and The PIQ factor into the FSIQ.

Using the split-half method, Weschler (1991) reports WISC-III reliablities of .95, .91, and .96 for the Verbal IQ, Performance IQ, and Full Scale IQ, respectively. Using the test-retest method, Weschler (1991) reports WISC-III reliablities of .94, .87, and .94 for the Verbal IQ, Performance IQ, and Full Scale IQ, respectively. Weschler (1974) reports reliability findings for the WISC-R of .94 for Verbal IQ, .90 for Performance IQ, and .96 for the Full Scale IQ using the split-half method. Using the test-retest method, Weschler (1974) reports coefficients of .93, .90, and .95 for the Verbal, Performance, and Full Scale IQs, respectively. For the WAIS-R, Weschler (1981) reports split-half correlations of .97 for the Verbal IQ, .93 for the Performance IQ, and .97 for the Full Scale IQ. Test-retest research conducted by Weschler (1981) revealed WAIS-R correlations as follows: Verbal IQ, .94 for ages 25-34 and .97 for ages 45-54; Performance IQ, .89 for ages 25-34 and .90 for ages 45-54; and Full Scale IQ, .95 for ages 25-34 and .96 for ages 45-54.

Weschler utilized concurrent administrations of the WISC-III, WISC-R, WAIS-R, and other instruments to demonstrate the validity of his instruments. Weschler (1991) reported correlations between the WISC-III and the WISC-R are as follows: Verbal IQ, .90; Performance IQ, .81; and Full Scale IQ, .89. Correlations between the WISC-III and the WAIS-R are reported by Weschler (1991) as follows: Verbal IQ, .90; Performance IQ, .80; and Full Scale IQ, .86. Weschler (1981) reports correlations between the WISC-R and the WAIS-R as follows: Verbal IQ, .89; Performance IQ., .76; and Full Scale IQ, .88. Sattler (1988) reported correlations between the WISC-R and the Stanford Binet Form L-M as follows: Verbal IQ, .75; Performance IQ., .68; and Full Scale IQ, .82.

The Washington University Sentence Completion Test (WUSCT). The WUSCT consists of 36 incomplete sentence stems that vary slightly for males and females. Holt (1980) developed a 12 item short form of the WUSCT. The protocols were scored using ogive distribution rules developed by Picano (1987) for Holt's short form to classify the responses on the following levels of ego development: Preconformist (I-2, Delta, Delta/3), Conformist (I-3), and

Postconformist (I-3/4, I-4, I-4/5, I-5, and I-6). The participant receives a Total Protocol Rating (TPR) which his or her modal response across all 12 items.

Loevinger et al. (1970) reported interrater findings in the range of .78 to .93 for raters personally trained by Loevinger and reliability findings of .91. Sutton and Swensen (1983) report concurrent validity findings between the WUSCT and the Thematic Apperception Test (TAT; Murray, 1943) of .79, and between the WUSCT and unstructured interview of .81. Holt (1980) reported reliability findings of .77 for females participants and .76 for male participants in his sample which is comparable to the reliability results of Loevinger et al. (1970). Loevinger (1979) cited numerous studies which sought to validate the WUSCT through the use of correlations with interviews, objective techniques, projective techniques, and behavioral measures. She cited correlations ranging from .22 to .61. Loevinger acknowledged difficulties with validating the WUSCT stating that the instrument "...is adequately validated for research use... [and that the]...construct of ego development has a good deal of support from the data..." (p.308).

The Defining Issues Test (DIT). The DIT is a standardized, objective, paper and pencil instrument which requires the participant to read six passages that describe different moral dilemmas. The participant then responds to twelve issues regarding the implications of the situation, rating each of these issues on a five point scale. Lastly, the participant decides which four of the twelve issues are the most relevant to solving the dilemma.

The P score is used as a more accurate measure of moral development as it is a sum of the scores from Stages 5A, 5B, and 6 converted to a percent. The P score is interpreted as the relative importance that participants attribute to stage five and six items. It is calculated by summing the number of times Stage 5 and 6 items are chosen as the first, second, third, or fourth most important consideration. They are weighted by ranks of four, three, two, and one respectively. "The P score is the number generally reported in DIT research, and upon which most analyses are based" (Rest, 1979b, p.5). When discussing DIT results the P score is usually the score under consideration unless otherwise specified.

The remaining scores are reported less frequently in the DIT research and are defined as follows: The A score represents an antiestablishment attitude. The antiestablishment attitude "...presuppose[s] an understanding of Stage 4, but fault existing authorities and 'the establishment' for being hypocritical and inconsistent" (Rest, 1990, p.12). This moral perspective is critical of society without offering anything to replace the criticized organization beyond the 'every man for himself' attitude. The M score is an internal reliability check to determine if the participant was answering the test directions consistently. The M scale consists of a number of meaningless, yet complex sounding, items which are interspersed throughout the DIT. If too many of these items receive a high ranking by a participant, the interpreter can infer that the participant was not attending to the meaning of the item and, therefore, the test instrument as a whole. This check is done on an individual basis; if the participant does not pass the check, or has too much missing data, that participant's data are disregarded from further consideration. The D score, developed by Davison (1977), is a composite score similar to the P score. Rest (1979a)

states, however, that the D scores is not as accurate a predictor of moral reasoning as the P score. The U score is the Utilizer score studied by Thoma (1985). This score reflects the degree to which a participant uses concepts of justice in making moral judgments as opposed to other methods such as religious doctrine. The U score is derived from the action choices and the ranking of the most important items by the participant on the DIT.

Rest (1990) reports the reliability findings for the DIT in the "high .70s or .80s" (p. 25). Rest (1990) reports convergent-divergent validity findings using various forms of Kohlberg's test and the Comprehension of Moral Concepts test in the r = ".60s and .70s, averaging about .50" (p. 28) range. With measures of cognitive development and intelligence, Rest (1990) reports correlations "in the .20s to .50s range, averaging .36" (p. 28).

The Extended Objective Measure of Ego Identity Status - Second Revision (EOM-EIS-2). The EOM-EIS-2 is a 64-item instrument designed to measure ego identity with regard to occupational, religious, political, philosophical, and social contexts on two dimensions: ideological and interpersonal. The data were scored on the dimensions of

Identity Achievement, Moratorium, Foreclosure, and Diffusion producing a Total Pure Stage Score (TPSS).

Bennion and Adams (1986) report reliability coefficients of .62 to .75 on the ideological subscales and .58 to .80 of the interpersonal subscales. Bennion (1988) reported concurrent validity findings between the EOM-EIS-2 and semistructured interviews to be .44 for the ideological domains, .69 for the interpersonal domains, and .56 overall.

The Ohio Literacy Test (OLT). The Ohio Literacy Test (Foster & Goddard, 1924) is a 33 item paper and pencil measure composed of factual questions which require the respondent to answer "yes" or "no" and was administered to assess comprehension of items on the other instruments. Theoretically, responses rely very little on individual opinion, judgement, or experience. Examples of items include the following: "Do cats bark?" (grade level 1); "Is the president a public official?" (grade level 8); and "Does an emergency require an immediate decision?" (grade level 14). The test yields two measures of reading comprehension, the total number correct and grade level.

Two studies provide concurrent validity for the OLT. Strong (1959) obtained the following correlations between

the OLT and the Wechsler Bellevue I: Verbal IQ, .69; Performance IQ, .49, and the Full Scale IQ, .63. Further, Hart, Norman, and Sergent (1979) reported the following correlations between the OLT and the Wechsler Adult Intelligence Scale (WAIS): Verbal IQ .77, Performance IQ, .67, and Full Scale IQ .77.

Devereux Adolescent Behavior Rating Scale (DABRS). The DABRS (Spivack, Spotts and Haimes, 1967) is an 84 item paper and pencil instrument to be completed by a parent, clinician, or direct care staff member of the adolescent. The instrument requires the rater to respond to a number of descriptive statements on a five point scale for 57 items related to the adolescent's exhibition of specific behaviors. Additionally, the respondent utilizes an eight point scale to respond to 27 items related to the degree of exhibition of specific behaviors. The items are then scored on 12 behavior factors which are titled Unethical Behavior, Defiant-Resistive, Domineering-Sadistic, Heterosexual Interest, Hyperactive Expansive, Poor Emotional Control, Needs Approval and Dependency, Emotional Distance, Physical Inferiority-Timidity, Schizoid Withdrawal, Bizarre Speech and Cognition, Bizarre Action, and three rational clusters

including Inability to Delay, Paranoid Thinking, and Anxious Self-Blame. The DABRS is included in this study to provide behavioral descriptors which correlate to high and low score on the IMM Scale.

Spivack et al. (1967) reported test-retest reliability, citing a median correlation of .82. Further, they report a median interrater reliability correlation of .42, and a median coefficient of agreement of .806.

Demographics

Demographic information from each individual will be obtained through the use of a self-report questionnaire (see Appendix C). Information was requested in the following areas: age, ethnic background, religious preferences, school performance (academic and behavioral), career aspirations, familial configuration, and significant medical issues. Further demographic information including presenting problems, diagnosis, and current medications was obtained from the participant's clinical record.

Procedure

Participant recruitment. Participants were recruited at two residential treatment centers in Norfolk and Portsmouth, Virginia: the treatment programs of the Barry

Robinson Center and the Phoenix and Behavioral Studies Programs at the Pines Residential Treatment Center. The adolescents were approached by the principle investigator in group format, provided a description of the study, and were requested to volunteer. Volunteer participants, their legal guardians, parents, and agencies funding their placement at the institution were provided a cover letter and a consent form which included a brief description of the study and information on participants rights (see Appendix D). Only those participants with consent from all of the individuals identified above were eligible to participate. Eighty-six participants were successfully recruited.

Administration of the instruments. Those participants with completed consent forms participated in a group administration of the biographical information form, OLT, WUSCT, DIT, EOM-EIS-2, and the MMPI-A. These groups ranged in size from two to fifteen. The participants were given packets that included the assessment instruments in the order identified above. The instructions for each instrument were administered, as per the corresponding administration instructions in each manual, prior to the participant beginning on the packet. Proctors for the

administration sessions were allowed to provide clarification to questions presented by the participants, unless such questions would interfere with the reliability of the instrument (i.e., OLT or DIT).

Information relating to the participant's intelligence scores (using the Weschler Scales) including the FSIQ, VIQ, PIQ, and the subscale scores, number of previous hospitalizations, presenting problems, diagnosis, and medications was obtained from clinical records by the principle investigator at each testing site.

Scoring of instruments. The instruments were scored according to manual instructions. The MMPI-A, DIT, and EOM-EIS-2, were computer scored. The MMPI-A was scored via computer using the National Computer Systems Arion system. The DIT was returned to the Center for Ethical Development for scoring. The EOM-EIS-2 was scored using a scoring program cited in Adams et al. (1989) which was provided by Patricia Dyk (1987). The OLT was hand scored by the principle investigator using scoring criteria provided by Foster and Goddard (1924). The DABRS was also hand scored by the principle investigator according to manual instruction.

The WUSCT was independently scored by two raters, the principle investigator and a master's level assessment technician. The raters were trained according to manual instructions (Loevinger & Redmore, 1970) and completed practice scoring exercises provided in the manual. As a check of interrater reliability, the first 25 WUSCT protocols were rated and interrater reliability correlations conducted. The raters achieved an initial 80% agreement and the remaining protocols were completed, and an interrater reliability of 81% was obtained. These results are consistent with Loevinger's (1970) reports of interrater reliability. On those answers involving a discrepancy, the raters met to review the scoring examples and resolve the discrepancy. If, after this procedure, the raters still disagreed, a mean stage score was selected. For the entire sample, the principle investigator scored the Total Protocol Rating (TPR) using the ogive distribution rules provided by Picano (1987).

Exclusion criteria. Data on a total of 86 participants were obtained. Participants who produced missing data on any of the dependent measures were eliminated. This criterion eliminated 17 participants. Additionally, several

MMPI-A validity criterion were used for exclusion purposes in the current study. These criterion were as follows: L Scale T-score or K Scale T-score of ≥ 80; VRIN Scale or TRIN Scale T-score of ≥ 80; F Scale T-score value of ≥ 90. The use of these exclusion criterion resulted in the removal of three additional participants from the overall data set.

CHAPTER III

RESULTS

Preliminary Analyses

Preliminary data analyses were conducted to provide descriptive information concerning the nature of the sample and to examine the potential influence of confounding variables on IMM scores. Preliminary analyses indicated there were 27 girls and 39 boys included in the current sample. The mean age for boys in the sample was 15.59 years (SD = 1.41 years) and the mean age for girls was 15.33 years (SD = 1.14 years). The mean IQ for the sample was 90.71 (SD = 13.24). The mean reading grade level for the sample was 8.41 (SD = 1.08). The mean grade placement for the sample was 9.27 (SD = 1.28). The participants providing data in this study came from three settings that included Phoenix Program at the Pines Residential Treatment Facility (n = 26), the Behavioral Studies Program at the Pines Residential Treatment Facility (n = 31), and the residential treatment programs of the Barry Robinson Treatment Center (n = 9). The mean number of prior hospitalizations for the sample was 2.41 (SD = 2.30). The primary diagnoses assigned to the

adolescents in this study, grouped into broad diagnostic categories, were as follows: depression, including major depression and dysthymia, n = 19; sexual disorders, n = 12; various forms of conduct disorder, n = 18; and all other diagnoses, n = 17. The primary presenting problems for this sample were depression, n = 11; conduct problems, n = 30; sexual assault, n = 11; sexual/physical abuse, n = 16; and other, n = 8. The secondary presenting problems were as follows: depression, n = 10; conduct problems, n = 31; sexual assault, n = 2; sexual/physical abuse, n = 14; and other, n = 9.

For all analyses conducted in this study, IMM Scale scores were analyzed based on both raw score and T-score data. Findings were highly similar based on both approaches, and results in this study will be reported based on analyses conducted with IMM raw scores.

The mean IMM Scale raw score for this sample was 15.34 (SD = 6.35), and the mean IMM Scale T-score for the distribution was 54.10 (SD = 10.32). The IMM Scale distribution of scores was examined in order to identify the median score for the purpose of creating a median split of the IMM Scale score distribution. The median raw score

value for the IMM scale for this sample was 15, and the median T-score value for the sample was 56. Therefore, The 34 participants having values above a raw score of 15 (or a T-score of 56) were assigned to the high IMM Scale group and the 32 participants having raw scores of 15 or less (or T-scores of 56 or less) were assigned to low IMM Scale groups for purposes of subsequent parametric and non-parametric analyses. The mean T-score for the high IMM Scale group was 62.64 (SD = 5.13) and the mean T-score for the low IMM Scale group was 45.00 (SD = 5.43).

A number of preliminary analyses were conducted to evaluate the effects of potentially confounding variables on IMM Scale scores. An ANOVA was conducted to evaluate the degree to which IMM Scale mean raw score groups varied as a function of participant gender. The results of this analysis indicated no significant association between these variables, $F(1, 65) = .48$, $p > .05$. Further, there was no significant correlational relationship found between participant's age and IMM Scale raw score ($r = .10$, $p > .05$). However, a significant association was found between participants' mean IMM Scale raw scores and their ethnicity grouping as determined by an ANOVA, $F(2, 64) = 9.86$, $p <$

.001. Specifically, the mean IMM Scale raw score for Caucasian participants (n =36) was 12.78 (SD = .94), the mean IMM raw score for African-American respondents (n = 17) was 16.82 (SD = 1.36), and the mean raw score for respondents of other ethnic backgrounds (n = 13) was 20.54 (SD = 1.56). Least Significant Differences (LSD) Test identified significant differences on the IMM Scale between Caucasian and African-American participants ($p < .05$) and Caucasian and participants of other ethnic backgrounds ($p <$ .001. No significant differences were found between African-American participants and participants of other ethnic backgrounds ($p > .05$) on the IMM Scale. Further, an ANOVA evaluation of the differences in mean IMM Scale raw scores by each of the three settings indicated significant differences, $F (2, 64) = 4.15$, $p < .05$. Specifically, the mean IMM Scale raw score for the Phoenix program at the Pines Residential Treatment Center was 17.92 (SD = 1.19), the mean IMM Scale raw score for the Behavioral Studies Program at the Pines Residential Treatment Center was 14.06 (SD = 1.09), and the mean IMM Scale raw score for the residential treatment programs of the Barry Robinson Center was 12.34 (SD = 2.02). LSD tests revealed significant

differences on the IMM Scale between participants at The Phoenix Program and the Barry Robinson Center ($p < .05$) and the Phoenix Program and the Behavioral Studies Program ($p < .05$). No significant differences were identified on the IMM Scale between the respondents at the Barry Robinson Center and the Behavioral Studies Program ($p > .05$).

Univariate Analysis Results

IMM Scale raw scores were intercorrelated with scores from the Weschler Scales, the Ohio Literacy Test, WUSCT, DIT, and the EOM-EIS-2. Table 3 shows the intercorrelation values found for these measures, with the significance criterion (alpha level) adjusted to the .0017 level as a result of the application of the Bonferroni correction for the number of correlational tests conducted in these analyses.

Insert Table 3 about here

Figure 2 shows the mean IMM Scale T-score by WUSCT stage.

Insert Figure 2 about here

Figure 3 shows the mean IMM Scale T-score by EOM-EIS-2 Total Pure Stage.

Insert Figure 3 about here

Table 4 shows the intercorrelation between IMM Scale raw scores and each of the DABRS variables, with alpha level adjusted by the Bonferroni correction procedure for the number of tests conducted.

Insert Table 4 about here

In addition to the intercorrelational analyses noted above, a number of univariate ANCOVAs were conducted to evaluate the effects of placement in high versus low IMM groups on 22 dependent measures, with the effects of ethnicity and setting removed by covariance procedures. These measures included The FSIQ, VIQ and PIQ from the Weschler Scales; the reading grade level as determined by the OLT; the P score from the DIT; the Total Protocol Rating (TPR) from the WUSCT; the Total Pure Stage Score (TPSS) from the EOM-EIS-2; and 15 variables from the DABRS. Table 5 shows the results

of these ANCOVAs for high versus low IMM groups on the non-DABRS dependent variables utilized in this study.

Insert Table 5 about here

None of the DABRS variables produced significant relationships to the IMM grouping variable.

ANCOVA and/or Chi-square analyses were conducted to assess the relationship between the twelve biographical variables and participants' placement into high versus low IMM groups. One significant finding, X^2 (1, N = 66) = 5.05, $p < .05$ was identified indicating that participants scoring higher on IMM were more likely to have experienced a major illness within the past year. No other variables produced significant relationships to the IMM variable in those analyses. This single significant finding may have been the result of chance factors given the number of tests conducted (i.e. one significant finding derived from twelve tests).

Finally, a number of hit rate analyses were conducted to examine the possibility that the IMM Scale served as a moderator variable in terms of participants' placements in either a normal or a clinical sample. Hit rate analyses

examine the ability of a variable to accurately predict an individual's membership in two or more mutually exclusive groups. To evaluate the possibility that the IMM Scale could function as a moderator variable, 66 participants from the MMPI-A normative sample, selected to match the 66 clinical participants in gender and age, were included for a total sample of 132 participants in these analyses. Participants who produced MMPI-A Basic Scale T-score values below 65 (excluding scales 5 and 0) were classified as normal, and participants producing one or more Basic Clinical Scales with a T-score value equal to or greater than 65 were classified in the clinical sample. Using the aforementioned criterion, the total number of participants correctly classified were 89 of 132 participants or a total hit rate of 67 percent. Further, the sensitivity achieved in these analyses was .67, and the specificity was .68. Participants in the data sample were then reclassified based on criterion which predicted a participant was normal if all clinical scales were below 65, or if the IMM Scale was above 65. Participants with one or more elevated clinical scales and within normal limits IMM Scale T-scores ($T < 65$) were classified as clinical sample participants. Findings from

these analyses correctly classified 84 of 132 participants for a hit rate of 64 percent, with an associated sensitivity of .52 and a specificity of .76. Results from these analyses, therefore, did not indicate a significant moderator role for the IMM Scale variable in correctly identifying the clinical status of respondents.

Multivariate Analyses Results

A MANOVA was conducted to evaluate the effects of placement of participants in high versus low IMM Scale raw score groups on the overall Basic Clinical Scales profile. The results of a MANOVA indicated a significant relationship, F (17, 48) = 6.29, p = < .0001, between high versus low IMM group status and Basic Clinical Scales T-score values. Table 6 shows the mean T-score values for high versus low IMM groups for each of the ten Basic Clinical Scales, and the associated ANCOVA F-test values, with the effects of ethnicity and setting removed by covariance procedures.

Insert Table 6 about here

Figure 2 provides the profiles for the high and low IMM scale groups on the MMPI-A Basic Profile Form.

Insert Figure 4 about here

In addition, a MANOVA was conducted to evaluate the effects of high versus low IMM group placement on the 15 content scales. The results of this MANOVA showed a significant relationship between group placement and content scale T-score, F (15, 50) = 7.81, p = < .0001. Table 7 shows the content scale adjusted mean T-score values, standard deviations, and associated univariate F-test values for each of the 15 content scales as determined in ANCOVA analyses, with the effects of ethnicity and setting removed by covariance procedures.

Insert Table 7 about here

Figure 3 shows the high IMM versus low IMM group content scale profiles on the MMPI-A content and supplementary scale profile sheet.

Insert Figure 5 about here

Further, the results of this MANOVA demonstrated a significant relationship between group placement and Content Scale T-score, F (5, 60) = 5.46, p = < .0003. Individual ANCOVAS were then conducted to evaluate the effects of high versus low IMM group membership on mean T-scores for each of the remaining five supplementary scales, with the effects of ethnicity and setting removed by covariance procedures. The results of these analyses are shown in Table 8.

Insert Table 8 about here

Additionally, the mean adjusted profiles for high versus low IMM group for the Supplementary Scales are shown in Figure 5.

Finally, a stepwise multiple regression was conducted utilizing scores from six variables including the VIQ, PIQ, and FSIQ from the Weschler Scales, the Ohio Literacy Test, the WUSCT, the EOM-EIS-2, and the DIT to predict participants' IMM raw score values. The number of predictor

variables was restricted in this analysis based on the limits imposed by the use of only 66 participants in order to maintain a desirable ratio of participants to predictor variables. Thus, the use of seven predictor variables achieved a predictor variable to sample size ratio of nearly 10:1. Table 9 provides data summarizing the results of the stepwise procedure including variables selected, R^2 values, total proportion of variance accounted for by individual and cumulative R^2 values, and F-test findings for each variable included as a step in the stepwise procedure. The F value in each case represents the significance of inclusion of variables in the prediction equation.

Insert Table 9 about here

Overall results indicate that the inclusion of the Pure Stage Score from the EOM-EIS-2, The reading grade level from the Ohio Literacy Test, and the P score from the DIT accounted for a cumulative total of 46% of the variance in IMM Scale raw score values in the current sample.

CHAPTER IV

DISCUSSION

General Findings

The results of this study generally provided support for the construct validity of the MMPI-A IMM Scale as a measure of maturational development. As discussed in the following paragraphs, the IMM Scale may be described as a general measure of development which is related to several developmental domains including cognitive maturation, ego development, moral development, and identity formation. However, it should also be noted that while the IMM Scale is a broad based developmental measure, the actual range of development examined in the current investigation is restricted by the characteristics of the participants utilized in this study. For example, none of the participants scored within the higher stages of the WUSCT, defined by Loevinger (1976) as the individualistic, autonomous, and integrated stages. Further, no participants within the current investigation obtained scores in DIT stages 5B or 6 which identify individuals whose moral thinking transcends societal rules and standards and are

capable of considering ethical dilemmas in idealistic terms (Rest, 1990). Therefore, the following discussion of the IMM Scale is limited to describing relationships as they have been identified in the lower to moderate ranges of maturation exhibited by study participants. The results of the current investigation are reviewed in relation to each of the hypotheses formulated for this study.

As predicted, the IMM Scale was found to be negatively correlated with several measures of development including the Wechsler Scales, the OLT, the WUSCT, the DIT and EOM-EIS-2. These instruments measure the participant's development in the cognitive, literacy, ego development, moral, and ego identity domains, respectively. While all of the above correlations were in the predicted negative direction, only the correlations between the IMM Scale and the OLT, WUSCT, and the EOM-EIS-2 reached significance following the conservative statistical correction for multiple tests used in this investigation. Further, multiple regression analysis results in the current study indicated that a linear combination of three variables comprised of indices of identity development, reading ability, and moral development accounted for nearly one-half

(46%) of the total variance in IMM Scale raw scores. When viewed in terms of the findings obtained in the ANCOVA evaluations, participants' status in high versus low IMM Scale groups was found to be significantly related to FSIQ, VIQ, OLT scores, WUSCT scores, DIT scores, and the Total Pure Stage Score (TPSS) from the EOM-EIS-2. Thus, the current findings provide substantial support of the view that the IMM Scale is accurately described as a developmental measure related to several broad domains or developmentally relevant constructs. Butcher et al. (1992) noted in the MMPI-A manual that the item pool of the IMM Scale appears to be most closely related to Loevinger's (1976) distinction between pre-conformist and conformist stage of maturation. Additionally, these authors observed that the items which appeared to tap these content areas in the IMM Scale involve several broad domains including orientation toward the present rather than planning for the future, lack of insight or introspection, lack of cognitive complexity, interpersonal or social alienation and suspiciousness, hostility and antisocial attitudes, egocentricity, tendency to externalize blame, and lack of self-confidence.

IMM Scale Relationships with Intelligence

Hypothesis one predicted that scores on the IMM Scale would be negatively correlated with intelligence scores as measured by the Wechsler Scales. It should be noted that verbal IQ scores were not only related to IMM Scale scores, but also strongly intercorrelated with the reading grade score from the OLT and with the Total Protocol Rating (TPR) score from the WUSCT. These findings strongly suggest the presence of a verbal intelligence factor influential in both the IMM Scale and the WUSCT measure of development. The association of measures of verbal ability or intelligence with measures of developmental stages might be expected given the verbal/language format intrinsic to the instruments utilized in this study. Further, on a conceptual basis, Loevinger (1976) has indicated that verbal ability and verbal intelligence is the single most important factor in predicting an individual's placement in an ego development stage as measured by the WUSCT. Piaget (1966) has also observed a relationship between overall developmental maturation and intelligence. Thus, based on Piaget's view, we might expect individuals who produce

higher scores on the IMM Scale to be likely to demonstrate characteristics including poor impulse control, less capacity for psychological insight, lower ability to engage in reciprocal and mutually satisfying interpersonal relationships (Piaget, 1966). Individuals in these higher maturational stages would be expected to be egocentric and to have a more limited or narrow perception of the world around them. They would have difficulty assimilating information which does not fit their conceptualization of the environment and be more prone to impulsive reactions in response to difficult, or more abstract, cognitive problems because they not able to grasp abstract concepts inherent in more challenging problems. Such individuals would also be expected to score lower on intelligence measures, particularly those related to verbal and abstract reasoning tasks. Individuals who score lower on the IMM Scale are more likely to score higher on measures of intelligence. They would also be expected to demonstrate self-awareness, psychological sophistication, greater use of cognitive processes, and greater autonomy. These individuals are also more likely to comprehend and utilize abstract concepts in logic, and are more likely to appreciate complex

relationships. They understand concepts such as reciprocity and are able to use these concepts in their thinking and problem solving.

IMM Scale Relationships with Ego Development

The second hypothesis postulated that scores on the WUSCT would be significantly and negatively intercorrelated with scores on the IMM Scale. This hypothesis was generated based on the use of the WUSCT as a central instrument in the creation of the IMM Scale, i.e., the selection of IMM Scale items based on their intercorrelation with ratings from the WUSCT in the original derivation sample for the IMM Scale (Archer et al., 1994). This hypothesis was supported by the finding of a negative, significant correlation between the IMM Scale and ego development as measured by the WUSCT, and by the ANCOVA results indicating a significant relationship between participant placement in high versus low IMM Scale groups and the TPR score from the WUSCT results. The correlational relationship found between these two measures was the third highest correlation value produced by the IMM Scale in this study (see Table 3). For comparison purposes, however, this correlation was somewhat smaller than the r = -.53 correlation reported between the IMM Scale and the

WUSCT for a sample of 222 normal adolescents in the MMPI-A Manual (Butcher et al., 1992). As expected, participants who produced higher IMM Scale scores tended to be in the Preconformist Levels as determined by the WUSCT, while participants who scored lower on the IMM Scale tended to score in the conformist and the Postconformist Level. This relationship between the IMM Scale and the WUSCT is also clearly displayed in Figure 2. The relatively limited range of WUSCT scores found for participants in the current study clearly reflects the limitations of this investigation in terms of the chronological ages of participants utilized in this study, combined with the psychologically impaired nature of the sample which also served to lower developmental levels achieved by these participants.

The mean WUSCT rating for adolescents scoring in the higher ranges of the IMM Scale place their functioning at the Preconformist Level, with most scores occurring in the Impulsive and Self-protective Stages. Loevinger (1976) has described these Preconformist adolescents as impulsive and egocentric in their interpretation of the world. They think in rigidly defined black and white terms regarding their perception of others, and tend to evaluate or classify

others as good or bad based on their perception of how instrumental that other person is in providing for their needs. This style of value judgment also highlights the preconformist's dependent nature. Children and adolescents at this stage are beginning the initial phases of identity development and are likely to base their understanding of right and wrong on the immediate external consequences of their actions. That which brings immediate punishment is seen as wrong, and that which is rewarded is seen as correct or appropriate. The primary rule for the Preconformist individual is one of self-protection and is typified by the phrase "don't get caught" (Loevinger, 1976, p. 17). The Preconformist adolescent has difficulty taking responsibility for his or her actions and tends to externalize blame onto others.

The mean WUSCT rating for adolescents obtaining lower scores on the IMM Scale occurred in the Conformist Stage and the Conscientious-Conformist Level as defined by Loevinger (1976). In contrast to the narcissistic self-protection displayed by adolescents in the Preconformist Stage, Loevinger postulates that individuals at the Conscientious-Conformist Level identified their welfare with that of their

group (Loevinger, 1976). These latter individuals accept the regulations of their community, develop trust in others, and are capable of relinquishing some of their self-reliance and self-protection in promoting group identity and the interests of the group. Typically, however, this group identification is based on crude, concrete, and obvious characteristics such as age, race, or gender (Loevinger, 1976). These individuals follow rules because these rules have been established in their community. The rigid adherence to these rules prevents the Conformist Stage individual from seeing the possible consequences of generalized application of these rules and values to members of other social groups or institutions. For example, Conformist Stage individuals may view abortion as categorically wrong, regardless of the contextual circumstances surrounding the abortion (i.e., rape, incest, or the overall health risk to the mother). When the Conformist individual perceives alternatives, Loevinger (1976) indicates that they typically do so in a limited and concrete manner, and these exceptions are likely to be based on stereotypic notions and generalizations.

IMM Scale Relationships with Moral Development

Hypothesis three postulated that the IMM Scale would negatively correlate with scores from the DIT. Although a negative correlation was found between the IMM Scale and DIT scores, this relationship failed to reach significance following the Bonferroni correction for multiple tests. However, Table 5 shows that adolescents' placement in high versus low IMM Scale groups was significantly related to DIT scores ($F = 4.32$, $p = < .01$), and the DIT entered in the third step of the multiple regression equation and accounted for a significant component of variance in IMM Scale raw score values.

A review of the DIT scores produced by adolescents scoring in the higher ranges of the IMM Scale suggest that these more immature teenagers are more likely to score in DIT stages 2 and 3. As noted by Rest (1990), the Premoral Level of moral development is, in turn, comprised of Kohlberg's (1976) moral or ethical levels of Punishment and Disobedience, Reciprocity, and Good Child. Moral thinking at this level is characterized by the avoidance of punishment (Kohlberg, 1976). Adolescents in this stage of moral development tend to be egocentric when contemplating

moral dilemmas and they have difficulty viewing situations from the perspective of others.

In contrast, adolescents who scored lower on the IMM Scale (indicative of higher levels of developmental maturity) were more likely to score in DIT ranges indicative of the Principled Level. Adolescents at this stage of moral development are likely to utilize personal abstract values based on the recognition of the applicability of these values to all individuals (Kohlberg, 1976). For adolescents at this stage, the concept of justice is extended from primary relationships to the broader society. These adolescents have developed an appreciation of societal laws or mores, and recognize the importance of each citizen's compliance with these expectations for their own, and society's, benefit. Current findings demonstrate a significant relationship between moral development as measured by the DIT and the broad domains of development assessed by the IMM Scale.

IMM Scale Relationships with Identity Development

The fourth hypothesis postulated a negative or inverse relationship between IMM Scale scores and ego-identity stage. This hypothesis was strongly supported by the

significant negative correlation found between the IMM Scale and the EOM-EIS-2 ($r = -.56$, $p = < .0017$), the results of the multiple regression analyses in which the TPSS from the EOM-EIS-2 was selected as the first step in the prediction equation, and the ANCOVA finding which demonstrated a significant relationship between participants placement in high versus low IMM Scale groups and their total TPSS score on the EOM-EIS-2. This hypothesis was formulated based on the number of writers who have viewed the development of identity as the primary developmental task during adolescence (e.g., Erickson, 1963, Marcia, 1966, Loevinger, 1976, and Rest, 1975). Results of the current study provide clear empirical support for this widely held notion that identity formation is a central aspect of adolescent development.

Immature adolescents, as identified by higher scores on the IMM Scale, were more likely to score in the Diffusion and Foreclosure Stages of the EOM-EIS-2 (see Figure 3). Adolescents in these latter stages were described by Marcia (1966) as unlikely to have engaged in the struggle to achieve a cohesive identity. When adolescents in the Foreclosure Stage do show evidence of the development of an

identity, it is likely that this identity reflects the premature acceptance of a primary caregiver's values and expectations without personal questioning. For example, the adolescent who has unreflectively and passively accepted the identity and values assigned to them by their parents, peer group, or religious group.

In contrast, adolescents who scored lower on the IMM Scale, indicative of higher levels of maturation, were more likely to produce EOM-EIS-2 scores in the Moratorium or Achievement Stages. As defined by Marcia (1966), these latter adolescents are more likely to be actively involved in crisis and exploration as they seek to formulate their identity in a creative and constructive process. When these adolescents commit to a self-defined sense of identity, the commitment represents the successful resolution of a period of exploration and crisis.

IMM Scale Descriptors Generated by the Analyses

In addition to the four explicit hypotheses noted above, two additional and exploratory hypotheses were identified in this investigation. The first of these exploratory hypotheses focused on the feasibility of the development of a set of coherent descriptors for teenagers

who score high and low on the IMM Scale. The descriptors from the various univariate results discussed above are integrated into these descriptors, as well as results from the additional MANCOVA, ANCOVA, and multiple regression analyses.

As summarized in Table 10, adolescents who score higher on the IMM Scale are more likely to have a lower FSIQ, particularly VIQ, scores and to have lower levels of reading ability as measured by the OLT. These individuals will tend to think in concrete terms with little ability for abstract thought. In addition, the univariate findings from ANCOVA results indicate that adolescents who score in the higher IMM Scale ranges are more likely to be impulsive, and exploitive and demanding in social relationships. Further, high scores on the IMM Scale are associated with egocentric thought and an inability to think of anyone else's needs as shown in the DIT results. Higher scores on the IMM Scale are also associated, as demonstrated by the EOM-EIS-2 results, with the failure to engage in a questioning or searching process which would lead to the development of coherent sense of self or a premature acceptance of a primary caregiver's values and advice without question.

These data would suggest that individuals who score high on the IMM Scale will present special challenges in psychotherapy due to limited insight and abstract thinking. These individuals may respond more favorably to cognitive-behavioral interventions than to traditional insight oriented psychotherapies.

Adolescents who score lower on the IMM Scale are more likely to have higher FSIQ scores, particularly VIQ scores, and to have higher levels of reading ability. These individuals will have a greater capacity to think in abstract terms. In addition, the WUSCT univariate findings from the ANCOVA indicate that adolescents who score in the lower IMM Scale ranges are more likely to identify with the values and beliefs of their social group and be able to perceive the world from the viewpoint of others. They are also more likely to have completed or be engaged in a creative struggle to define a coherent sense of self (i.e., EOM-EIS-2 results), and based on the DIT findings they are more likely to exhibit higher levels of moral development including empathy and an understanding of the rights of others.

Insert Table 10 about here

The IMM Scale descriptors found in the current study are generally consistent with descriptors generated by Archer, Pancoast, and Gordon (1994) in the original derivation of this measure. Specifically, these researchers found that normal adolescents who produced higher scores on the IMM Scale had a higher incidence of school difficulties including grade failures and disciplinary actions. Additionally, data analysis derived from an inpatient adolescent sample indicated that adolescents who produced higher IMM Scale scores were more easily frustrated and quick to anger, and seen as impatient, loud, and boisterous. In addition to a higher incidence of school problems, these adolescents also were more likely to have histories of academic and social difficulties, and then to be viewed as delinquent, defiant, and resistant. These adolescents were not trustworthy or dependable in interpersonal relationships, and tended to tease or bully others. In contrast, adolescents who scored lower on the IMM Scale on this investigation were described by Archer et al. (1994),

as controlled, stable, patient, cooperative, and more predictable than their high IMM Scale scoring counterparts.

More recently, Archer and Krishnamurthy (1994) utilized the findings from a factor analysis of the 69 MMPI-A scales and subscales conducted by Archer, Belevich, and Elkins (1994) to develop a MMPI-A Structural Summary. The MMPI-A Structural Summary places interpretive emphasis on the use of eight factors or dimensions to organize the data derived from this test instrument. The second factor or dimension in the MMPI-A Structural Summary was labeled Immaturity and was defined by basic scales F, F_1, F_2, 6, and 8, the A-Biz, A-Con, A-Trt, A-Aln, A-Fam, and A-Sch content scales, and the Immaturity (IMM) Scale, Alcohol-Drug Problem Acknowledgment (A-Ack), and MAC-R supplementary scales. The primary marker used to identify this dimension is the IMM scale.

Archer, Krishnamurthy, and Jacobson (1994) undertook an investigation of the empirical correlates of each of the structural summary factors. These correlates were based on results generated by the Life Events form and the Biographical Information Form used with the 1,620 adolescents in the normative sample, and from findings

obtained from adolescent psychiatric inpatients with the Life Events Form, the DABRS, the Child Behavior Checklist, admission note, presenting problems, and from the Biographical Information Form. Based on analyses of these data, adolescents who produced elevated scores on a majority of the scales and subscales associated with the Immaturity dimension were more likely to reflect the following characteristics:

> Attitudes and behaviors involving egocentricity and self-centeredness, limited self-awareness and insight, poor judgment and impulse control, and disturbed interpersonal relationships. Adolescents who obtained high scores on this factor often have problems in the school setting involving disobedience, suspensions, and history of poor school performance. Their interpersonal relationships are marked by cruelty, bullying, and threats, and they often associate with peers who get into trouble (Archer, Krishnamurthy, & Jacobson, 1994, p.17).

In addition, Archer, Pancoast, & Gordon (1994) noted that these adolescents often had strained family relationships and were frequently involved in arguments with their parents. They often acted impulsively and displayed little remorse for their behaviors. Boys who scored high on this factor were more likely to be seen as hyperactive and immature, while girls were more likely to be rated as delinquent and aggressive.

IMM Scale as a Moderator Variable

The second exploratory hypothesis evaluated the degree to which the IMM Scale serves as a moderator variable in the identification of clinical levels of symptomatology based on MMPI-A basic scale profile characteristics. This hypothesis stated that by comparing scores on the IMM Scale derived from the clinical sample in the present study with IMM Scale scores derived from a matched group selected from the MMPI-A normative sample, the use of the IMM Scale might improve group discrimination in a manner similar to the use of the MMPI-2 (Hathaway, McKinley, Butcher, Dahlstrom, Graham, & Tellegen, 1989) K Scale correction factor. This hypothesis was not supported by the results of the current study. The hit rates resulting from the use of the IMM Scale to predict placement of participants into the clinical versus normal sample were not higher than the classification accuracy obtainable solely from the use of MMPI-A basic scale T-score elevations. Thus, the results of this analysis suggest that the IMM Scale does not function as a moderator variable and the use of the IMM Scale in this role will not improve the accuracy achieved by the clinical scales.

The discussion of the possible use of the IMM Scale as a moderator variable may be related to the broader issue of the relationship of IMM Scale scores to scores obtained on other MMPI-A scales. In the current study, this issue was addressed in three analyses which focused on the MMPI-A basic scales, content scales, and supplementary scales, respectively. The results of analysis of high versus low IMM Scale grouping and the effects of placement on the MMPI-A Basic Scales resulted in significant findings for 13 of the 17 basic scales. In all 13 cases, adolescents who produced higher IMM Scale scaled scores also produced higher mean values on these basic scales. The magnitude of these mean T-score differences exceeded one standard deviation (10 T-score points) for scale F, the F subscales, and scale 8. This result is consistent with prior findings by Archer (1987) that reported scales F and 8 are particularly sensitive to the respondent's status in terms of developmental issues, i.e., these scales typically showed the largest magnitude of differences between adolescent and adult respondents. Thus, participants in the current study who differ on IMM Scale elevation also obtained differences on the MMPI-A Basic Scales which have been linked in prior

research findings to differences in developmental maturation. While some of these differences may be attributable to the observation that several of the items which appear on the IMM Scale are also scored on a variety of basic scales, the overall magnitude of profile differences between high and low IMM Scale groups is sufficiently large to allow for the conclusion that these profile differences also reflect real differences in personality functioning and level of adjustment.

Similarly, high IMM adolescents scored significantly higher than low IMM adolescents on all 15 content scales. Mean differences of at least one standard deviation were found for content scales A-dep, A-aln, A-ang, A-Con, A-Fam, A-Sch, and A-Trt. This specific pattern of content scale mean differences would indicate that high IMM adolescents may be characterized, in contrast to low IMM adolescents, by greater levels of depression, alienation, anger, behaviors and attitudes related to conduct disorder, problems in the family and school settings, and generally negative treatment attitudes related to either a cynical view of the psychotherapy process or a sense of one's problems as intractable. This content scale pattern is also very

similar to IMM Scale relationships found in analyses of the normative sample by Archer, (1992).

Finally, adolescents who score high on the IMM Scale were found to have significantly higher mean values on the ACK, PRO, and Anxiety (A) Supplementary Scales. In the case of the supplementary scales, the magnitude of the mean differences was relatively smaller (i.e., less than one standard deviation), and no significant mean differences were noted for the MAC-R or the Repression (R) supplementary scales. The overall MMPI-A pattern observed in this study was an association between higher IMM Scale scores and higher values on a broad variety of other MMPI-A scales. The type of complex inverse relationship found between the K-Scale values and the basic clinical scales, for example, was not found to hold true for the IMM Scale. These findings, combined with results of the hit-rate analyses, served to reinforce the conclusion that the IMM Scale does not function as a moderator variable in the identification of clinical symptomatology based on MMPI-A profile characteristics.

Future Directions The current study is based on a relatively small sample, restricted to one geographic area

and three treatment settings. In addition, a complex interplay between the effects of setting and ethnic background on IMM Scale scores potentially confounded the interpretation of major findings. For this reason, an analysis of covariance (ANCOVA) was employed in the current study to remove the effects of both setting and ethnicity in order to clarify the evaluation of major hypotheses. Unfortunately, the removal of the effects of ethnicity and setting by ANCOVA techniques did not address a larger issue concerning whether reliable ethnic or setting effects occur for the IMM Scale. Future researchers should address these important issues by using larger sample sizes, with data collected from diverse settings and ethnic groups, capable of producing sensitive statistical analyses and stable findings. Further, future researchers may wish to systematically include samples of normal adolescents, as well as adolescents from outpatient and acute care treatment settings, to provide a broader developmental range than that found in the current sample. The use of samples containing more diverse developmental levels would assist in filling the gaps in the current research and providing data and descriptors applicable to higher levels of development,

particularly those developmental stages measured by such instruments as the WUSCT and the DIT.

Contrary to our predictions, and to previous findings by Cohn (1991) and Gfellner (1986a), there were no significant gender effects found for the IMM Scale in the current study. As noted in Archer (1992), IMM Scale mean raw score values were significantly higher for male participants than female participants in both clinical and normal samples, and this gender difference in IMM scale scores was viewed as similar to the gender differences found for the WUSCT in child and adolescent samples as reported by Cohn (1991). The failure to identify a significant gender effect in the current investigation may have been related to the use of a small sample size, and future researchers should seek to increase the power of their analyses by the use of increased sample sizes in order to more adequately evaluate potential differences between male and female participants on the IMM Scale.

In addition to issues related to sample size, the current study was also limited by the selection of instruments employed in this investigation. The WUSCT is a very complex and difficult instrument to score reliably.

The current investigator took steps to reduce the potential scoring errors found for the WUSCT by the use of extensive training exercises for the raters and the use of multiple raters. The interrater reliability of .81 achieved for the WUSCT in this study compares favorably to the reliability data reported by Loevinger and Wessler (1970) for the instrument. In contrast, findings related to the DABRS were not productive in the current study. Problems with the DABRS may have been related to validity issues with this measure, but reliability limitations cannot be ruled out in the current study. The DABRS was completed by a wide variety of individuals involved in the participant's care, from individual therapist to unit administrators. Beyond the standard instructions included in the DABRS booklet, there was no individualized or group training provided to these raters in order to accomplish a more standardized method of reporting. Thus, the definitions of DABRS terms such as "impulsive behavior" probably varied substantially from rater to rater, and the crucial issue of interrater reliability was not evaluated for this instrument. Thus, these reliability issues may have contributed to the very limited usefulness of the DABRS in the current study.

Future researchers employing the DABRS should provide training to raters to promote greater reliability, and they should explicitly assess interrater reliability for this instrument to objectively evaluate the importance of this issue in interpreting their findings. Further, given a recent and substantial revision of the DABRS, researchers may profit from using the more contemporary form of this rating instrument (Naglieri, LeBuffe, and Pfeiffer, 1993 & 1994).

Summary

In summary, the current investigation examined the relationship between the MMPI-A IMM Scale and a variety of other developmentally-related instruments in a sample of 66 male and female adolescents in three treatment settings. The current study represents the first attempt, apart from the original derivation of the IMM Scale, to evaluate aspects of the concurrent validity of this new MMPI-A supplementary scale. The investigation was subject to limitations posed by the use of a relatively small sample size, and the occurrence of setting and ethnic differences which required the use of an analysis of covariance technique for the evaluation of major hypotheses.

Nevertheless, the current study provides data supportive of the concurrent validity of the IMM Scale in that this measure bore expected and predicted relations to other developmental measures and to a theoretically meaningful pattern of MMPI-A scales. Current findings do not, however, support the use of the IMM Scale as a moderator variable in the identification of clinical levels of symptomatology in a manner that is analogous to the traditional use of the K-scale as a basic scale correction factor.

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Table 1

Descriptions of Stages of Moral Development Utilized in the Defining Issues Test

Stage	Description
Stage 2	represents considerations that focus on the fairness of simple exchanges of favor for favor
Stage 3	represents considerations that focus on the good or evil intentions of the parties, on the party's concern for maintaining friendships and good relationships, and approval from others
Stage 4	represents considerations that focus on maintaining the existing social-legal system, maintaining existing roles and formal organizational structure

(table continues)

Table 1 (continued)

Stage	Description
Stage 5A	represents considerations that focus on organizing a society by appealing to consensus-producing procedures (such as abiding by the will of the people), insisting on due process (giving everyone his day in court), and safeguarding minimal basic rights
Stage 5B	represents considerations that focus on organizing social arrangements and relationships in terms of intuitively appealing ideals (but which may lack a rationale for gaining general support)
Stage 6	represents considerations that focus on organizing a society and human relations in terms of ideals that appeal to a rationale for eliminating arbitrary factors that are designed to optimize mutual human welfare

Note. adapted from Rest (1990, p. 12).

Table 2

Summary of the Four Major Developmental Theories

Stage	Age Period	Cognitive (Piaget)	Ego (Loevinger)	Moral (Kolhberg)	Psychosocial (Erikson)
Infancy	Birth to 18 mos	Sensorimotor	Autistic Symbiotic Impulsive	(Premoral)	Trust vs Mistrust
Early Childhood	18 mos to 6 yrs	Preoperational	Self-Protective	Punishment & Obedience (Stage 1) Reciprocity (Stage 2)	Autonomy vs Doubt Initiative vs Guilt

(table continues)

Table 2 (continued)

Stage	Age Period	Cognitive (Piaget)	Ego (Loevinger)	Moral (Kolhberg)	Psychosocial (Erikson)
Late Childhood	6 yrs to 13 yrs	Concrete Operations	Conformist Conscientious -Conformist	Good Child (Stage 3)	Industry vs Inferiority
Adoles-cence	13 yrs to 18 yrs	Formal Operations	Conscientious	Law & Order (Stage 4)	Identity vs Role Confusion
Young Adulthood	18 yrs to 45 yrs		Individualistic	Social Contract (Stage 5)	Intimacy vs Isolation

(table continues)

Table 2 (continued)

Stage	Age Period	Cognitive (Piaget)	Ego (Loevinger)	Moral (Kolhberg)	Psychosocial (Erikson)
Middle Age	45 yrs to 65 yrs		Autonomous	Universal Ethical Principles (Stage 6)	Generativity vs Stagnation
Old Age	65 yrs to Death		Integrated		Integrity vs Despair

Note. mos = months; yrs = years

Age periods are approximations. Loevinger and Kohlberg do not provide age approximations.

Table 3

Intercorrelations between the IMM Scale and the Weschler Scales, OLT, WUSCT, DIT, and the EOM-EIS-2 Variables

Variable	1	2	3	4	5	6	7	8
1. IMM	--	-.25	-.35	-.09	-.44*	-.40*	-.26	-.56*
2. FSIQ		--	.87*	.87*	.40*	.41*	.07	.27
3. VIQ			--	.54*	.55*	.47*	.08	.26
4. PIQ				--	.16	.28	.00	.22
5. OLT					--	.38*	.07	.24
6. TPR						--	.10	.36
7. DIT							--	.03
8. TPSS								--

Note. IMM = Immaturity Scale, FSIQ = Full Scale Intelligence Quotient, VIQ = Verbal Intelligence Quotient, PIQ = Performance Intelligence Quotient, OLT = Ohio Literacy Test reading grade level, TPR = WUSCT Total Protocol Rating score, DIT = DIT P score, and TPSS = EOM-EIS-2 Total Pure Stage Score.

* $p < .0017$.

Table 4

Raw Score Intercorrelations between the IMM Scale and the DABRS

Variable	IMM
Unethical	.15
Defiant/Resistive	.15
Domineer/Sadistic	-.01
Heterosexual Interest	.01
Hyperactivity/Expansive	-.15
Poor Emotional Control	.06
Needs Approval/Dependency	-.03
Emotional Distance	.03
Physical Inferiority/Timidity	-.06
Schiziod/Withdrawal	-.02
Bizarre Speech and Cognition	.05
Bizarre Action	-.09
Inability to Delay	.03
Paranoid Thinking	-.03
Anxious Self-Blame	-.10

(table continues)

Table 4 (continued)

Note. None of the correlational values above reached the $p < .003$ level required for significance following the Bonferroni adjustment of the alpha level.

Table 5

Adjusted Means, Standard Deviations, and F-test Variables for High and Low IMM Groups on Dependent Variables as Derived from ANCOVAs

	High IMM		Low IMM		
Source	Mean	SD	Mean	SD	F
FSIQ	88.44	2.31	93.27	2.47	3.28*
VIQ	87.35	2.17	92.57	2.32	5.89**
PIQ	90.90	2.67	94.86	2.86	1.36
OLT	8.14	.17	8.71	.19	7.28***
TPR	2.29	.28	3.22	.30	5.07**
DIT	24.10	1.93	28.90	2.08	4.32**
TPSS	1.25	.16	2.58	.17	12.52***

Note. df for analyses listed above are 3,62

FSIQ = Full Scale Intelligence Quotient, VIQ = Verbal Intelligence Quotient, PIQ = Performance Intelligence Quotient, OLT = Ohio Literacy Test reading grade level, TPR = Washington University Sentence Completion Test Total

(table continues)

Table 5 (continued)

Protocol Rating, DIT = Defining Issues Test P Score; TPSS = Extended Objective Measure of Ego Identity Status - 2 Total Pure Stage Score.

* = p <.05., ** = p <.01., *** = p <.001.

Table 6

Adjusted Means, Standard Deviations, and F-test Values for High Versus Low groups on MMPI-A Basic Clinical Scales as Derived from ANCOVAs

	High IMM		Low IMM		
Source	Mean	SD	Mean	SD	F
VRIN	55.81	1.66	50.96	1.78	6.86***
TRIN	59.86	1.27	58.80	1.36	.27
F1	68.62	1.69	53.69	1.81	30.15***
F2	60.30	1.45	49.56	1.55	21.98***
F	64.45	1.42	51.43	1.52	33.59***
L	51.61	1.60	53.21	1.71	1.11
K	44.98	1.85	51.99	1.98	3.49*
Hs	57.49	1.78	50.25	1.91	4.18**
D	57.19	1.54	51.49	1.65	3.64*
Hy	53.11	1.99	54.04	2.13	2.04
Pd	66.22	1.86	59.08	2.00	2.67
Mf	54.47	1.65	52.66	1.77	3.50*
Pa	61.42	1.64	52.56	1.76	6.01**

(table continues)

Table 6 (continued)

	High IMM		Low IMM		
Source	Mean	SD	Mean	SD	F
Pt	57.21	1.59	47.99	1.71	7.44***
Sc	63.57	1.75	50.78	1.88	11.78***
Ma	59.08	2.02	52.84	2.17	3.82*
Si	55.02	1.47	45.14	1.58	7.21***

Note. * = $p < .05$ ** = $p < .01$ *** = $p < .001$.

Table 7

Adjusted Means, Standard Deviations, and F-test values for High Versus Low groups on MMPI-A Content Scales as Derived from ANCOVAs

	High IMM		Low IMM		
Source	Mean	SD	Mean	SD	F
A-ANX	56.41	1.62	49.09	1.73	4.69**
A-OBS	55.33	1.97	47.47	2.12	3.05*
A-DEP	59.61	1.66	49.44	1.78	6.87***
A-HEA	58.27	1.81	50.95	1.94	6.28***
A-ALN	63.33	1.76	46.78	1.89	12.52***
A-BIZ	58.54	1.99	53.23	2.14	5.97**
A-ANG	64.96	2.09	52.85	2.24	5.44**
A-CYN	57.38	1.88	52.09	2.01	4.03*
A-CON	65.05	2.19	52.01	2.35	7.59***
A-LSE	55.63	1.73	47.12	1.86	6.64***
A-LAS	55.32	1.64	47.09	1.76	10.35***
A-SOD	54.30	1.48	45.27	1.59	5.25**
A-FAM	65.25	2.26	52.58	2.42	5.99**

(table continues)

Table 7 (continued)

	High IMM		Low IMM		
Source	Mean	SD	Mean	SD	F
A-SCH	63.01	1.52	49.31	1.63	17.94***
A-TRT	61.49	1.60	45.81	1.71	21.07***

Note. * = $p < .05$ ** = $p < .01$ *** = $p < .001$.

Table 8

Adjusted Means, Standard Deviations, and F-test Values for High Versus Low groups on MMPI-A Supplementary Scale as Derived from ANCOVAs

	High IMM		Low IMM		
Source	Mean	SD	Mean	SD	F
MAC-R	64.25	1.63	59.33	1.75	1.85
ACK	61.50	2.08	52.53	2.24	5.73**
PRO	61.09	1.88	54.77	2.02	3.36*
A	55.73	1.62	48.30	1.74	4.96**
R	47.43	1.70	49.87	1.82	.63

Note. * = $p < .05$ ** = $p < .01$.

Table 9

Stepwise Multiple Regression Findings for Selected Variables Regressed on IMM Raw Scores

Variables	Step	Partial R^2	Cumulative R^2	F
EOMEIS-2	1	.32	.32	29.89***
OLT	2	.09	.41	10.21**
DIT	3	.05	.46	5.84*

Note. EOM-EIS-2 = Extended Objective Measure of Ego Identity Status - 2nd Revision Total Pure Stage Score, OLT = Ohio Literacy Test Reading Grade Level, DIT = Defining Issues Test P Score.

* = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Table 10

Descriptors for High and Low Scores on the IMM Scale

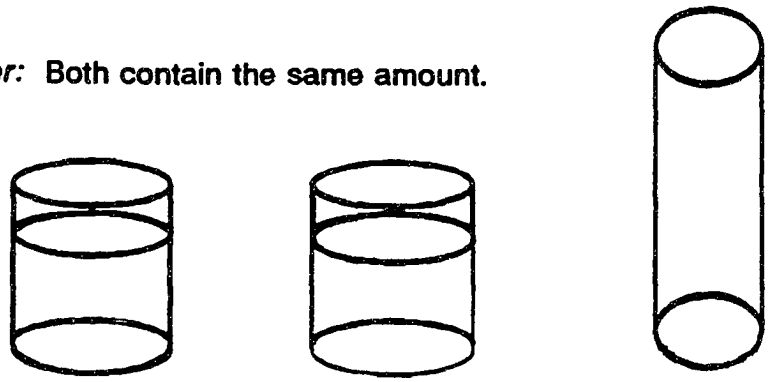
High IMM Scale Scores:
• Lower scores on intelligence measures
• Lower reading ability
• Thinks in concrete terms
• Impulsive
• Exploitive and demanding in relationships
• Egocentric
• Poorly developed identity
Low IMM Scale scores:
• Higher scores on intelligence measures
• Higher reading ability
• Thinks in abstract terms
• Capacity for insight
• Autonomy
• Demonstrates empathy and reciprocity in relations
• Acceptance of societal rules and standards
• Developed identity or engaged in identity exploration

FIGURES

Figure 1. Piaget's task of conservation.

Which glass contains the most liquid, a or b?

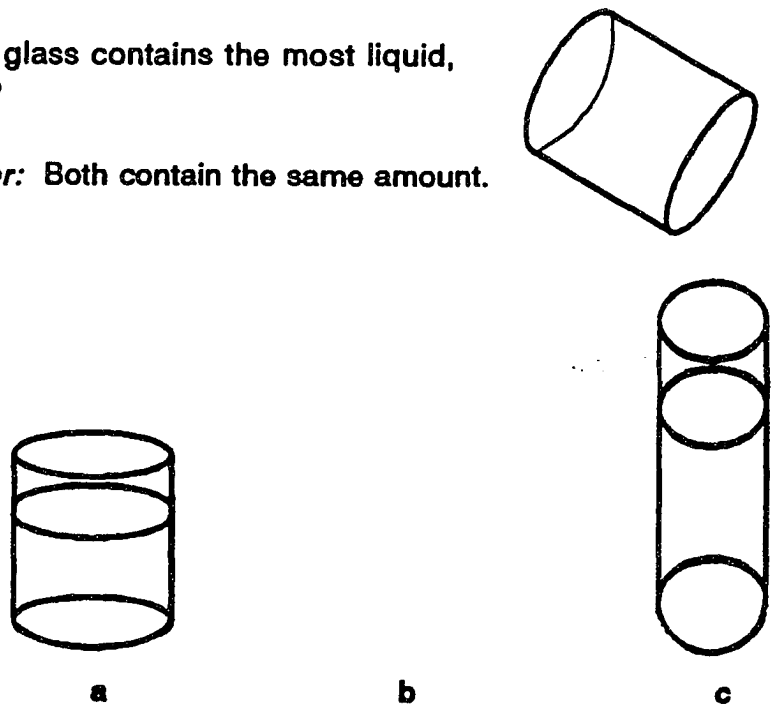
Answer: **Both contain the same amount.**



a **b** **c**

Which glass contains the most liquid, a or c?

Answer: **Both contain the same amount.**



a **b** **c**

Figure 2. Mean IMM Scale T-score by WUSCT stage.

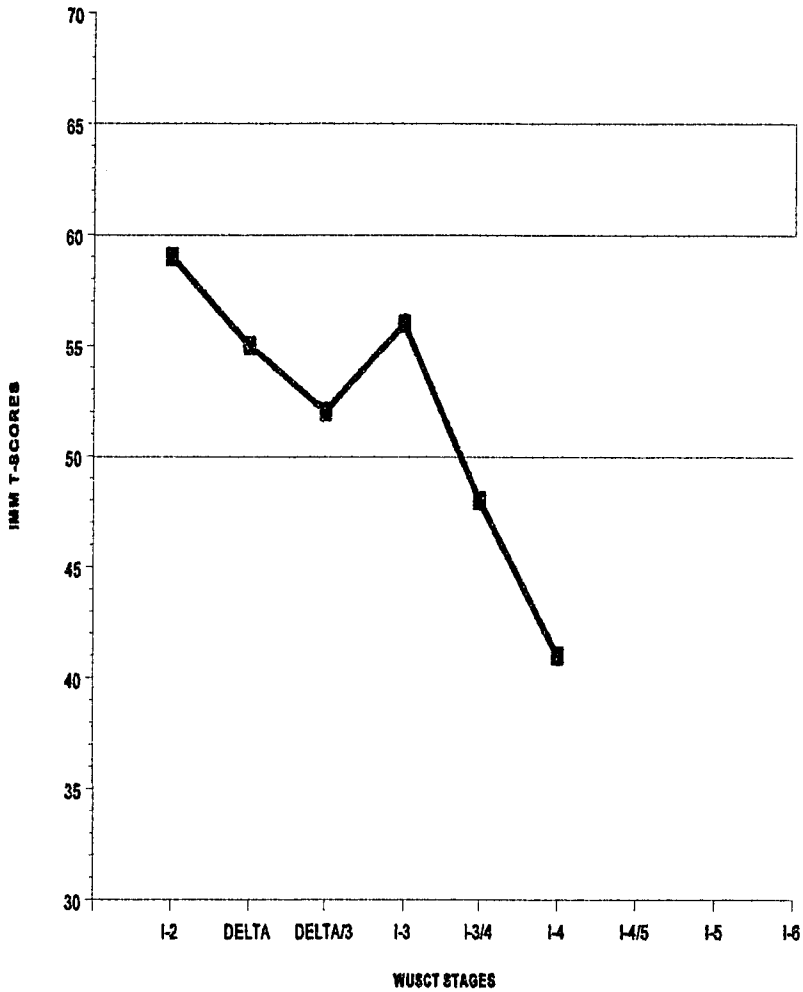


Figure 3. Mean IMM Scale T-score by EOM-EIS-2 Total Pure Stage Score.

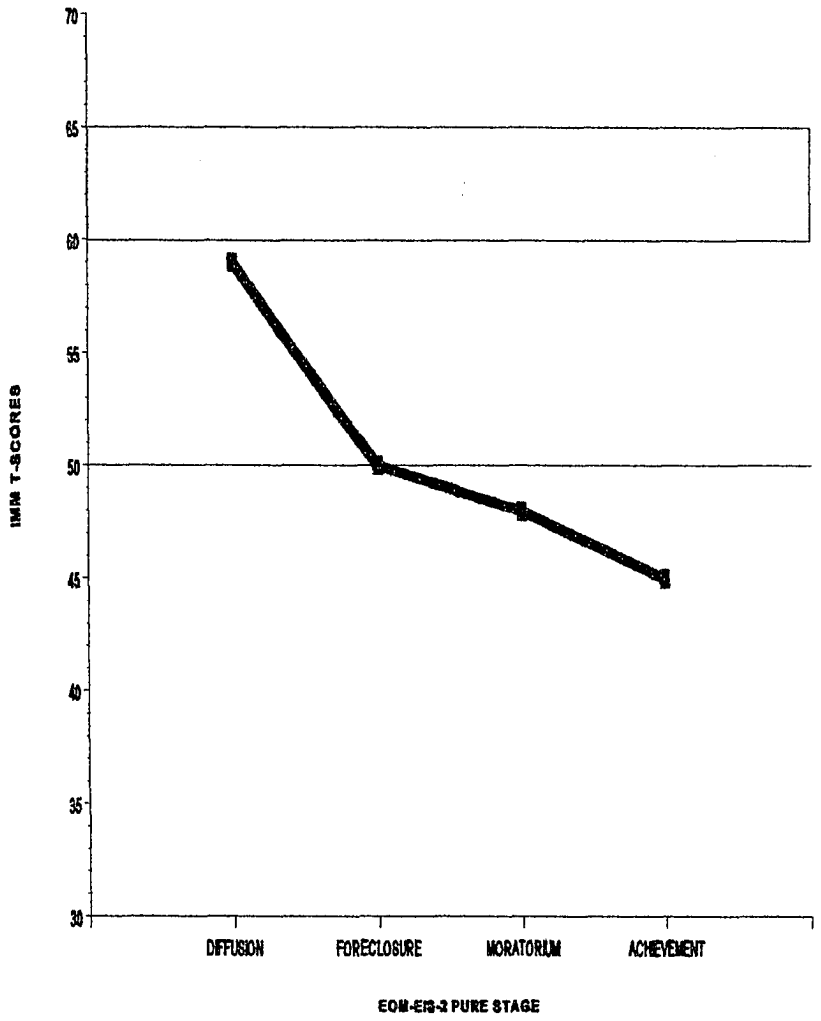


Figure 4. Mean MMPI-A Basic Scales profile by high and low grouping on IMM.

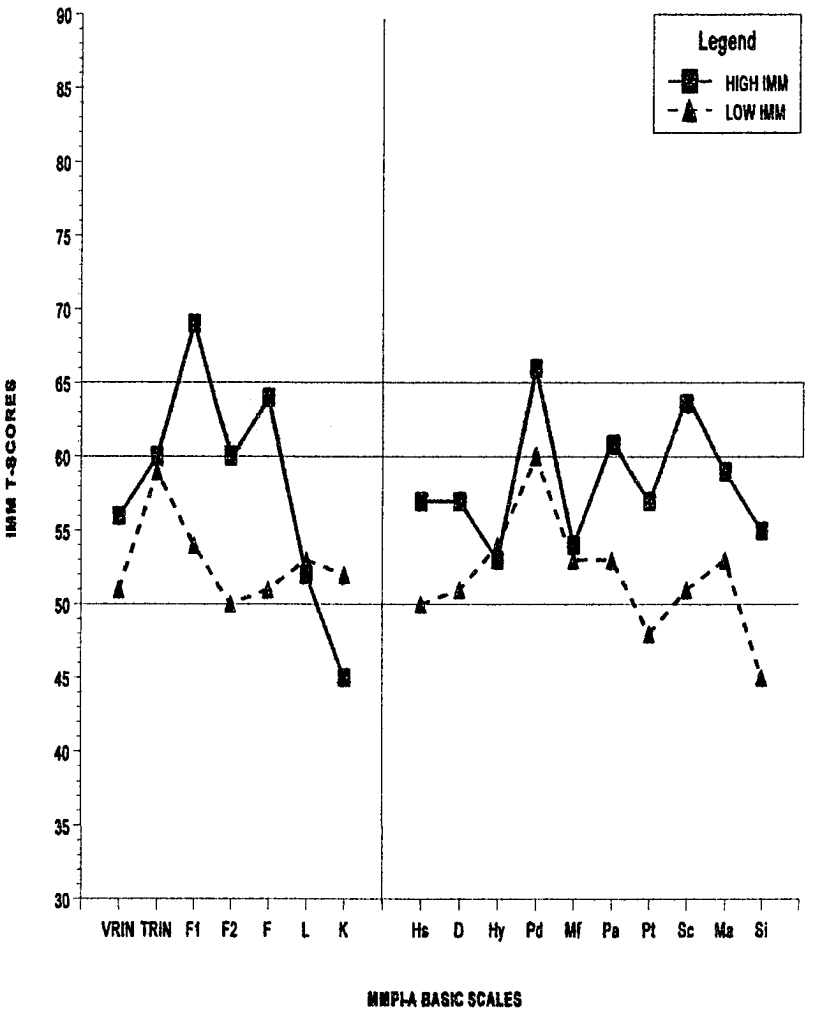
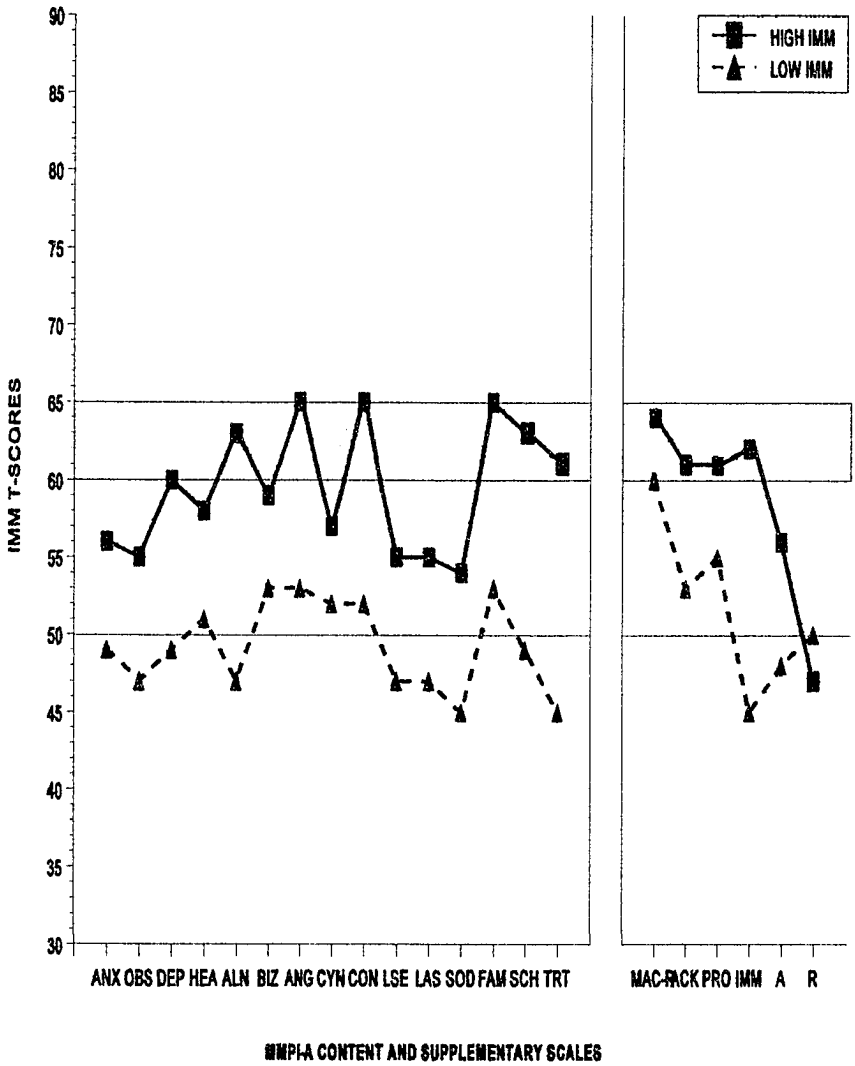


Figure 5. Mean MMPI-A Content Supplementary Scales profile by high and low grouping on IMM.



APPENDICES[1]

[1] Some documents are reduced to 70% of original to accommodate formatting restrictions.

Appendix A:

Item Composition of MMPI-A IMM Scale

Table A

Item Composition of MMPI-A IMM Scale

Item Number	Item Content	Shared Scale Membership
16	I am sure I get a raw deal from life.	4,6,8,aln
20	No one seems to understand me.	4,6,8,aln,trt
24	When people do me a wrong, I feel I should pay them back if I can, just for the principle of the thing.	5
45	Most anytime I would rather sit and daydream than do anything else.	8
63	It would be better if almost all laws were thrown away.	F_1
64	I like poetry.	5
71	I usually feel that life is worthwhile.	2,dep

(table continues)

Table A (continued)

Item Number	Item Content	Shared Scale Membership
72	It takes a lot of argument to convince most people of the truth.	K,2,3,5,cyn
94	Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.	3,6,9
101	In school I have sometimes been sent to the principle for bad behavior.	4,sch,MAC-R, PRO
105	I seem to be about as capable and smart as most others around me.	2,7,lse
120	I believe in law enforcement.	F_1

(table continues)

Table A (continued)

Item Number	Item Content	Shared Scale Membership
128	At times I feel like picking a fist fight with someone.	2,ang,R
153	I like school.	4,sch,MAC-R, PRO
170	I like to study and read about things that I am working at.	7,las
218	I have difficulty in starting to do things.	2,8,las,A
224	At times it has been impossible for me to keep from stealing or shoplifting something.	F_1,con
269	My parents and family find more fault with me than they should.	4,fam,MAC-R, ACK

(table continues)

Table A (continued)

Item Number	Item Content	Shared Scale Membership
307	Bad words, often terrible words, come into my mind and I cannot get rid of them.	7,obs
322	I enjoy children.	8
336	I do not mind meeting strangers.	0,sod,PRO
351	The only interesting part of newspapers is the comic strips.	las
354	I can easily make other people afraid of me, and sometimes do for the fun of it.	con
358	I do not feel I can plan my own future.	F_2,lse,trt

(table continues)

Table A (continued)

Item Number	Item Content	Shared Scale Membership
362	I don't like hearing other people give their opinions about life.	aln
371	The future is too uncertain for a person to make serious plans.	dep,cyn,trt
389	In school my grades in classroom behavior (conduct) are quite regularly bad.	sch,PRO
400	People can pretty easily change my mind even when I have made a decision about something.	lse
405	I hate my whole family.	F_2,fam

(table continues)

Table A (continued)

Item Number	Item Content	Shared Scale Membership
418	I am not responsible for the bad things that are happening to me.	trt,PRO
419	My main goals in life are within my reach.	trt
423	I believe that people should keep personal problems to themselves.	trt
425	I think my teachers at school are stupid.	sch
426	Although I am not happy with my life, there is nothing I can do about it now.	trt
431	Talking over problems and worries with someone is often more helpful than taking drugs or medicines.	trt,ACK
436	I want to go to college.	las,PRO

(table continues)

Table A (continued)

Item Number	Item Content	Shared Scale Membership
441	People do not find me attractive.	lse
444	It bothers me greatly to think of making changes in my life.	obs,trt
448	Most people think they can depend on me.	aln
452	The only good thing about school is my friends.	sch,PRO
453	Others say I throw temper tantrums to get my way.	ang
466	At school I am very often bored and sleepy.	sch
476	I have a close friend whom I can share secrets with.	PRO

Note. Adapted from Butcher et al. (1992).

Appendix B:

Summary of Instruments

Table B

Summary of Instruments

Abbrev.	Instrument and Description
DABRS	The Devereux Adolescent Behavior Rating Scales: An 84 item behavior rating scale completed by unit staff on a five and eight point scale.
	demographic questionnaire: A form completed by the principle investigator which gathered basic demographic and historical information.
DIT	The Defining Issues Test: A standardized paper and pencil instrument which measures moral development. The participant is required to read six passages which describe moral dilemmas, make a decision of how to respond to the dilemma, rate 12 issues based on the issue's importance for that individual's decision, and select the four most important

(table continues)

Table B (continued)

Abbrev.	Instrument and Description
	issues for each passage. The P Score, which is the participant's percentage of responses in Stages 5A, 5b, and 6, where used in all analyses.
EOM-EIS-2	The Extended Objective Measure of Ego Identity Status - Second Revision: A 64 item paper and pencil measure designed to assess the participants development of an identity. The participant responds to the items on a five point scale, indicating the degree to which that item applies to them. The respondent's scores are compiled to produce the Total Pure Stage Score (TPSS).

(table continues)

Table B (continued)

Abbrev.	Instrument and Description
IMM Scale	The Immaturity Scale: A 43 item Supplementary Scale of the MMPI-A designed to measure psychological maturation.
MMPI-A	The Minnesota Multiphasic Personality Inventory - Adolescent: A paper and pencil instrument which requires the participant to respond "True" or "False" to 478 items. The instrument is scored on a number of Clinical and Content Scales.
OLT	The Ohio Literacy Test (OLT): A 33 item paper and pencil measure which requires the respondent to respond "Yes" or "No" to a number of true or false statements of increasing difficulty.

(table continues)

Table B (continued)

Abbrev.	Instrument and Description
WAIS-R WISC-III WISC-R	The Wechsler Scales: These scales employ a number of verbal and motoric tasks designed to assess cognitive abilities.
WUSCT	The Washington University Sentence Completion Test - Short Form: A 12 item sentence completion test designed to measure ego development as defined by Loevinger's (1976) theory. The respondent receives a Total Protocol Rating (TPR).

Appendix C:

Biographical Data Form[2]

and

Supplementary Biographical Data Sheet

[2] Printed on front and back of paper.

BIOGRAPHICAL INFORMATION

ID#:_____ SEX:_____ AGE:_____

DIRECTIONS: WRITE THE NUMBER OF YOUR ANSWER FOR EACH QUESTION IN THE BLANK(S) AFTER EACH QUESTION.

1. What is your ethnic background (race)? _____

   1. Caucasian
   2. African-American
   3. Hispanic
   4. Native American
   5. Other: _____

2. What is your religion? _____

   1. Catholic
   2. Protestant
   3. Jewish
   4. Mormon
   5. Muslim
   6. Other

3. What is your present grade in school? _____

   1. 5th
   2. 6th
   3. 7th
   4. 8th
   5. 9th
   6. 10th
   7. 11th
   8. 12th

4. Do you participate in any school activities such as sports, band, clubs, drama, or other activities? _____

   1. Yes 2. No

5. Have you had any of these problems in school? (1=Yes 2=No)

   Disciplinary/Probation _____ Suspension _____
   Expulsion _____ Course Failure _____
   Repeated a Grade _____

6. What are your plans when you are done with school? _____

   1. Work/study program
   2. Technical training
   3. Two year college
   4. Four year college
   5. Commercial/business school
   6. Trade school
   7. Military service
   8. Job
   9. Undecided
   10. Other

(PLEASE CONTINUE ON THE BACK OF THIS SHEET)

7. What is your father's or stepfather's education? _____

   1. Grade school 3. High school 5. College graduate
   2. Some high school 4. Some college 6. Graduate school

8. What is your father's or stepfather's job? _____

9. What is your mother's or stepmother's education? _____

   1. Grade school 3. High school 5. College graduate
   2. Some high school 4. Some college 6. Graduate school

10. What is your mother's or stepmother's job? _____

11. Have you had any major physical illness in the last year?
    _____ (1=Yes 2=No)

12. Have you ever had any major physical illness? _____
    (1=Yes 2=No)

SUPPLEMENTARY BIOGRAPHICAL DATA SHEET

THE FOLLOWING BIOGRAPHICAL DATA TO BE COMPLETED BY THE EXAMINER

13. Subject's number of previous hospitalizations. _____

14. List the subject's presenting problems.

1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____

15. List the subject's current medications.

1. _____ 4. _____
2. _____ 5. _____
3. _____ 6. _____

16. List the subject's current diagnoses.

Axis I:	Axis II:
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____

17. List subject's I.Q. scores.

Indicate: WAIS-R: ___ WISC-R: ___ WISC-III: ___

Indicate: FSIQ: _____ VIQ: _____ PIQ: _____

Information:	_____	Picture Completion:	_____
Digit Span:	_____	Picture Arrangement:	_____
Vocabulary:	_____	Block Design:	_____
Arithmetic:	_____	Object Assembly:	_____
Comprehension:	_____	Coding/Digit Symbol	_____
Similarities:	_____	Symbol Search:	_____

Appendix D

Cover Letters and Consent Forms[3]

[3] Printed on front and back of paper.

April 10, 1994

Dear Placement/Referral Agency,

We are currently conducting a research project entitled "An investigation of the MMPI-A in adolescent inpatient and outpatient settings" at the Pines Residential Treatment Center. The information gained from this project will provide psychologists with a better understanding of the Minnesota Multiphasic Inventory - Adolescent (MMPI-A), a widely used personality assessment instrument. This knowledge will assist psychologists and clinicians worldwide in the treatment of adolescents.

The MMPI-A and other instruments used in this study are benign, objective measures of personality. Your child will respond to a number of true/false and fill in the blank questions presented in a paper and pencil format. The time to complete these instruments is expected to be between one to two hours. This will be all that is required from the child in this study.

The information received from the adolescent you represent will be identified by a four digit code number and remain confidential at all times. The child's responses will not be released to The Pines, unless you request otherwise, nor will the answers effect the child's course of treatment or diagnostic procedures. The information received from the adolescent you represent will be combined with national samples which will be examined and used to teach psychologists and other clinicians how to better help adolescents with psychological disorders.

The adolescent you represent has indicated a desire to participate in this project. If you do not have legal custody of this child, the Pines still requests your permission to allow this child to participate. However, the parent/legal guardians's decision will take priority unless you state that you prefer the child not participate. Please sign and return the enclosed consent form in the envelope provided so that the information gained from the child you represent may be used to help others.

Sincerely,

Eric A. Imhof, Caseworker
Doctoral Candidate

Enclosure(s).

Administrative and Business Offices
825 Crawford Parkway, Portsmouth, VA 23704
Crawford Campus, 301 Fort Lane ■ Brighton Campus, 1801 Portsmouth Boulevard
(804) 393-0061 ■ FAX: (804) 393-1029

FHC of Portsmouth

TREATMENT CENTER

August 30, 1993

Dear Parent/Legal Guardian,

We are currently conducting a research project entitled "An investigation of the MMPI-A in adolescent inpatient and outpatient settings" at the Pines Residential Treatment Center. The information gained from this project will provide psychologists with a better understanding of the Minnesota Multiphasic Inventory - Adolescent (MMPI-A), a widely used personality assessment test. This knowledge will assist psychologists and clinicians worldwide in the treatment of adolescents like your son or daughter.

The MMPI-A and other instruments used in this study are benign, objective measures of personality. Your child will respond to a number of true/false questions presented in a paper and pencil format. The time to complete these instruments is expected to be between one to two hours. This will be all that is required from your child in this study.

The information received from your son or daughter will be identified by a four digit code number and remain confidential at all times. Your child's responses will not be released to The Pines, unless you request otherwise, nor will his or her answers effect your child's course of treatment or diagnostic procedures. The information received from your child will be combined with national samples which will be examined and used to teach psychologists and other clinicians how to better help adolescents such as your son or daughter.

Please sign and return the enclosed consent form in the envelope provided so that the information gained from your child may be used to help others.

Sincerely,

Eric A. Imhof, Psychology Intern

Enclosure(s).

Behavioral Studies ■ 825 Crawford Parkway, Portsmouth, Virginia 23704 (804) 397-1754
Open Campus ■ 1801 Portsmouth Boulevard, Portsmouth, Virginia 23704 (804) 398-0300

EASTERN VIRGINIA MEDICAL SCHOOL
DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL SCIENCES
825 FAIRFAX AVENUE
HOFHEIMER HALL
NORFOLK, VIRGINIA 23507

(804) 446-5881

Eric A. Imhof
April 16, 1993

Dear Parent/Legal Guardian,

We are currently conducting a research project entitled "An investigation of the MMPI-A in adolescent inpatient and outpatient settings" at the Barry Robinson Center. The information gained from this project will provide psychologists with a better understanding of the Minnesota Multiphasic Inventory - Adolescent (MMPI-A), a widely used personality assessment test. This knowledge will assist psychologists and clinicians worldwide in the treatment of adolescents like your son or daughter.

The MMPI-A and other instruments used in this study are benign, objective measures of personality. Your child will respond to a number of true/false questions presented in a paper and pencil format. The time to complete these instruments is expected to be between one to two hours. This will be all that is required from your child in this study.

The information received from your son or daughter will be identified by a four digit code number and remain confidential at all times. Your child's responses will be shared with The Barry Robinson Center, and may provide valuable information which may assist in planning your child's course of treatment and diagnostic procedures. The information received from your child will be combined with national samples which will be examined and used to teach psychologists and other clinicians how to better help adolescents such as your son or daughter.

Please sign and return the enclosed consent form in the envelope provided so that the information gained from your child may be used to help others.

Sincerely,

Eric A. Imhof, Psychology Intern

Enclosure(s).

Subject Consent Form
An Investigation of the MMPI-A in
Adolescent Inpatient and Outpatient Settings

Investigators: Principle Investigator: Robert P. Archer, Ph.D., Department of Psychiatry and Behavioral Sciences, Eastern Virginia Medical School. Co-investigator: Eric A. Imhof, Doctoral Candidate, The Virginia Consortium for Professional Psychology.

Sponsor: The Norfolk Foundation.

Description: I understand that the purpose of this study is to evaluate how teenagers receiving psychological services respond to the true/false questions of the Minnesota Multiphasic Personality Inventory - Adolescent (MMPI-A), a widely used personality assessment test. I understand that the purpose of this study is to learn more about how the MMPI-A may be used with adolescents and the relationship of MMPI-A scores to adolescents' attitudes, feelings, and experiences before and during psychiatric treatment. I understand that my participation in this study will involve my answering a number of paper and pencil measures including the MMPI-A, a brief reading ability test, and questionnaires to provide information about background and past experiences. Furthermore, I understand that information regarding cognitive functioning, medication, diagnosis, presenting problems, and number of hospitalizations will be obtained from clinical records (i.e. my chart). Additionally, treatment staff members will be asked to provide brief ratings describing the nature and extent of my psychological problems.

Exclusionary Criteria: Persons below the age of 13, or above the age of 18, will be excluded from this study.

Risks and Benefits: I understand that no specific risks or benefits have been identified as being related to my participation in this study. I understand that my participation in this study does not substitute or alter the generally accepted course of treatment or diagnostic procedures for me. The benefit from participation in this study is the satisfaction of knowing that I am potentially helping other families who have adolescents who are experiencing, or will experience, significant emotional problems.

New Information: Any new information obtained during the course of this research that might affect my willingness to continue participation in this study will be provided to me.

Confidentiality: I understand that all data collected concerning me will remain strictly confidential and that no one except the Principle Investigator will see these data for research purposes. I understand that test data concerning me will be identified by a five digit identification number which protects my individual identity. I also understand that the information derived from

this study may be used in reports, presentations, and publications, but that I will not, and can not be individually identified in these projects. I understand that the information collected concerning me will be combined with similar data from a variety of national sites to create a large pool of information on the use of the MMPI-A with adolescent outpatients and inpatients.

Withdrawal Privilege: I understand that I am free to refuse to participate in this study, or to withdraw from this research at any time. My decision to do so will not adversely affect the care which is provided for me, or result in any penalty of loss of benefits to which I am entitled.

Voluntary Consent: I certify that I have read the preceding, or it has been read to me, and I understand its contents. If I have any further questions pertaining to this research, I understand that they will be answered by Dr. Robert Archer, whose telephone number is (804) 446-5881. A copy of this consent form will be given to me. My signature below indicates that I have freely agreed to participate in this study. I understand that participation in this study requires the consent of both myself and my parent/legal guardian.

_____ _____

Adolescent's Signature Date

_____

Print Name

Subject Consent Form
An Investigation of the MMPI-A in
Adolescent Inpatient and Outpatient Settings

Investigators: Principle Investigator: Robert P. Archer, Ph.D., Department of Psychiatry and Behavioral Sciences, Eastern Virginia Medical School. Co-investigator: Eric A. Imhof, Psychology Intern, The Virginia Consortium for Professional Psychology.

Sponsor: The Norfolk Foundation.

Description: I understand that the purpose of this study is to evaluate how teenagers receiving psychological services respond to the true/false questions of the Minnesota Multiphasic Personality Inventory - Adolescent (MMPI-A), a widely used personality assessment test. I understand that the purpose of this study is to learn more about how the MMPI-A may be used with adolescents and the relationship of MMPI-A scores to adolescents' attitudes, feelings, and experiences before and during psychiatric treatment. I understand that the teenager's participation in this study will involve his or her answering a number of paper and pencil measures including the MMPI-A, a brief reading ability test, and questionnaires to provide information about background and past experiences. Furthermore, I understand that information regarding cognitive functioning, medication, diagnosis, presenting problems, and number of hospitalizations will be obtained from clinical records (i.e. adolescent's chart). Additionally, treatment staff members will be asked to provide brief ratings describing the nature and extent of the child's psychological problems.

Exclusionary Criteria: Persons below the age of 13, or above the age of 18, will be excluded from this study.

Risks and Benefits: I understand that no specific risks or benefits have been identified as being related to the participation of the child in this study. I understand that our participation in this study does not substitute or alter the generally accepted course of treatment or diagnostic procedures for the child. The benefit from participation in this study is the satisfaction of knowing that we are potentially helping other families who have adolescents who are experiencing, or will experience, significant emotional problems.

New Information: Any new information obtained during the course of this research that might affect my willingness to continue participation in this study will be provided to me.

Confidentiality: I understand that all data collected concerning the child will remain strictly confidential and that no one except the principle investigator will see these data for research purposes. I understand that test data concerning the child will be identified by a four digit identification number

which protects the individual identity of both myself and the child. I also understand that the information derived from this study may be used in reports, presentations, and publications, but that I and the child will not, and can not be individually identified in these projects. I understand that the information collected concerning the child will be combined with similar data from a variety of national sites to create a large pool of information on the use of the MMPI-A with adolescent outpatients and inpatients.

Withdrawal Privilege: I understand that I and the child are free to refuse to participate in this study, or to withdraw from this research at any time. My decision to do so will not adversely affect the care which is provided for the child, or result in any penalty of loss of benefits to which I or the child are entitled.

Voluntary Consent: I certify that I have read the preceding, or it has been read to me, and I understand its contents. If I have any further questions pertaining to this research, I understand that they will be answered by Dr. Robert Archer, whose telephone number is (804) 446-5881. A copy of this consent form will be given to me. My signature below, if I am an adolescent, indicates that I have freely agreed to participate in this study. My signature below as parent or legal guardian, indicates that I have given my permission for the adolescent named below to participate in this study. I understand that participation in this study requires the consent of both the adolescent and the adolescent's parent/legal guardian.

_____ _____

Funding Source/Signature Date

_____

Print: Funding Source/Name

_____

Adolescent's Name

Subject Consent Form
An Investigation of the MMPI-A in
Adolescent Inpatient and Outpatient Settings

Investigators: Principle Investigator: Robert P. Archer, Ph.D., Department of Psychiatry and Behavioral Sciences, Eastern Virginia Medical School. Co-investigator: Eric A. Imhof, Psychology Intern, The Virginia Consortium for Professional Psychology.

Sponsor: The Norfolk Foundation.

Description: I understand that the purpose of this study is to evaluate how teenagers receiving psychological services respond to the true/false questions of the Minnesota Multiphasic Personality Inventory - Adolescent (MMPI-A), a widely used personality assessment test. I understand that the purpose of this study is to learn more about how the MMPI-A may be used with adolescents and the relationship of MMPI-A scores to adolescents' attitudes, feelings, and experiences before and during psychiatric treatment. I understand that my son's or daughter's participation in this study will involve his or her answering a number of paper and pencil measures including the MMPI-A, a brief reading ability test, and questionnaires to provide information about background and past experiences. Furthermore, I understand that information regarding cognitive functioning, medication, diagnosis, presenting problems, and number of hospitalizations will be obtained from clinical records (i.e. adolescent's chart). Additionally, treatment staff members will be asked to provide brief ratings describing the nature and extent of my child's psychological problems.

Exclusionary Criteria: Persons below the age of 13, or above the age of 18, will be excluded from this study.

Risks and Benefits: I understand that no specific risks or benefits have been identified as being related to my participation, or the participation of my child, in this study. I understand that our participation in this study does not substitute or alter the generally accepted course of treatment or diagnostic procedures for my child. The benefit from participation in this study is the satisfaction of knowing that we are potentially helping other families who have adolescents who are experiencing, or will experience, significant emotional problems.

New Information: Any new information obtained during the course of this research that might affect my willingness to continue participation in this study will be provided to me.

Confidentiality: I understand that all data collected concerning my child will remain strictly confidential and that no one except the Principle Investigator will see these data for research purposes. I understand that test data concerning my child will

be identified by a five digit identification number which protects the individual identity of both myself and my child. I also understand that the information derived from this study may be used in reports, presentations, and publications, but that I and my child will not, and can not be individually identified in these projects. I understand that the information collected concerning my child will be combined with similar data from a variety of national sites to create a large pool of information on the use of the MMPI-A with adolescent outpatients and inpatients.

Withdrawal Privilege: I understand that I and my child are free to refuse to participate in this study, or to withdraw from this research at any time. My decision to do so will not adversely affect the care which is provided for my child, or result in any penalty of loss of benefits to which I or my child are entitled.

Voluntary Consent: I certify that I have read the preceding, or it has been read to me, and I understand its contents. If I have any further questions pertaining to this research, I understand that they will be answered by Dr. Robert Archer, whose telephone number is (804) 446-5881. A copy of this consent form will be given to me. My signature below, if I am an adolescent, indicates that I have freely agreed to participate in this study. My signature below as parent or legal guardian, indicates that I have given my permission for the adolescent named below to participate in this study. I understand that participation in this study requires the consent of both the adolescent and the adolescent's parent/legal guardian.

_____ _____

Parent/Legal Guardian Signature Date

_____

Print Name

_____

Adolescent's Name

Appendix E

Internal Review Board Approval Verification

358 Mowbray Arch
Post Office Box 1980
Norfolk, Virginia 23501
EASTERN VIRGINIA MEDICAL SCHOOL
358 Mowbray Arch
Post Office Box 1980
Norfolk, Virginia 23501

OFFICE OF RESEARCH
AND ACADEMIC PLANNING

TELEPHONE (804) 446-6010

May 12, 1992

Robert P. Archer, Ph.D.
Department of Psychiatry and Behavioral Sciences
Eastern Virginia Medical School
Post Office Box 1980
Norfolk, Virginia 23501

Dear Dr. Archer:

I have reviewed your request to amend your study "An Evaluation of the MMPI-A with Special Focus on the Immaturity Scale and the Items-Difficult and Items-Easy Subscales", (IRB #04-02-91-0094) to include a dissertation project by Mr. Eric Imhof. The amendment is approved. You should add Mr. Imhof as a co-investigator to your study and revised your consent form to reflect this change and forward a copy to be included in your file.

Thank you for your continued cooperation with the Institutional Review Board.

Sincerely,

Frank P. Schince, M.D.
Chairman
Institutional Review Board

FPS/bcc

September 24, 1992

Eric Imhof
The Phoenix Program
825 Crawford Parkway
Portsmouth, Virginia 23704

RE: Correlates of the MMPI-A (IMM) Scale in an Adolescent Psychiatric Population

Dear Mr. Imhof:

The Institutional Review Board met on 9/21/92 and reviewed your proposal. The proposal was approved to use Pines' residents as subjects with the following stipulations:

1. Three separate subject consent forms must be implemented. One consent form for adolescents, one for parents or guardians, and one for agencies. Send copies to Dr. Maleski for final review before starting.

2. With regard to obtaining consent from agencies, you must contact Dr. Pat Ryba for a list of agencies who might be willing to participate (it is more likely that residents who are placed by Local Education Agencies will participate as typically the parent/guardian has custody). Dr. Ryba also has a list of agencies who will not allow their children to participate in studies (this list includes the District of Columbia). Dr. Ryba's list is not exhaustive, however, and written approval must be obtained before any participation begins.

3. Dr. Feldberg must supervise and advise you as to the appropriate people to obtain consent from for each adolescent. Before testing any resident, you must have Dr. Feldberg check and initial the consent forms to ensure that all appropriate consents have been obtained.

Behavioral Studies ■ 825 Crawford Parkway, Portsmouth, Virginia 23704 (804) 397-1754
Open Campus ■ 1501 Portsmouth Boulevard, Portsmouth, Virginia 23704 (804) 398-0300

Many residents have funding from multiple agencies (e.g. court, social services, schools) and for these cases consent must be obtained from all agencies involved.

4. Questions #14 and #15 regarding medications and diagnosis need to be removed from the questionnaire as residents would not know the answers to these questions. Instead, this information will have to be taken from the chart. Because of this, under "Description" on the consent form the following sentence must be added: "Information concerning diagnosis and medication will be obtained from clinical records (i.e. resident's chart)".

5. The task of obtaining consent forms is yours and FHC staff time is not to go towards assisting you in this endeavor.

If you have any question regarding these matters, please contact me at 398-0363. Dr. Ryba may also be reached at the same telephone number.

Sincerely yours,

E. F. Maleski/sdr

Eugene F. Maleski, Ph.D., Chairman
Institutional Review Board

cc: Dr. Alan Feldberg
Debbie Goldstein
Phil Barberi
Ed Irby
Dr. Eugene Maleski

EFM:sdr
34AJ687.LTR

AUTOBIOGRAPHICAL STATEMENT

Eric Albert Imhof was born in Winchester, Virginia on July 27, 1966. He received his Bachelor of Science degree in Psychology from James Madison University in May of 1989. He began his doctoral studies in Clinical Psychology at the Virginia Consortium for Professional Psychology in Norfolk, Virginia during the Fall of 1989. Mr. Imhof completed his clinical internship in psychology at the Eastern Virginia Graduate School of Medicine in 1993.

In 1991, Mr. Imhof co-authored "Psychological Test Usage with Adolescent Clients: 1990 Survey Findings" with Robert P. Archer, Mark Maruish, and Christopher Piotrowski in the Journal of Personality Assessment. In 1993, Mr. Imhof co-authored "Time Requirements of Psychological Testing: A Survey of Practitioners" with Robert P. Archer and J. D. Ball in Journal of Personality Assessment. Mr. Imhof also co-presented this research with Dr. Ball at the 1993 annual meeting of the Virginia Psychological Association.

Mr. Imhof is currently employed by First Hospital Corporation at the Pines Residential Treatment Center - Behavioral Studies Program as an individual and family therapist, and psychometrician. He is currently a member of the American Psychological Association and the Society for Personality Assessment. He plans to continue his

therapeutic and assessment endeavors with adolescents as well as explore additional research and teaching opportunities.

In his leisure time, Mr. Imhof is an avid SCUBA diver, skier, and competitive sailor. Mr. Imhof can frequently be seen in Hampton Roads regattas aboard the racing yacht *About Time*.