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A construct validity study and comparison of four measures of Eriksonian ego identity development

Charles E. Burt
College of William & Mary - Arts & Sciences

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APPROVAL SHEET

This thesis is submitted in partial fulfillment of the requirements for the degree of Master of Arts

[Signature]
Author

Approved, November 1982

Neill Watson, Ph.D.
Virgil McKenna, Ph.D.
Deborah Ventis, Ph.D.
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ABSTRACT

This research uses correlational and multiple regression approaches to explore the convergent, discriminant, and predictive aspects of the construct validities of four measures (three paper-and-pencil measures and one interview measure) of Eriksonian ego identity development for use with females: Constantinople's (1969) Inventory of Psychosocial Development, Dignan's (1964) Ego Identity Scale, Marcia's (1966) Identity Status Interview, and Tan, et. al's, (1977) Ego Identity Scale. Operationalizations of Jahoda's (1950) criteria of psychological health, cited by Erikson (p. 92, 1968), were used as criterion measures. Rotter's (1966) I-E scale was used to measure "active mastery of the world". An accuracy of social perception task, using Cronbach's (1955) component score analysis, was used to measure accuracy of perception of the world and oneself. "Unity of Self" was operationalized as the disparity between real and ideal self descriptions.

The three paper-and-pencil measures showed a high degree of convergence and discriminance, and were strong predictors of unity of self and mastery, but not of accuracy of social perception. The ISI was a relatively weak predictor of the criterion measures, although foreclosures in the area of occupation exhibited greater unity of self and achievers in the same area showed greater internality and were more accurate perceivers than others based on Cronbach's differential accuracy score. Perhaps the major finding of this study is that the paper-and-pencil identity scales used tend to relate more strongly with foreclosure than with the more advanced status of identity development on the ISI, identity achievement. This suggests that the paper-and-pencil identity scales measure different aspects of identity development than the ISI measures. On the other hand, the lack of appropriate convergence between the scales and the interview, and the strong support obtained for the paper-and-pencil scales compared to the ISI can be seen as arguing against the validity of the ISI for women and for the validity of the paper-and-pencil identity scales.
A CONSTRUCT VALIDATION AND COMPARISON

OF FOUR MEASURES OF ERIKSON'S CONCEPT

OF EGO IDENTITY DEVELOPMENT
INTRODUCTION

This paper presents a construct validity study and comparison of four measures of Eriksonian ego identity development for the use of these measures with females. Evidence of construct validity is important for both theory and the psychological measure since it provides support for our belief that the psychological instrument measures what it is intended to and for our belief that the theoretical relationships posited to exist among phenomena do hold (Cronbach and Meehl, 1955; Loevinger, 1957; Wiggins, 1973). This study approaches the establishment of construct validity using two models. The first is Campbell and Fiske's (1959) convergent-discriminant model, although a full multitrait-multimethod matrix has not been attempted. The second is based on Campbell's (1960) differentiation of construct validity into two subtypes, trait and nomological, and his argument for the importance of nomological validity.

Campbell and Fiske (1959) proposed a model for construct validation that rested on the principle that traits and methods of measurement each have variance associated with them. In this model, a measurement device may be
considered to be a "trait-method unit": part of the variance measured by an instrument is due to the variance among individuals on some underlying trait and part is due to the differences in the ways subjects respond to particular approaches to measurement (e.g., printed questionnaires, verbal questioning, observation). They stressed the need for demonstrating both convergent and discriminant validity within this framework. In order to show the convergent validity of a construct, different measures and different methods for measuring that construct must correlate. For example, a behavioral observation method and a paper and-pencil method for measuring the same trait should tend to agree. The more similar the measures are in method, the greater they should correlate. Also, the two measures of the same concept should correlate more highly with each other than with measures that are not or are less conceptually related. In general, measures should be more highly correlated with each other when they share both trait and method, less correlated when sharing only trait or only method, and least correlated when sharing neither.

Nomological validity, according to Campbell (p. 149, 1960), is one type of construct validity. It is based on theoretically posited relationships between different constructs. Such relationships form a conceptual or "nomological" network. Based on such theoretical relationships, we believe that people with certain characteristics (traits) or behavior patterns will exhibit certain other characteristics or behavior patterns. Such theoretical networks allow us to hypothesize that a measure
of one trait or behavior pattern will predict the results of a measure of the related trait or behavior pattern. The empirical demonstration of the ability to predict one trait's measure using another trait's measure supports not only our beliefs about the ties between the traits (or behaviors) but also our beliefs about the traits (or the significances of the behaviors) themselves.

ERIKSON'S THEORY OF EGO IDENTITY DEVELOPMENT

Erikson's (1963, 1968) epigenetic theory of the psychosocial development of the ego has provided a theoretical framework in which to consider both ideal and actual psychological development over the life-span. According to Erikson's theory, a person may proceed through eight stages of development (see Table 1). At each stage, he or she undergoes a "crisis" concerning an aspect of his or her being that is particularly salient, and the crisis must be resolved positively in order to facilitate the positive resolution of following stages. A negative resolution might be a flight from the issues or a continual struggle with the self-doubts characteristic of a particular stage. A positive resolution would involve the assertion of the self and the establishment or maintenance of self-esteem.

Erikson's theory may also be seen as postulating developmental criteria for psychological health. Failure
TABLE 1. ERIKSON'S EIGHT STAGES OF EPIGENETIC DEVELOPMENT

<table>
<thead>
<tr>
<th>Stage Name</th>
<th>Approximate Age Range</th>
<th>Consequences of Positive and Negative Resolutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Basic Trust Versus Mistrust</td>
<td>0 to 1 or 2</td>
<td>Negative resolution may result in time confusion and autistic isolation. Positive resolution allows recognition of and trust in others.</td>
</tr>
<tr>
<td>II. Autonomy Versus Shame and Doubt</td>
<td>1 to 3 or 4</td>
<td>Positive resolution requires a sense of self-control. A negative resolution involves the handicapping of self-control by a sense of shame or self-doubt.</td>
</tr>
<tr>
<td>III. Initiative Versus Guilt</td>
<td>3 to 5 or 6</td>
<td>Positive resolution involves role experimentation, a sense freedom to explore, act intrusively. Negative resolution results from the inhibition of initiative by feelings of guilt.</td>
</tr>
<tr>
<td>IV. Industry Versus Inferiority</td>
<td>5 to 12 or 13</td>
<td>Positive resolution involves the development of a sense of being able to make and do well. Negative resolution reflects an estrangement from oneself and one's tasks.</td>
</tr>
</tbody>
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TABLE 1. Continued

<table>
<thead>
<tr>
<th>Stage Name</th>
<th>Approximate Age Range</th>
<th>Consequences of Positive and Negative Resolutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. Identity</td>
<td>14 to 18 or 20</td>
<td>A sense of who one is, what one plans to do, and what one believes are the result of a positive outcome. A negative resolution entails the lack of this self-knowledge and may be associated with aimlessness and possible psychosis.</td>
</tr>
<tr>
<td>Versus Identity Diffusion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VI. Intimacy</td>
<td>18 to 25</td>
<td>In this stage, the individual develops the ability to relate to another closely, with self-abandonment. A tendency to distantiate oneself from others is characteristic of a negative resolution.</td>
</tr>
<tr>
<td>Versus Isolation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VII. Generativity</td>
<td>Adult-hood</td>
<td>Positive resolution involves becoming invested in establishing and guiding the next generation. A negative resolution involves a sense of stagnation and boredom.</td>
</tr>
<tr>
<td>Versus Stagnation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIII. Integrity</td>
<td>Old Age or approach of death</td>
<td>A positive outcome is the acceptance of one's life and the people who were significant to one in that life. The negative resolution is reflected in a sense of disgust and despair concerning one's lot.</td>
</tr>
<tr>
<td>Versus Despair</td>
<td></td>
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or partial failure to resolve the issues of any particular stage may be seen as the relative lack of psychological health to the extent that a negative resolution prevents further, age-appropriate growth through subsequent stages. For example, failure to establish a sense of trust at the first stage of development prevents the development of autonomy and self-certainty (stage two), initiative (stage three), and industry (stage four). Furthermore, failure to achieve a sense of trust may be associated with severe mental illness later on.

In a similar manner, the resolution of the fifth stage, "Identity versus Identity Diffusion", not only marks the individual's transition from adolescence to adulthood, it also marks the increasing fulfillment of certain criteria of psychosocial health. In this regard, Erikson cites Marie Jahoda's (1950) definition of mental health as a particularly appropriate formulation of the healthy adult personality: "a healthy personality actively masters his environment, shows a certain unity of personality, and is able to perceive the world and himself correctly" (Erikson, 1968, p. 92). Erikson says that childhood may be defined as the initial absence and the gradual development of these features of positive mental health in complex steps of increasing differentiation.

The fifth stage is the stage at which the adolescent must make the transition into the adult world and assume adult roles. Depending upon previous stage resolutions and the social and economic environment, the adolescent goes through the crises of breaking away from family values and dependencies, and establishing his or her own values and
becoming self-sufficient. This involves, ideally, the willful choosing of a desired occupation, the working out of religious and political ideologies, the synthesis of different perceptions of the self built up over the years of growth, the establishment of a sense of continuity in one's life, and the establishment of a type of psychosocial reciprocity that is based upon a reconciliation of one's self-definition and the definition of one held by others, and upon a sharing of one's essential character with others (Bourne, 1978a).

"Identity diffusion" is a state of confusion of the individual concerning who he or she is, involving the lack of resolution of different perceptions of the self; the lack of clear goals or beliefs about the world; and the inability to be close to others because being close threatens the individual's weak sense of self. In addition, diffused individuals may lack the resources that would have resulted from the successful resolution of earlier stages: trust, a sense of autonomy, the ability to take initiative without self-conscious guilt, and a sense of capability bestowed by the successful accomplishment of tasks.

Moratorium is a period during which the individual tests out different identifications (with ideals, parents, cultural heroes and others) that had been developed over growth, leading to the introjection or repudiation of different identifications and self-perceptions (Erikson, 1968, p. 159). The individual in moratorium actively struggles with such issues as who he or she is, what he or she believes in and what to do with his or her life.
Erikson points out that moratorium is a period granted or allowed by society for the adolescent to move toward the assumption of adult roles without immediately taking on adult obligations and responsibilities (p. 157).

With identity achievement, the issues of identity formation fade. The individual has a secure sense of self that allows the formation of unself-conscious intimate relationships. The selection of an occupation and the development of a social ideology (often based on religious or political beliefs) allow the individual to interact with society and pursue goals in a consistent manner.

**EGO IDENTITY DEVELOPMENT RESEARCH**

Erikson's theory of identity development provides a framework for the clinician or the developmental psychologist who wants to evaluate the appropriate passage through adolescence and other stages of life. However, the value of such a theory is increased by evidence that the phenomena can be differentiated in the ways suggested by the constructs and that the constructs are related in the ways suggested by the theory. Early researchers (Bronson, 1959; Block, 1961; and Gruen, 1960) considered such dimensions of identity development as the development of a consistent sense of self, the level of tension or anxiety, the degree of role variability, and self-esteem. The use of the Q-sort was the most popular approach to measurement
of identity and yielded a unidimensional score. More recent researchers have attempted to address more aspects of identity development. The measures that these researchers developed were typically self-report questionnaires. Some of these were global scales (Dignan, 1965; Tan, Kendis, Fine, and Porac, 1977), while others (Rasmussen, 1964; Constantinople, 1969) provided subscales meant to measure development on five or more of Erikson's stages. Marcia's (1966) identity status interview departs from the paper-and-pencil format. This interview classifies subjects into four statuses with respect to occupational choice and ideological belief, based upon whether they have gone through a period of crisis or not and whether they have come to a commitment or not.

These researchers take a variety of different approaches to the problem of the assessment of identity development, both in method and in the particular constructs that they have chosen from Erikson's theory. While the measures might be expected to "converge" in accordance with Campbell and Fiske's (1959) model of validity, very little research has been undertaken to compare the different measures (Marcia, 1980) and to assess their validity as a group. Such a study is presented here. Four assessment instruments were chosen for comparison: Marcia's (1966) Identity Status Interview (ISI), Constantinople's (1969) Inventory of Psychosocial Development (IPD), Dignan's (1965) Ego Identity Scale (EISD), and Tan, et al.,'s, (1977) Ego Identity Scale (EIST). These measures will be described next, followed by the presentation of the criteria, and their rationale and descriptions.
MARCIA'S IDENTITY STATUS INTERVIEW (ISI)

The most widely used measure of ego identity development is the ISI, developed by James Marcia (1965, 1966). Based on Erikson's theory, Marcia proposed that the individual can be placed in one of four statuses depending upon whether he or she has experienced a "crisis", or period of questioning concerning occupational choice and ideology, and whether he or she is committed to an occupational choice and an ideology. If a person has not committed him- or herself to an occupation or an ideology, and is not in a period of questioning concerning these areas, the person is considered to be in diffusion. If the person is committed to an occupation or to some ideological position, but has not arrived at such a commitment after a period of questioning, he or she is considered to be in the foreclosed status in the area(s) for which this unquestioned commitment is true. If the person is not committed in one or both areas, but is in a period of questioning, he or she is considered to be in the moratorium status. Finally, if the person has both gone through a period of questioning and become committed to an occupation or an ideological position, he or she is considered to be in the achievement status in one or both areas. Based on both Erikson's theory and ISI research, individuals progress through these statuses (Marcia, 1976;
Meilman, 1979; Orlofsky, Marcia, & Lesser, 1973; Waterman, 1982; Waterman, Buebel, & Waterman, 1970; Waterman, Geary, & Waterman, 1974; Waterman & Goldman, 1976; Waterman & Waterman, 1971). The young adolescent is either in the diffusion or foreclosed status based on his or her belief in and commitment to the positions taken by others, particularly the parents. Physical maturation, the development of competencies, and the demands of society push the adolescent towards selecting adult roles and developing an ideological position with respect to the adult society that he or she is preparing to enter. While some individuals may settle for the roles and beliefs that their parents and others have offered them, others go through a period of active questioning and would thus be considered to be in the moratorium status. Once these questions have been resolved, through commitment to occupational goals and ideological positions, the person is considered to be in the achievement status and is prepared to resolve the next stage's issues (Intimacy vs. Isolation).

In order to determine which status an individual is in, Marcia developed a semistructured interview in which the interviewer asks questions to see where the interviewee is on the bipolar dimensions of crisis and commitment with respect to occupational choice, and religious and political beliefs. The subject's positions with respect to religion and politics are combined to form the overall ideology area status. Originally, the interview included questions concerning only occupation, religion, and politics, and the subject population was almost exclusively male. However,
Marcia and Friedman (1970) and Schenkel and Marcia (1972) expanded the ISI for use with females by adding questions concerning "attitudes toward premarital sex". These questions allowed researchers to explore Erikson's (1968) and Douvan and Adelson's (1966) suggestion that the development of the woman's identity focuses on sexual and interpersonal issues rather than on occupational achievement, as men's identities appear to. The ISI, then, includes questions concerning three areas: occupational choice, ideological beliefs, and attitudes toward premarital sex. The questions used in the interview are included in Appendix A. Different versions of the ISI have been developed to assess older, married populations, but these are not of immediate concern here (see Waterman, 1982).

The interview is scored first for each area, then the rater often combines area statuses to yield an overall status. While identity researchers have developed a set of rules for establishing an overall status (Waterman, personal communication), the present study will use statuses for each of these areas. The use of area statuses allows the importances of the different areas to be considered and reduces the influence of clinical judgement on the resulting status assignments.

Researchers have explored the relationships between the ISI statuses and a variety of other personality constructs, interpersonal behaviors, cognitive dimensions, and developmental characteristics. This research will be reviewed here. Since much of the original research validating the ISI used male subjects and because the
findings for males and females are often different, the findings are presented to highlight the differences in the results.

Identity Status as an Adaptive Achievement

In his review of ego identity research, Bourne suggests that one aspect of Erikson's concept of identity development is that it represents an "adaptive achievement" (1978a, p. 225). One type of evidence suggesting the adaptiveness of identity development is evidence that it is associated with increasing abilities to perform well on the tasks chosen or encountered. Thus, while researchers have consistently found no significant differences in intelligence or in achievement test scores among the statuses for either males or females (Marcia, 1966; Marcia and Friedman, 1970; Cross and Allen, 1970; St. Clair and Day, 1979), St. Clair and Day found that high school female diffusers got significantly lower grade-point averages (GPA's) than the other statuses, and Cross and Allen found that achievement status college males obtained significantly higher GPAs than the other statuses. In addition, Marcia and Friedman's (1970) college female achievers had majors that had been rated as being significantly harder than the majors of both moratoriums and diffusers. However, their foreclosure females had majors nearly as difficult as the achievers had.

While the foreclosed and achievement statuses may be seen as adaptations to either old or new goals, the
moratorium status may be seen as a period during which the person is not fully adapted to his or her world. Accordingly, Waterman and Waterman (1971, 1972) found that students in moratorium were the least satisfied with college and were the most likely to change. Foreclosed students were the most satisfied.

**Personality Factors**

Several personality factors are theoretically relevant to identity development. One is authoritarianism: foreclosed individuals, who ascribe to the values held by their parents, should show a greater acceptance of external authority, while moratorium individuals, who are often seen as questioning the values and goals stressed by their parents, should be less willing to accept authority-based positions (Marcia, 1966). Achievers might be expected to be less authoritarian than foreclosures since they have questioned authority-based positions in their own lives and have opted to make their own decisions rather than rely on authority. The foreclosed individual's adherence to authoritarian positions can be seen as a defensive stance that relieves him or her from having to question existing beliefs and courses of action, or from considering alternatives, actions that might lead to the perceived risk of loss of parental approval. In accordance with this prediction, researchers have found that both male and female foreclosures score highest on the California F scale (Marcia, 1966; Marcia and Friedman, 1970; Matteson, 1977; Schenkel and Marcia, 1972). In addition, these researchers
typically found that moratorium subjects scored lowest.

Locus of control, already mentioned briefly, is another personality construct that is relevant to identity status. Locus of control refers to the perception that the individual has of his or her ability to control outcomes or reinforcers (Rotter, 1966). Research suggests that the perception of control is associated with the degree and persistence of efforts to influence outcomes and with the successes of those efforts (Lefcourt, 1976). Because of locus of control has implications for self-reliance, locus of control scores have been used as evidence of autonomy (Erikson’s second stage issue) (Waterman, Buebel, and Waterman, 1970). In general, it should be related to the varying levels of control exerted by individuals in the different identity statuses over their lives. Both diffusers and foreclosures can be hypothesized as taking very little control over their lives, leaving their direction to external factors. Individuals in moratorium may be seen as attempting to assume control over their own lives and as developing internal locuses of control. Achievers may be seen as having assumed control over their lives and as perceiving themselves as having greater control of their lives than those in the other statuses perceive themselves as having, especially those in diffusion and foreclosure. Waterman, Buebel, and Waterman (1970) found that higher status male subjects (in achievement and moratorium) obtained more internal scores on Rotter’s (1966) Internal-External Locus of Control (I-E) scale than lower status males (in foreclosure or diffusion). However, the results have been somewhat
inconsistent, with respect to females. Adams and Shea (1979) and Howard (1975) have found that female achievers and foreclosures have obtained the most internal IE scores, whereas moratorium females have less internal scores. Adams and Shea found the same pattern for both males and females in which achievers and foreclosures achieved the most internal scores. Matteson (1977) failed to find any relationship between locus of control and identity status using a revised version of Rotter's (1966) scale and a Danish population. Adams and Shea found that male diffusers were more likely than males in the other statuses to believe that "powerful others" controlled their fates, and that both male and female achievers and foreclosures saw chance as a relatively small factor in the determination of outcomes, whereas diffusers tended to believe that chance played a relatively large role. Neuber and Genthner (1977) found that both male and female moratorium and achievement subjects took greater responsibility for their own lives than did diffusers.

Another personality construct often related to the identity statuses is self-esteem. A person's degree of self-esteem should be positively related to the degree to which that person feels satisfied with him or herself. Marcia (1966) found no significant differences between the statuses on DeCharms and Rosenbaum's Self-Esteem Questionnaire (SEQ, DeCharms & Rosenbaum, 1960) but subsequently found (Marcia, 1967) that foreclosed and diffused college males were more likely to change their self-evaluations positively or negatively in response to external feedback. Marcia and Friedman's (1970) study with
female college students yielded the surprising finding that female achievers had the lowest scores on the SEQ, while the foreclosures had the highest. On the other hand, Schenkel and Marcia (1972) found that their achievement-status college female subjects had the highest scores on the SEQ regardless of the area of the ISI evaluated, although only the attitudes toward premarital sex status yielded a significant relationship. Both studies found that moratorium and diffusion subjects tended to obtain low self-esteem scores. Orlofsky (1977) failed to find any relationships between self-esteem and the statuses for either sex, but his results are not directly comparable to the results obtained by the other researchers since he used a Likert-type rating scale on which his subjects compared themselves to the "average other" on a variety of dimensions.

Researchers have also assessed differences among the statuses in anxiety. Marcia (1967) and most other researchers have found that moratorium subjects have the highest anxiety scores whereas foreclosures have the lowest, which Marcia (1980) suggests may be because foreclosures are more defensive. Marcia and Friedman (1970) and Schenkel and Marcia (1972) found that both achievement and foreclosure status college females obtained low scores on anxiety measures, while both moratorium and diffusion females obtained high anxiety scores. Cross and Allen (1970) found no differences among the identity statuses for males on the Mood Affect Adjective Checklist's hostility, depression, and anxiety subscales (Zuckerman & Lubin, 1965).
The Applicability of the ISI and Erikson's Epigenetic Theory to Women

Both Erikson's theory of identity development and Marcia's ISI appear to have been originally conceived for males. Erikson devoted little space to considering the applicability of the concept to women and how they might be different from men prior to *Identity: Youth and Crisis* (1968), and his analytic-biographical books dealt solely with men. Marcia developed the original ISI in 1966, and the ISI was used almost exclusively with males until 1970.

In his discussion of identity for women, Erikson (1968) suggested that female psychological development focuses around the "Inner Space" and what is to be accepted into that space, while male development focuses on dealing with the external world. He only briefly discusses the nature of identity for the female. In answer to the question of whether a woman can "have an identity" prior to marrying and making a home, he said that he felt that: "Much of a young woman's identity is already defined in her kind of attractiveness and in the selective nature of her search for the man (or men) by whom she wishes to be sought. This, of course, is only the psychosexual aspect of her identity, and she may go far in postponing its closure while training herself as a worker and a citizen and while developing as a person within the role possibilities of her time" (p. 283). However, he continues: "A true moratorium must have a term and a conclusion: womanhood arrives when
attractiveness and experience have succeeded in selecting what is to be admitted to the welcome of the inner space 'for keeps'" (p. 283). In his discourse, Erikson stops short of stating that that which is admitted must involve traditional sexuality and childbearing: his discussion implies that activities stressing the roles of caring for, nurturing, and interpersonal understanding might be substituted. However, his discussion strongly suggests that the normal resolution to this moratorium (presumably in the psychosexual area only as opposed to occupational and ideological areas) involves the establishment of an acceptable, long-term relationship with some other, probably a man, in which the woman can fulfill the biologically preordained role of reproduction.

Erikson does not trace the importance of the inner space within the framework of his epigenetic model, and the reader may be left wondering whether the stages of trust, autonomy, initiative, industry, and identity have the same meaning for women as for men. Perhaps the clearest implication of his discussion is that the identity and intimacy stages are somehow combined or even potentially reversed in order for women. This possibility is also proposed by Douvan and Adelson (1966).

In attempting to accommodate the ISI for the study of identity development in women, Marcia and Friedman (1970) added questions concerning attitudes toward premarital sex. These questions are aimed at assessing the standards by which the female determines what is to be admitted to her Inner Space, and hence, indirectly assess how she has incorporated certain biological givens into her identity.
However, the research using this modified interview with women has shown that the mere addition of questions concerning this area of identity has not yielded as orderly a picture of female identity development as was obtained with males. Marcia (1980) and Waterman (1982) suggest that foreclosure and achievement status females are more similar to each other on many personality variables than they are to diffusion and moratorium status females, reversing the pattern found with males, where achievement and moratorium statuses have the most in common on the one hand and foreclosure, and diffusion are most similar on the other. Thus, their research provides no clear support for the superiority of the theoretically advanced statuses of moratorium and achievement for females.

A number of researchers have attempted to assess the importance of the questions concerning attitudes toward premarital sex. Poppen (1974), Matteson (1977), Orlofsky (1978), and Waterman and Nevid (1977) compared the relative importance of the sex questions for males and females and found that female college students were much more likely to have attained achievement in the area of sex than in the other areas, while males were more likely to be foreclosed in sex than in the other areas. Based on these differential frequencies of achievement, these researchers argued that the area of sex was more important to identity development among females. However, mere frequency of "achievers" in the area of sex does not directly support the value of "achievement" in this area to the identity of women. Status in this area must also predict certain consequences of identity development. Schenkel and Marcia
(1972) and Matteson (1977) compared the importance of the sex area with the other areas in the prediction of a variety of criteria. Schenkel and Marcia found that occupation, religion, and political areas (ORP) predicted, as a group, authoritarianism but not anxiety and self-esteem for females. The sex area questions predicted authoritarianism, anxiety, and self-esteem. In general, they found that foreclosures were highest in authoritarianism and lowest in anxiety, but they found that the sex area achievement status females had the highest scores on self-esteem. This result is the opposite from Marcia and Friedman's (1970) finding that achievement area females had the lowest self-esteem scores. This disagreement may reflect the use of an overall or composite score to determine achievers in Marcia and Friedman's work, rather than just the sex area status. Matteson compared males and females on the importance of sex and other area questions. Surprisingly, Matteson found that, in his Danish population, his sex-role status variables formed the most powerful predictors for males but not for females. However, his sex-role questions are not the same as the attitudes toward premarital sex questions used by Marcia, Schenkel, Friedman, and others. In summary, questions concerning attitudes toward premarital sex appear to have made a contribution to the predictive powers of the ISI, but the evidence that this area is more important for determining the woman's identity status has not been shown. The relationship between the statuses in this area and such criterion measures as self-esteem is not clear. There is even a hint that questions concerning sexuality can be more
significant for males than females. Further confusion is added to the picture by a methodological problem noted by Raphael (1977): Marcia and Friedman (1970) and Schenkel and Marcia (1972) used junior and senior female college students, whereas the studies using males often used younger college students. This difference in ages between male and female samples found among some of the studies may have influenced the characteristics of the subjects in the different statuses (i.e., a subject going through moratorium earlier in his or her college career may be qualitatively different from one going through moratorium later in college).

The applicability of the ISI and Erikson's epigenetic theory to women goes beyond the validity of the questions concerning attitudes toward premarital sex. Marcia (1980) and Waterman (1982), among others, have suggested that foreclosure may be adaptive for women. Supporting this conclusion is evidence that both achievement and foreclosure status females have majors that were rated as being more difficult (Marcia & Friedman, 1970), are more field independent (Schenkel, 1975), are less conforming to social pressure (Toder and Marcia, 1972), have more internal locus of controls (Howard, 1975; Miller, cited in Waterman & Whitbourne, 1981), and obtain higher scores on Constantinople's IPD than moratorium and diffusion females (Miller, cited in Waterman & Whitbourne, 1981). In addition, Marcia and Friedman (1970) found that achievement women had the highest anxiety scores while foreclosure women had the lowest. Orlofsky (1978), relating need for achievement, fear of success, and ISI status, found that
while achievement and moratorium status males were low on a fear of success measure, females in these statuses were high relative to the other statuses. On the other hand, Orlofsky argues that his results show that moratorium status females are more similar to achievement status females and that the foreclosure females are more similar to the diffusion females on the variables of need for achievement and fear of success. Marcia (1976, 1980) argues that while research with males suggests that the "chronological proximity to Identity Achievement" (statuses closer to achievement) is the most important factor for grouping males, stability or commitment (being in either of the committed statuses - foreclosure or achievement) is the most important factor for females (Marcia, 1980, p. 174). Marcia (1980) suggests that the confused findings concerning the adaptiveness of different statuses for females relative to males may reflect the confused status of women in our culture.

Marcia's suggestion that foreclosure may be an adaptive status for females carries with it the implication that stereotypically feminine sex-role orientations might be adaptive for women. Orlofsky (1977) provides some support for this possibility with his finding that foreclosed females are most likely to be sex-typed as feminine on Bem's (1974) Sex Role Inventory. His achievement-area females were either androgynous or masculine sex-typed. His diffusion status subjects, male and female, tended to have undifferentiated sex-role orientations. Among his subjects, Orlofsky found that feminine sex-typing was correlated with low self-esteem for both sexes.
In conclusion, the mixed findings for women on the different statuses of the ISI raises questions concerning the validity of the ISI and Erikson's epigenetic theory for women, and the mixed results associated with the attitudes toward premarital sex area statuses leave the value of these interview questions in some doubt. As Marcia, Waterman, and other researchers suggest, the mixed findings may be due to the turmoil concerning the status of women in our society. Possibly, women's responses to occupational, ideological, and sexuality area questions have changed in a social climate in which women have experimented with different positions in these areas. Still, the issues of women's roles have been debated extensively throughout the period in which ISI research has been performed, and it is not clear that the positions advocated have changed dramatically enough on a society level to explain the differences found in the results of the studies. Hence, the following questions remain: Is the ISI related to measures of psychological health when used with women? If so, is identity achievement most closely related to psychological health, as Erikson would argue, or is foreclosure just as good, as Marcia would suggest? In addition, is status with respect to attitudes toward premarital sex either a contributor or the most important contributor to the development of psychosocial health in women? Other questions might be asked as well, such as whether there is any clear developmental progression for identity and intimacy issues, and whether females differ from males in the importance of other developmental stages, but these questions go beyond the bounds of the present
CONSTANTINOPLE'S INVENTORY OF PSYCHOSOCIAL DEVELOPMENT (IPD)

Anne Constantinople's (1969) IPD is one of three paper-and-pencil scales that attempts to measure resolution on each of Erikson's first six stages (although there is now a version of the IPD covering all eight stages). The other two measures are Rasmussen's (1964) Ego Identity Scale and Boyd and Koskela's (1970) Self-Description Questionnaire. Only the IPD has been used extensively (Waterman and Whitbourne, 1981). According to Waterman and Whitbourne's (1981) review of IPD research, the items used in the IPD were originally obtained by Wessman and Ricks (1966), who asked college students to write phrases descriptive of themselves and other students. The resulting phrases were organized rationally, after some experimentation, according to the successful and unsuccessful resolutions of the first six of Erikson's stages. The phrases elicited from the students were augmented and modified by Wessman and Ricks, and presented in a Q-sort format. For each of the 60 phrases, respondents were requested to use a seven-point scale that ranged from least to most characteristic as the items applied to themselves. Constantinople revised Wessman and Ricks measure by translating it into a questionnaire format also using a seven-point scale. Wessman and Ricks (1966)
and Constantinople (1969, 1970) both presented their results according to the twelve subscales involved. According to this method, a subject obtains a score for both the positive and the negative resolution of each stage for a total of 12 subscale scores. For example, a subject would obtain a score for basic trust (the positive stage resolution) and another score for basic mistrust (the negative stage resolution). Waterman revised this system by subtracting the negative stage resolution score from the positive resolution score, thereby yielding six scores, one for each stage, and reducing the probability of Type I errors (Waterman and Whitbourne, 1981). Other researchers have summed these stage scores to obtain an overall score (Bach & Verdile, 1975; Goldman & Olczak, 1975; Munley, 1975).

In the research bearing on the IPD's validity, Constantinople (1969) and Waterman and Whitbourne (1981) have performed factor analyses. Constantinople obtained three identical factors for males and females that corresponded to the scales for stages 1 (Basic Trust vs. Mistrust), 4 (Industry vs. Inferiority), and 6 (Intimacy vs. Isolation). In addition, an "identity factor" was found for males. Waterman and Whitbourne found five meaningful factors, the first of which loaded exclusively on negative items. A second factor appeared whose items came mainly from stage 4 (industry vs. inferiority). The third factor involved the positive resolution of autonomy and initiative stages. The fourth factor corresponded to the intimacy versus isolation stage scales. The fifth factor included Basic Trust and Identity items. To the
extent that the factors found correspond to the subscales, the subscales can be seen as measuring relatively independent aspects of identity development. However, the failure to obtain separate factors for the different subscales calls their discriminant validity into question.

While Constantinople's (1969) research yielded significant correlations between the IPD and social desirability, especially for males, Whitbourne and Waterman (1979) found much lower correlations with social desirability. Correlations with social desirability for females were nonsignificant for the full-scale and most subscale scores, thereby supporting the instrument's validity.

As with the ISI, researchers have looked at longitudinal and cross-sectional changes in scores on the IPD. LaVoie (1976) and Constantinople (1969), studying high school and college students respectively, found cross-sectional increases in IPD subscale and stage scores. Longitudinal studies (Constantinople, 1969, 1970; Fry, 1974; Waterman & Goldman, 1976; Whitbourne, Jelsma, & Waterman, 1982; and Whitbourne and Waterman, 1979) have found significant increases in IPD scores over periods as long as ten years, during college years, and from college years to post-college years. However, the expectation expressed by Constantinople (1969), Whitbourne and Waterman (1979), and Waterman and Whitbourne (1981) that most of the changes on the IPD would appear on the subscales representing the fourth through sixth epigenetic stages has not been consistently supported. Subjects have also obtained significantly increased scores on the scales for the first
three epigenetic stages. This raises questions concerning the timing of the stages suggested by Erikson and the validity of the IPD stage scales. Also, one study (Fry, 1974) found that while rural sample college subjects showed the expected developmental trends, college students with urban backgrounds retrogressed on the stage-five subscale.

Waterman and Whitbourne (1981) cite the following evidence for the construct validity of the IPD full-scale score. The IPD is correlated with positive mood states (Wessman & Ricks, 1966; Constantinople, 1970; Reimanis, 1974), self-actualization (Olczak & Goldman, 1975), vocational maturity (Munley, 1975), internal locus of control and personal adjustment (Bach & Verdile, 1975), ISI commitment statuses (Marcia, 1980), and androgynous sex-role orientations (Waterman and Whitbourne, 1981). The IPD full-scale score correlates negatively with anomie (Reimanis, 1974), fear of appearing incompetent (Goldman & Olczak, 1975), and state and trait anxiety (Bach & Verdile, 1975). In addition, Orlofsky (1978) looked at the relationship between his Intimacy Status Interview and found that college males who had developed intimate and preintimate relationships obtained high IPD scores, those in the pseudointimate or stereotyped statuses obtained intermediate IPD scores, and those in the Isolate status obtained the lowest IPD scores. Based on these results, Waterman and Whitbourne (1981) suggest that the full-scale IPD score measures general "psychological health", "personal effectiveness", or "competence"; but they point out that the full-scale score provides little insight into the epigenetic theory of development.
Waterman and Whitbourne also discuss the validities of the different subscales in their review of the IPD literature. They found that the scales for stages 1 (Basic Trust versus Mistrust), 4 (Industry versus Inferiority), 5 (Identity versus Identity Diffusion), and 6 (Intimacy versus Isolation) were the best validated scales, although the evidence is rather limited. In support of the stage 1 scale, Constantinople (1970) and Reimanis (1974) found that this scale was the most strongly related of all to level of happiness or elation. This is consistent with Erikson's (1968) suggestion that the Basic Trust versus Mistrust dimension would correspond to the attitudes of optimism and pessimism. Little research has been performed focusing on stage 2 and 3 scales, but these scales have shown the weakest relationships to the various criterion measures used in IPD research. The Industry versus Inferiority (stage 4) scale has been related to the more rapid completion of a self-paced course but not to grade (Goldman, Keller, & Sutterer, 1979). Of all the stage scales, Marcia (unpublished research cited in Waterman and Whitbourne, 1981) found that the stage 5 scale (Identity versus Identity Diffusion) was most closely related to his committed subjects (identity achievers and foreclosures). The Intimacy versus Isolation scale has been found to be most able to differentiate between Orlofsky's (1978) higher and lower intimacy statuses. LaVoie and Adams (1978) found that the intimacy scale is most positively correlated with the Rubin scales of Liking and Loving. On the other hand, Olczak and Goldman (1975) did not find a correlation between the stage 6 scale and the capacity for intimate
contact subscale of Shostrom's (1966) Personal Orientation Inventory.

With respect to differences between the results for males and females on the IPD, Waterman and Whitbourne (1981) found few. Perhaps the most notable sex difference is Constantinople's (1969) finding that, while there was an "identity" factor for males, there was no clear identity factor for the females sampled. Also, her male subjects increased their scores in the area of identity over time, but her females did not. This result is not mitigated by Waterman and Whitbourne's (1981) factor analysis that revealed that some of the identity scale phrases appeared on the same factor as the Basic Trust phrases. Thus, identity was not among the clear or important factors found in the IPD, especially for women.

In light of this research and the aims of the present study, we may ask the following questions: How well does the fifth-stage scale of the IPD, as well as the overall measure, predict psychological health for females? How do the overall and the stage-five scores compare with the other identity measures? And, does the fifth-stage scale of the IPD predict identity achievement or commitment on the ISI, as Marcia's (cited in Waterman and Whitbourne, 1981) research suggests.

DIGNAN'S EGO IDENTITY SCALE (EISD)

Sister M. Howard Dignan (1965) used a rational approach to develop her EISD and used it to study the relationship
between maternal identification and ego identity in female college students. Based upon Erikson's (1947, 1955) discussions and the work of other early researchers in the area of ego identity (Bronson, 1959; Rasmussen, 1961; Symonds, 1951; and White, 1952; among others), Dignan isolated seven constructs that were considered to be important to Erikson's overall concept of ego identity. These constructs are summarized here:

TABLE 2. CONSTRUCTS USED IN THE DEVELOPMENT OF THE EISD

"Sense of Self: an abiding and intimate experience of self, an interior knowledge of what one is; a self-image central to one's being.

"Uniqueness: a recognition of one's separate identity, distinctness from others, independence.

"Self-Acceptance: self-knowledge, self-appraisal, and subsequent self-acceptance or rejection of these self-images.

"Role Expectations: responsiveness to expectations of 'important others' in the achievement of adequate sex identity, appropriate social roles, and satisfactory vocational roles.

"Stability: preservation of the same meaning for oneself and for others; implies a 'rootedness', an enduring 'I', consistency.

"Goal-Directedness: awareness of what one stands for, where one is going, and self-assertion to achieve goals.

Interpersonal relations: sufficient delineation of self to permit involvement with others; intimacy, competition, love"(p. 478-479, 1965).

Dignan obtained items for her scale to fit these constructs through reviewing and adapting items from self-report inventories and by having "sister-graduate
students, most of whom had taught adolescent girls" (Dignan, 1964, p. 36) write items that addressed these areas. The resulting items were screened by a clinical psychologist, then submitted to other graduate students once to answer honestly and once to answer with the intention of creating a favorable impression. Items not sensitive to a social desirability response set were then submitted to five judges (psychiatrists and clinical psychologists), who evaluated the items for relevance to the identity construct. After some further sorting, Dignan settled on fifty items, some keyed positively, some negatively (see Appendix B). The scale yields a single score that is interpreted as reflecting ego identity.

In her research at a Catholic women's college (Dignan, 1964, 1965; Dignan and Kubis, 1964), Dignan found that her college sophomore females obtained higher EISD scores on the average than her freshmen, that higher EISD scores were related to lower anxiety, and that the EISD scores correlated significantly with a rating scale concerning identity traits.

Dignan's research has special significance in that she found that females scoring higher on her scale were also found to have higher levels of assumed similarity with their mothers and that these females reported fewer interpersonal problems with their mothers, when compared to lower-scoring females. Although she had originally (Dignan, 1964) considered the possibly harmful effects of over-identification with the mother, Dignan interpreted these findings as indicating that the female's sex-role
identification with her mother provides a stable element or anchor for her own identity. This core allows her to "experiment more freely with other roles. . . Such initial role commitments do not prevent students from embracing other roles later on; they simply mean that current stabilization of ego identity is facilitated by clarity of sex role" (Dignan, 1965, p. 481). The higher levels of anxiety found in low-scoring females was interpreted as the result of a lack of integration among the components of ego identity (Dignan and Kubis, 1964). Marcia and Friedman (1970) turned to Dignan's findings concerning the relationship between the EISD and maternal identification to help explain why their foreclosed females scored lower on a measure of anxiety and higher on a measure of self-esteem. Dignan's work came to be interpreted as support for the adaptiveness of foreclosure for females (e.g., Marcia & Friedman, 1970), although there is no direct evidence that foreclosed females would show greater "maternal identification" than females in, for example, the achievement status, although this seems likely.

The questions that the present research addresses with respect to the EISD are similar to those proposed for the IPD: How well will the EISD predict the criteria of psychological health? How will the EISD compare with the other paper-and-pencil identity measures? And, how will the EISD relate to the ISI statuses: will foreclosure status females obtain the highest scores on the EISD?
TAN, et al.'s EGO IDENTITY SCALE (EIST)

Tan, Kendis, Fine, and Porac (1977) reviewed the identity development research and concluded that a short, objective, and free-of-response-set identity scale was in order. Accordingly, they developed a measure using a forced-choice format, screened potential items carefully to avoid those that correlated with the Marlowe-Crowne Social Desirability scale, and used item analysis to eliminate items that contributed little to the overall score. This left only twelve items (Appendix B). Factor analysis revealed that there was only one general factor. Thus, Tan, et al.'s approach differs greatly from the multidimensional approaches used by Marcia, Constantinople, and Dignan.

In order to validate their scale, Tan, et al., correlated their EIST with Rotter's Interpersonal Trust Scale (1967) and his Internal-External Locus of Control Scale (1966), and their own Intimacy vs. Isolation Scale. These researchers also wanted to be sure that those scoring high on their scale would not be Marcia's foreclosures, who often score high on the paper-and-pencil identity measures, along with the true achievers. In order to indirectly test their scale's ability to discriminate between ISI foreclosures and achievers, they included a measure of
authoritarianism (the California F scale) and Tomkin's Left scale, to measure the extent to which a person derives his or her values from others, taking advantage of the differential responses of foreclosures and achievers on these scales. They found that their EIST correlated positively and significantly with the I-E and their intimacy scale, but not with the trust scale. In addition, their scale correlated negatively with authoritarianism and the tendency to adopt the values held by others. In a final validation, they had subjects fill out the EIST and answer questionnaires designed to assess moral, political, and occupational commitment. Their scale correlated positively with both occupational and political commitment. Thus, Tan, et al., summoned extensive support for their measure as well as apparently having fulfilled their goals of making a short, objective, and relatively free from response bias measure.

While no research using the EIST has been found in the present review, Marcia (1980) notes that it may have overcome the tendency for paper-and-pencil measures to confuse foreclosed and achievement subjects and to be susceptible to socially desirable response sets. The possibility that this measure might avoid confusing foreclosed and achievement statuses raises (in addition to the predictive and comparative questions raised for the other measures) the question of whether this measure will relate to the ISI differently from the other paper-and-pencil measures. Furthermore, since the authors do not specify whether they used males or females in their validation process, it will be interesting to see how the
measure performs with a female sample.

CRITERION MEASURES

Each of the measures discussed attempts to measure the same Eriksonian concept -- ego identity --; however, each measure approaches the task differently. Marcia's ISI differs from the others in its interview format and focus on occupational, ideological, and sexual "crises" and "commitments". Constantinople's separate stage scales allow one to look at ego identity in the context of earlier stage resolutions. Her scale items are based on the broad concepts Erikson uses for each stage (basic trust, autonomy,...), thus increasing its face validity. Dignan's EISD focuses on Erikson's fifth stage but attempts to address various components of the concept-- such as sense of self, uniqueness, self-acceptance, role expectations, stability, goal-directedness, and interpersonal relationships -- that she derived from the review of previous research and analyses of Erikson's concept of ego identity. Tan, et al., also focus on the fifth stage, but they take a unidimensional approach.

Given these differences in approach, we may also expect differences in the conclusions we reach about each measure. Such differences may reflect the differences in the methods of assessment or in the criteria used in the development of each, or in both (Campbell and Fiske, 1959). These
variances, furthermore, are likely to be associated with
differences in the evidence obtained for their construct
validities. It is reasonable to ask how the measures
compare. The study described here attempts to answer the
following question: Does any one measure show greater
agreement with the independent criteria for identity
development, thus arguing for its greater construct
validity? The answer to this question may aid future
selections of measures for research into Eriksonian
concepts.

Given that one is to do a construct validity study of
several measures of Eriksonian ego identity and a
comparison of the strengths of the evidence for each, what
criteria can one use? Erikson's description of identity
achievement encompasses a broad variety of features, and
the different measures address these in varying degrees of
comprehensiveness. Bourne (1978b, p. 376) presents seven
facets of Erikson's concept of ego identity. Similarly,
Dignan (1965, p. 398) isolates seven components, as stated
above. Their lists do not agree, of course, although there
are some common features. But, in general, to choose one
researcher's set of criteria or to attempt to arrive at a
set of criteria about which there is a consensus is a
questionable and unwieldy process.

A second approach seems preferable. Erikson himself
suggests criteria for a healthy ego identity. It may be
recalled that Erikson (1968, p. 92) presents his theory of
life-span development as a description of the development
of the healthy adult personality, as well as a theory of
psychological development. He suggests Jahoda's (1950)
criteria as the standard for the healthy adult personality. Inasmuch as the resolution of the fifth stage (Identity versus Identity Diffusion) may be seen as the transition from adolescence to adulthood, we may expect that individuals who obtain higher scores on the identity scales or fall in more advanced categories of the ISI shall also tend to fulfill the criteria for adult mental health better.

We must operationally define Jahoda's criteria. These are, once again: 1) active mastery of the environment; 2) unity of personality; 3) correct or accurate perception of self; and 4) correct or accurate perception of the world.

Active Mastery of the Environment

In his approach to mental health, White (1959, 1973) emphasizes the importance of a sense of competence. "Important in one's sense of self . . . is one's competence in dealing with the relevant environment and one's confidence of being able, when necessary, to have desired effects" (White, 1973, p. 10). One approach to evaluating "a sense of competence" that is suggested by White (1973) and Smith (1969) is Rotter's (1966) Internal-External Locus of Control Scale (I-E Scale). Relative to each other, "internals" perceive themselves as being in control of whether they receive reinforcers, whereas "externals" believe that they have little influence over whether they receive reinforcers. Interestingly, many of the characteristics of the individual scoring high in
internality are those suggested by Jahoda (1958) for the individual who actively masters his or her environment. Specifically, compared to externals, internals are seen as being more successful in problem-solving tasks (DuCette and Wolk, 1973); more effective in influencing others' opinions in a positive manner (Phares, 1976); more time-efficient (Gozali, et al., 1973); more motivated to acquire and use information that will benefit them (Kleinke, 1978); less susceptible to social influence, suggesting greater independence of behavior and internal regulation (Kleinke, 1978, Snyder and Larson, 1972); and more active in campus activities and having higher GPAs (Brown and Strickland, 1972); to mention a few findings. Based on these findings, the I-E Scale appears to be an appropriate measure for Jahoda's active mastery concept.

Rotter's (1966) I-E scale has been used to help validate a variety of identity measures because of its implied relationship to autonomy. Tan, et al., (1977) used the I-E scale with their EIST. Matteson (1974) and Waterman, Buebel, and Waterman (1970) have used the I-E with the ISI. The identity measures have typically been negatively correlated with the I-E, indicating greater internality; however, the results with the ISI have depended upon the sex of the subjects, with achievement and moratorium males scoring lower and achievement and foreclosed females scoring lower.

**Unity of Personality**

Jahoda (1958) and Smith (1969) see unity of personality as being related to the consistency of self-concept.
Frequent, widely varying, transient changes in self-concept are seen as characteristic of the individual who has little unity of personality. More unity is seen as being reflected in less fluctuation in self-concept.

Shlien (1962) discusses several different approaches to the measurement of self-concept and unity of self-concept. The approaches outlined for the measurement of consistency or unity of self-concept involve the correlation of a self-rating and a rating of "the self in various situations" (Dymond, 1954), ratings of the self over a period of time, and the correlation of descriptions of the self as one is and as one would ideally like to be (Butler and Haigh, 1954). The real-ideal disparity measure has been used extensively in therapy outcome research and is interpreted by Shlien as one way to conceptualize and measure self-esteem. Diminished disparity between real and ideal self-descriptions using Q-sorts has been related to successful outcome of therapy. For example Butler and Haigh (1954) found that therapy clients showed an increase in consistency of real and ideal self-descriptions over the period of therapy while non-therapy controls did not show such change. In addition, while most of the change appeared to involve a more positive self-concept, part of the change involved the moderation of the ideal. Shlien notes that while low levels of self-consistency (as evidenced by large disparities or low correlations between real and ideal selves) is associated with poor adjustment, excessively high levels of self-consistency (as evidenced
by very high correlations between real and ideal selves) has also been found to be associated with defensiveness and maladjustment (Chodorkoff, 1954a, b). Thus, self-consistency may show a curvilinear relationship with other measures of adjustment if one's sample includes highly defensive subjects. Self-consistency has also been correlated with greater acceptance of others (Berger, 1953, 1955; Sheerer, 1949; Stock, 1949), which is suggestive of the relationship Erikson proposes exists between identity and intimacy. Subjects who have higher levels of self-consistency have been found to be less influenced by negative feedback, as reflected by attempts to behave in ways designed to restore self-esteem (Dittes, 1959).

Self-concept disparity and the variation of self-concept in different situations have both been techniques used to operationally define identity from an Eriksonian point of view. Block (1961), assuming that role variability is an important component of ego identity, had his subjects rate themselves on 20 adjectives to characterize their behaviors when in the company of each of eight specified important others. He hypothesized that the correlation between these eight self-ratings would show a U-shaped relationship with measures of psychological adjustment (the California Psychological Inventory) reflecting the shift from excessive role variability through adaptive role variability to role rigidity. Block found, instead, a negative linear relationship between increasing role correlations and neuroticism. He attributed this result to the absence of excessively high role correlations among the self-descriptions provided by subjects in his sample.
Gruen (1960) used Butler and Haigh's (1954) real-ideal Q-sort procedure to measure ego identity. He found that when subjects showing less discrepancy between real and ideal self-descriptions were given false negative feedback, they were more likely to reject this information than subjects with greater real-ideal discrepancies. Thus, having a less discrepant self-image appears to reflect a clearer sense of self (identity) that allows the individual to reject the incorrect attributions made by others. Hauser and Shapiro (1973) and Bronson (1959) also used measures based on self-concept disparities.

Bauer (1972) and Bourne (1978a) have both criticized the use of the adjective checklist or the Q-sort based measures to measure Erikson's construct of identity development. Bauer points out that the focuses on self-concept and role stability leave out other aspects of Erikson's concept of identity and appear to be "primarily reinterpretations of identity theory into self theory" (Bauer, 1972, p. 5). Bourne (1978a) argues that inconsistency of self-descriptions may not always mean that a person is confused or conflicted concerning interpersonal roles. Inconsistency, he says, could reflect flexibility. On the other hand, role consistency among the descriptions may reflect superficial involvement in the task by the subject. He also questions whether increasing role-consistency over time reflects true increases in identity formation, or just a measurement artifact. Still, while Bourne questions the use of self-concept consistency measures as measures of ego identity, he does not question their use as measures of "consistency of self-image" (p. 232). In light of Bourne's
criticisms, the use of self-concept disparity measures has not resulted in evidence of over-rigidity, perhaps because of the subject populations studied (Block, 1961), and such measures have been found to be related to identity related concepts.

Two measures of "unity of personality" were selected for this research. The first is the variation between real and ideal self-descriptions, similar to the "self-esteem" measure of Butler and Haigh (1954). The second is the variation among three different self-descriptions: the subject's real self-rating, the subject's ideal self-rating, and the subject's average rating of how she believes each of three friends rated her. The real-ideal disparity score allows some comparison with studies using the concept of self-esteem. The variance among real, ideal, and belief about how others see one provides a self-concept dispersion measure that draws upon more self-perceptions than the real-ideal measure does. Although Shlien (1962) warns that self-esteem may have a nonlinear relationship with indices of psychological health, the populations studied in identity research have typically revealed linear relationships between consistency of self-concept and other measures of psychological well-being (Block, 1961), and between such constructs as maternal identification and ego development (Dignan, 1965). Accordingly, the present study will assume a linear relationship between both measures of unity of personality and the other measures.
Accurate Perception of the Self and the World

In operationalizing this criterion of psychological health, it was assumed that "the world" referred to the social world and that accurate perception of the self entailed perception of the self within this social world. Both aspects of accurate perception are thus assumed to be interdependent: accurate perception of the social world requiring accurate perception of the self and vice versa. Accordingly, a single assessment task should be able to address both as a unit. The method proposed here for measuring accuracy of perception involves having three friends of a subject rate the subject on a list of adjectives, then to have the subject rate herself three times, once for how she believed each of her friends rated her. The accurately perceiving subject is assumed to be more able to predict how others in her social world perceive her and hence how she fits into that social world. Such a judge is also assumed to be able to differentiate between how she perceives herself and how she comes across to others. The less accurate perceiver is presumably less aware of the difference between her internal perception of herself and how she comes across to others, and less sensitive to the differences among others, such as her friends, that might contribute to differences in their perceptions of her. For example, a subject might doubt her own brilliance but realize that she comes across in an intelligent way and so will be considered to be bright by others. In addition, this judge might realize that one of her friends is more critical of her ideas than the others,
and she may perceive that friend as having a "need" to perceive herself as more intelligent than others. The more perceptive judge should be able to capitalize on such insights into others, given that they are correct, to more accurately predict how others perceive her.

The task of having a subject attempt to predict how others rated her is a variation of a general type of task in which accuracy of social perception is assessed. Such tasks and their methodological difficulties have been discussed by Cline (1964), Cronbach (1955), and Wiggins (1973), among others. From an historical perspective, the topic of accuracy of perception of judges was researched extensively until the mid-fifties. At that time, Cronbach (1955) and others noted that the typical global accuracy of perception scores confounded a variety of mathematical and response characteristics with a variety of facets of perception. Consequently, the results of the research performed up until that time came to be considered to be largely uninterpretable (Cline, 1964).

The typical perceptual judgment task involved having a judge (J) rate several stimulus persons (O's) and used the stimulus person's own self-ratings as the criterion for accuracy. The degree of accuracy was determined by squaring and summing the differences between the J's and O's ratings (the $D^2$ statistic). Cronbach (1955) demonstrated that the $D^2$ statistic included seven components and that not all were relevant to the question of accuracy. In fact, some amounted to serious confounds. For example, he noted that different judges used rating scales differently, some using the extremes of the scales
more than others, and some less. The judges who tended to use extremes less often automatically obtained better $D^2$ scores due to mathematical artifact. He also showed that the $D^2$ statistic combined several different types of accuracy, one type involving the ability to differentiate between how others rate themselves, and another type involving the ability to rate how others rate themselves on the average. Cronbach's components of the $D^2$ statistic are as follows:

**Elevation (E):** This component is simply the difference between the judge's average rating of all others across all items and the average of the others' self-ratings. This component of the $D^2$ statistic is irrelevant to most questions concerning accuracy of social perception.

**Differential Elevation (DE):** The differential elevation score is based on the difference between the judge's average rating for each of the others and each of those other's average self-ratings. This score is based on two components: the correlation between the J's average predictions and the O's average self-ratings, and the variances among the J's average ratings of the others and among the O's average ratings. The variance component is of little significance to perceptual accuracy because it primarily reflects the differences among the J's and O's uses of the rating scale instrument. However, the correlation component (DER) was considered by Cronbach to be relevant to the determination of perceptual accuracy since this reflects the judge's ability to determine which other rated him- or herself most and least highly (the ability to rank the O's according to how positively they ranked themselves).

**Stereotype Accuracy (SA):** This score refers to the ability of the judge to predict the average "profile" of the responses of the others as a group. It is based on the difference between the average rating the judge gave the others on each item and the average of the responses of the others on each item. This score is also made up of a correlation component and a variance component. Again, the correlation component (SAR) is the most important component whereas the variance component
is primarily mathematical noise. The SAr component reflects the "in tuneness" of the judge to the typical response to each item.

**Differential Accuracy (DA):** The differential accuracy score measures the ability of the judge to accurately differentiate among others in his or her predictions. This score again has a correlational component (DAr) and a basically irrelevant variance component. Cronbach identified the DAr as being the component of the D² statistic that is most similar to what most psychologists consider perceptual accuracy to be: the ability to distinguish among others on a variety of dimensions.

In this study, Cronbach's components of accuracy of perception take on somewhat modified meanings because the judge is basically rating herself as she believes others perceive her rather than judging how others rate themselves. In this context, DEr could reflect the level or degree to which the subject accurately estimates the relative positiveness of the average rating that each other makes of her. SAr refers to the subject's ability to predict how she comes across on the average. SAr thus refers to the accuracy of the judgement of one's "stereotypic self" rather than the "stereotypic other". DAr refers to the subject's ability to predict particular differences in how she comes across to her friends. Within this framework and within the context of this study, while all components are important, the SAr may be more important than either the DEr or the DAr. The stereotypic self refers to the subject's belief about how she generally impacts the world, not to some average belief about the self held by many others, although there may be a relationship between the two. The criterion for this average self is the average rating of the subject by her
friends, not the average of all self-ratings obtained in the study. Thus, the SAr can be seen as a sensitivity to a unique person, oneself, and how the world reacts to such a person. The DAr can be seen as a sensitivity to differences among others as influenced by the self. These two components of accurate perception are likely to be independent, just as SAr and DAr components appear to be in the more traditional paradigm (Wiggins, 1973).

**HYPOTHESES**

Within the framework of the demonstration of the construct validities of the four measures of Eriksonian ego identity development, this study is aimed at testing several different types of hypotheses, presented here. Hypotheses that apply to all identity measures will be presented first, followed by hypotheses that relate to particular measures.

**Specific Predictive Hypotheses.** Each of the identity measures should be related to each of the criteria in such a way that scores or statuses indicative of greater identity development should be correlated positively with scores indicative of greater psychosocial health. Specifically:

**Accuracy of Social Perception Scores:** DEr, SAr, and DAr will correlate positively with each of the identity measures, supporting Erikson's belief that higher levels of identity development will be associated with more accurate perception of the
social world and the self within the social world.

Unity of Personality: The identity measures will correlate negatively with the real-ideal disparity and ego-dispersion scores. Lower scores on these criterion measures indicate greater "unity".

Mastery of the World: The identity measures will be correlated negatively with Rotter's I-E scale. Lower scores on the I-E are indicative of having an internal locus of control, or the perception that one has the ability to control one's world.

Convergent-Discriminant Hypotheses. Although the predictor and criterion measures selected do not fulfill all of the requirements of Campbell and Fiske's (1959) multitrait-multimethod matrix model for convergent and discriminant validation, enough different traits and methods are included to apply some of their requirements for convergent-discriminant validity. Accordingly, it is hypothesized that the identity measures will correlate with each other more than with the criterion measures that use the same or different methods. Specifically, the paper-and-pencil measures of identity will be more highly correlated with each other than with either the ISI, which uses a different method, or the paper-and-pencil criterion measures, which are measures of different traits. In addition, the paper-and-pencil identity measures will correlate more highly with the interview-based identity measure than with the paper-and-pencil criterion measures.

General Predictive Hypotheses. Going beyond the "specific predictive hypotheses" cited above, it is hypothesized that each of the identity measures will predict the criterion measures as a unit and in the
directions specified above. It is this ability to account for the total variance among the criteria for psychological health that can lend the greatest support for the validity of the different measures.

**Comparative Hypothesis.** There will be some measure that shows a greater predictive ability than the other measures, as evidenced by being able to predict a significantly greater amount of the overall variance among the criteria and by having appropriately positive or negative correlations with the criteria.

**ISI Hypotheses.** Because the ISI has a non-linear relationship with most other variables, special hypotheses are required to accommodate the differences between the ISI's nominal level of measurement and the ordinal or interval levels of measurement of the other measures. Special treatment of the ISI is also needed as a result of the present study's focus on area scores rather than over-all scores. With respect to the typically nonlinear findings with the ISI statuses, research with women has, for example, frequently found that foreclosure status subjects tend to score higher on measures of psychological comfort and adjustment than do subjects in the diffusion and moratorium statuses, and sometimes higher than achievement status subjects. It would only be reasonable to expect that this type of finding would be repeated in the present study. However, Erikson's theory appears to suggest that the indices of psychological health should increase linearly through the statuses or, at least, that diffusion and foreclosure should be relatively low compared to achievement. Accordingly, the following two sets of
competing hypotheses are advanced, one "going by the book" and one reflecting the results of research with women.¹

Based on Erikson's theory:

1. Being in the diffusion status will be negatively related to the criteria of psychological health, and subjects in this status will get the lowest psychological health scores of all the statuses.

2. Being in the achievement status will be positively related to psychological health, and subjects in this status will obtain the highest scores on the psychological health criteria.

3. Being in the foreclosed and moratorium statuses will be less related to the measures of psychological health than being in the other statuses. Being in foreclosure should be negatively related to the measures of psychological health, if related at all. Being in moratorium should be positively related to measures of psychological health, if related at all.

Based upon the research of Marcia and Friedman (1970) and Schenkel and Marcia (1972):

1. Being in foreclosure will be negatively correlated with the unity of self measures, indicating greater unity.

2. Being in the achievement status will show no greater evidence of unity of self than being in foreclosure.

3. Being in the foreclosure and achievement statuses will be negatively related to the I-E scale, indicating a more internal locus of control for these statuses than for the moratorium and diffusion statuses.

4. Being in moratorium and diffusion will be

¹"Dummy coding" of statuses, and of the occurrence of crisis and the presence or absence of commitment was performed to allow conversion of the nominal level of measurement ISI data into interval level data. See Cohen and Cohen (1975) for a discussion of the dummy coding of variables.
negatively related to the indices of psychological health.

Besides these hypotheses concerning the statuses, this study also focuses on the contributions of the different areas of identity development to the prediction of psychological health. With respect to areas, it is hypothesized that status in the area of attitudes toward premarital sex should be a better predictor of psychological health than the statuses in the other areas (occupation and ideology). This hypothesis is derived from the findings of Schenkel and Marcia (1972) and Waterman and Nevid (1977), and from Erikson's theory, which suggests that the woman's moratorium concludes with the successful selection of that which "is to be admitted into the welcome of inner space 'for keeps'" (Erikson, 1968, p. 283).

**IPD, EISD, and EIST Hypotheses.** Based on the review of the literature on these measures, several hypotheses are suggested that go beyond the general hypotheses listed above. With respect to the IPD, Waterman and Whitbourne (1981) suggest that it is important for identity research to consider stage 5 scores as well as full-scale scores. Accordingly, the performance of the stage 5 score (IPD5) will be tested along with the overall IPD score. Dignan's (1965) finding that her EISD correlates with maternal identification suggests the hypothesis that her scale may relate most strongly to the foreclosure status. With respect to the EIST, Tan, et al.'s (1977) attention to having this scale correlate negatively with authoritarianism suggests that this scale should relate more strongly to the achievement statuses on the ISI than
to the foreclosure status.
METHOD

SUBJECTS

Sixty-three female undergraduate students from the college of William and Mary participated in the research. Of these subjects, six were dropped from the analysis due to incomplete data sets, leaving 57 subjects. Thirty of these were freshman, 5 were sophomores, 8 were juniors, and 14 were seniors. Seventeen of the subjects were either paid or offered and declined compensation. The other 40 subjects participated to fulfill research requirements associated with an introductory psychology course. The introductory course students signed-up for the research and were randomly assigned to treatments and interviewers. Fourteen of the subjects were acquainted with one or the other of the interviewers and were assigned to the interviewer that they did not know. Four of the freshmen were black. The rest of the subjects were Caucasian.

Each subject was required to enlist the help of three friends who were to be asked to describe themselves and the subjects using adjective checklists. These friends could
not be relatives and had to live locally. All but three of the friends selected by the participants were students. Individuals could participate in the research and serve as "friends" to a maximum of two other participants. All subjects were able to obtain the help of three friends. The friends of the subjects participated without compensation.

MEASURES

Marcia's Identity Status Interview (ISI)

The ISI is described in the introduction and evidence for its validity is given there. The ISI questions and scoring instructions are given in Appendix A. The questions concerning occupation, religion, and politics come from Marcia's (1966) original interview, and the questions concerning attitudes towards premarital sex are those used by Schenkel and Marcia (1972). Within the semistructured interview format, the interviewer asked as many of the questions as he or she felt was necessary in order to obtain the crisis-commitment information needed for scoring. Questions could be omitted by the interviewer if he or she felt that the information that would have been elicited by the question(s) had already been elicited by other questions. The interviewers took notes during the interviews, and the interviews were tape-recorded to allow subsequent scoring. Twenty-eight of the interviews were conducted by the male and 35 by the female interviewer in
an attempt to control for the possible influence of interviewer sex. Following the completion of the interviews, the author randomly divided the interviews of each of the interviewers into two sets. The first set was used for training an assistant in interview scoring. An overall interrater agreement of 76% was achieved on 20 of the interviews from the training subset. Then, an interrater agreement was established based on the remaining sample of 32 interviews. The overall agreement was 76% for this sample. Agreements of 81%, 62%, 84% and 75% were obtained for occupation, religion, politics, and sexual views, respectively. Statuses in religion and politics were combined, based on the developmentally more advanced status of the two, to form the ideology status. The interrater agreement on this status was 69%.

The statuses for each area were coded in three ways to allow appropriate statistical analyses. The first way involved considering the statuses to be ranked from 1 to 4 in their developmental order. Thus, diffusion would be coded "1"; foreclosure, "2"; moratorium, "3"; and achievement, "4". The second approach involved dummy coding (see Cohen and Cohen, 1975) in which each subject was rated as being in or not being in every status in every area. Thus, a subject in the foreclosed status in occupation would have a "1" for foreclosure and "0"s for the other three statuses in the area. The third approach also used dummy-coded variables, but this time for crisis (yes=1, no=0) and commitment (yes=1, no=0). According to this coding approach, diffusion would be coded "0"s for both crisis and commitment; foreclosure would be coded "0"
for crisis and "1" for commitment; moratorium would be
coded "1" for crisis and "0" for commitment; and
achievement would be coded "1" for both crisis and
commitment.

Constantinople's (1969) Inventory of Psychosocial
Development (IPD)

This instrument is Constantinople's rating-scale
revision of Wessman and Ricks (1966) Q-sort technique (the
IPD is included in Appendix B). The IPD includes 60 items
grouped in twelve subscales of five items each. Two
subscales are used to measure each Eriksonian stage, one
devoted to the positive resolution of the stage, one
devoted to the negative resolution of the stage. Scores
for each stage are derived by subtracting the sum of the
negative-item scores from the sum of the positive item
scores. The resulting scores range from -30 to +30.
Correlations between the Q-sort and the rating forms of the
instrument range from .68 to .97 on the 6 subscales for the
forth, fifth, and sixth stages. The names of the scales,
along with sample items are as follows:

<table>
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<tr>
<th>Table 3. Sample IPD Items</th>
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<tbody>
<tr>
<td>Stage</td>
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</tbody>
</table>
| 1       | Basic Trust: "Deep, unshakable faith in myself".  
          | Basic Mistrust: "Pessimistic, little hope". |
| 2       | Autonomy: "Stand on my own two feet".  
          | Shame and doubt: "Cautious, hesitant, doubting". |
| 3       | Initiative: "Adventuresome".  
          | Guilt: "Inhibited and self-restricted".  |
4. Industry: "Serious, have high standards".
   Inferiority: "Ineffective, don't amount to much".

5. Identity: "Know who I am and what I want".
   Identity diffusion: "Never know how I feel".

6. Intimacy: "Candid, not afraid to expose myself".
   Isolation: "Very alone".

Constantinople (1969) obtained six-week test-retest reliabilities ranging from .45 on the identity diffusion subscale to .81 on the intimacy subscale. Waterman and Whitbourne (1981) obtained one-week test-retest reliabilities ranging from .71 to .89, with a median of .80 and a full-scale reliability of .88. Whitbourne and Waterman (1979) calculated Cronbach's alpha coefficient for the 12 subscales in order to assess their internal consistencies. These coefficients ranged from .44 to .82, with a median of .72. While Constantinople found a significant correlation (-.52) between the measure and her scales of negative resolutions for male subjects, Whitbourne and Waterman did not find significant correlations between the Marlowe-Crowne measure and the IPD for their female subjects, except for on the first and sixth subscale stage scores. However, the correlations between these subscales and the social desirability scale were .13 and .15 respectively, and were significant at the .05 level by the virtue of a large sample. Evidence supporting the validity of this and the other scales is discussed in the introduction.
Dignan (1963) developed this self-report instrument in order to operationally measure ego identity in Erikson's theoretical framework, although she also drew upon other researchers in ego identity (Dignan, 1965). The EISD includes 50 items that the subject either endorses or denies (see Appendix B for EISD). Examples of items from each of the categories are given here:

**TABLE 4. SAMPLE ITEMS FROM THE EISD**

**Sense of Self:** "At times I am a mystery even to myself", and "what I am now is pretty much what I am going to be".

**Uniqueness:** "People seldom mistake me for another girl", and "I feel swallowed up by the crowd here at college".

**Self-Acceptance:** "I like to picture myself as someone else", and "I know I'm not perfect but I prefer to be as I am".

**Role Expectations:** "I believe I see myself pretty much as others see me", and "it seems to me that most of the things girls do are very dull".

**Stability:** "First I try to be like one person I know, then another", and "I don't seem to be changing as much in college as I did in high school".

**Goal-Directedness:** "I feel a deep need to live up to my ideals", and "my problem is that I don't really know what I want to become".

**Interpersonal Relationships:** "Meeting new people is fun for me", and "it is easier to lay aside my principles than to fight for them against opposition".
The test-retest reliability is .72 and .78 for freshman and sophomores, respectively.

The Ego Identity Scale of Tan, Kendis, Fine, and Porac (1977) (EIST)

The EIST includes 12 items in a forced-choice format (Appendix B). Each statement in each item pair reflects characteristics of identity achievement or diffusion suggested by Erikson (1963). Item pairs were selected on their ability to differentiate between high and low scores in a larger set of items and on their independence from one-another. An example of the items used is "my evaluation of self-worth depends on the success or failure of my behavior in a given situation" versus "my self-evaluation, while flexible, remains about the same in most situations". Tan et al., (1977) provide only a split-half reliability: .68.

Rotter's (1966) Internal-External Locus of Control Scale (I-E)

Rotter's I-E scale is, conceptually, an instrument designed to measure the generalized expectancy of the individual that his behaviors will be followed by reinforcers. The scale's construct validity has been supported by its relationship to the individual's alertness to important aspects of the environment, tendency to act to improve his conditions, emphasis on the values of skills and reinforcers, and resistance to subtle influences. The
scale consists of 23 forced-choice items. One-month test-retest reliabilities range from .60 to .83, for a combined .72, for college students.

Adjective Description Scale (ADS)

The ADS was developed by Veldman and Parker (1970) through the factor analysis of Gough and Heilbrun's (1965) Adjective Check List (ACL). Of the 300 items of the ACL, 56 were retained. Veldman and Parker substituted 5-point rating scales for the true-false format of the ACL (Appendix C). The ADS's internal consistencies range from .77 to .97 for the seven factors that they obtained. The test-retest reliabilities for these factors range from .80 to .92.

Unity of Self (Real-Ideal and "Ego Dispersion") and Accuracy of Social Perception Score

The ADS was used to obtain real, ideal, other, and self-as-percieved by other ratings. The real-ideal score was obtained by summing the variances between real and ideal self-descriptions on each item across items. The ego-dispersion score was obtained by summing the variances among real, ideal, and the average of the self as one believes one's friends described one across items. In effect, the variances between the real and ideal, or real, ideal, and "social self" descriptions were calculated for each ADS item, then the variances obtained for each item
were summed across items to yield the real-ideal disparity and ego dispersion scores. The accuracy of social perception scores were calculated using Cronbach's (1955) accuracy of perception formulas.

**PROCEDURE**

Subjects attended two sessions, each lasting approximately one hour, to allow the isolation of potentially reactive measures and the recruitment of friends prior to having the subjects rate themselves as they believed their friends would rate them. The three paper-and-pencil identity measures were administered in the six possible orders, and ten to twelve subjects took the measures in each of these basic orders. Of these subjects, half took the ISI in the first session and the paper-and-pencil measures in the second; while the other half took them in the opposite order. In this way, the order of the independent measures was counterbalanced while still isolating the ISI from the paper-and-pencil measures, which might be reactive to the ISI. The male interviewer conducted 28 subjects through both sessions and the interview, and contacted and met with the subjects' friends; the female interviewer conducted 35 subjects through both sessions and the interview, and contacted and met with their friends.

Because the research required each subject to enlist the help of three friends and because the knowledge of this in advance could result in a biased sample population due to
self-selection, this requirement was not stated until after the subjects had come to their first session. After being told about the requirement, the participants were told that they could leave the research without any penalty. However, no subjects chose to do so. The subjects were urged not to discuss the requirement for the help of friends with any potential subjects.

The verbal instructions given to the subjects are included in Appendix E. The procedure and paraphrased instructions are given here. At the beginning of the first session, the subject was told that she would be asked to complete a number of questionnaires, be interviewed in accordance with a semi-structured format, and be asked to enlist the help of three friends. The friends, the subject was told, would be asked to fill out short questionnaires describing themselves and the subject. The subject was told that her own responses and those of her friends would be completely confidential and that she would not get to know what her friends said about her or vice versa. After these general conditions were explained, the subjects were given informed consent forms. (See Appendix D for the informed consent forms used for subjects and their friends.) Next, the subject was either interviewed or given the paper-and-pencil identity measures. All measures were administered individually, and subjects were encouraged to take breaks to prevent fatigue. At the end of the first session, subjects were given consent forms for their friends to sign. They were told that the friends that they asked to help them should know them well, live locally, be of the same sex and not be relatives.
Procedural questions were answered.

The second session was arranged after each subject had submitted consent forms from their three friends. Subjects began this session by writing stories for two need for achievement stimulus pictures (not used in the thesis). Next, the subjects either completed the paper-and-pencil measures of identity or were interviewed according to ISI, depending upon what they had done previously. When these were completed, the subjects were asked to fill out the ADS adjective check lists as they believed they were (real), as they would like to be (ideal), and as they thought that each of their three friends would rate them. (See Appendix C for the ADS instructions used. These were included on the ADS form.) Half of the subjects completed the adjective checklists for their real selves first, then their ideal selves; the other half filled out their ideal selves first. Real- and ideal-self forms always preceded the subjects' ratings of how they thought their friends rated them to reduce order-induced variance and to give all subjects a consistent opportunity for practice. When all five adjective checklists had been completed, the subjects filled out a special form designed to estimate how close a relationship the subject had with each friend. Next, subjects filled out the I-E and Marlowe-Crowne scales if they had not already done so in connection with the "mass testing" of the subject pool. Finally, subjects were debriefed.

Meetings with the friends of the subjects were arranged by phone and were either held in dorm rooms or in graduate student offices. The friends were encouraged to be honest
in their assessments of themselves and their subject-friends by being reminded that their responses were confidential and not available to the subjects, and by being assured that their responses would result in no harm to themselves or the subject. The adjective checklists were then explained. The friends rated themselves first, then the subjects. Appendices C and E give the verbal instructions for the friends and the ASD checklist instructions. The friends took 10 to 15 minutes to fill out these forms.
RESULTS

In general, the results show strong relationships between the paper-and-pencil identity measures, on the one hand, and real-ideal, ego-dispersion, and I-E measures, on the other hand. None of the areas of the ISI significantly predicted the criteria as a multivariate whole, although occupation statuses approached significance. On the other hand, there were significant relationships between statuses in certain areas of the ISI and certain criteria.

Table 5 gives the frequencies of subjects in each ISI status area, including ideology. Because ideology showed stronger relationships with the criteria than either religion or politics, ideology will be considered in further discussions, but religion and politics will not be. Inspection of frequencies of subjects in different areas and statuses suggests that relatively few subjects were in the committed statuses with respect to occupation and few subjects appeared to be diffused in the area of sex. The low frequencies of these area statuses reduces the confidence that we can have in the reliability of the results associated with them.
Order and Interviewer Effects

Multivariate analyses of variance (MANOVAs) were conducted to test for possible order of administration effects for the orders in which the ISI, the paper-and-pencil identity scales, and the real and ideal self-descriptions were given. Whether the ISI was conducted during the first or second interview had no significant effect on the criterion measures (DER, SAR, DAR, RID, ego-dispersion, and the I-E; F=.1538, p less than .99), the identity scales (EISD, EIST, IPD, IPD5; F=1.84, p less than .13), or on statuses in the ISI areas (occupation, ideology, or sexuality; F=.60, p less than .83). The orders in which the paper-and-pencil identity measures or the real-ideal measures were given had no main effects on the identity scale scores or on the criterion scores. Finally, there were no interviewer effects on the criterion scores, the identity scales, or the relative frequencies of the ISI area statuses.

SPECIFIC PREDICTIVE HYPOTHESES

This section presents the results of the pairwise consideration of the predictors' relationships with the criteria. Table 6 presents the matrix of Pearson and point-biserial correlations and significance levels for the four paper-and-pencil predictors and occupation, ideology, and sexual areas of ISI. Only those correlations that are significant at the .10 level or better are presented. The identity scales achieved many correlations with the criterion measures that were significant at the .05 level or less. Relatively few of the ISI area statuses achieved
### TABLE 5. FREQUENCIES FOR EACH STATUS IN EACH AREA

<table>
<thead>
<tr>
<th>Area</th>
<th>Status</th>
<th>Frequency</th>
<th>Crisis</th>
<th>Commitment</th>
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this level of significance. Consideration of the correlations between specific criterion scores and the identity measures follow.

DEr

In this research, the correlation component of the differential elevation score refers to the subject's ability to judge which of her friends rated her most highly. Of the accuracy of social perception scores, this was the one that was the best predicted by the paper-and-pencil identity scales. (The ISI-based measures were more capable of predicting the DAr, as described below.) However, all of the paper-and-pencil measures were negatively correlated with DEr, rather than in the positive direction hypothesized. On the other hand, certain ISI-based predictors had correlations in the theoretically appropriate directions: being in or through crisis in the area of occupation, the occupation statuses in general (where the statuses are coded 1 through 4, from diffusion to achievement), and being in foreclosure with respect to ideology. These correlations with the ISI are consistent with Erikson's suggestion of increasing psychological health with epigenetic development, not with the hypothesis that foreclosure is an adaptive status for females. The DEr is marginally but appropriately correlated with chronological age. This age difference suggests that the DEr may reflect a skill that increases with development.
**TABLE 6. CORRELATIONS BETWEEN PREDICTORS AND CRITERIA**

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**SAr**

In this study, Cronbach's stereotype accuracy component reflects the ability of the subject to judge how her friends rated her on the average. Of the identity measures, only the EISD is related to the SAr at a level that approaches significance. The SAr correlates with chronological age ($r=.2294$, $p=.043$). Again, this age difference suggests that there is some tendency for people to get better at this type of judgment with age.

**DAr**

In this study, Cronbach's differential accuracy component refers to the subject's ability to distinguish between how her friends rated her. The DAr has marginally significant positive correlations with being in achievement in occupation (as opposed to not being in achievement) and with being in diffusion in ideology, and a negative correlation with being in commitment in ideology. Only the correlation with achievement in occupation is in the hypothesized direction. The positive correlation with being in diffusion in ideology runs in direct opposition to both Erikson's theory and what other ISI research would lead one to expect. None of the paper-and-pencil identity measures were significantly related to DAr, and it does not correlate with age.
Real-Ideal Disparity (RID)

This measure is one of two measures used in this study to assess "unity of self". It is intended to assess the disparity between how the subject sees herself and how she would ideally like to be. In general, the lower the score, the greater the psychological health; however, researchers suggest that excessively low scores may reflect an individual's denial of shortcomings. Here the measure is treated as having a linear relationship to psychological health.

The RID is negatively correlated, as hypothesized, with all of the paper-and-pencil identity measures, suggesting that these measures are positively related to the unity measure of psychological health. Among the ISI-based predictors, it is negatively correlated with foreclosure in occupation. (Its correlation with commitment in occupation is due to the contribution of foreclosure to the commitment score.) Thus, those who are in a foreclosed status with respect to occupation perceive themselves as being closer to their ideals than those in the other statuses. This finding is in keeping with previous research rather than Erikson's theory. On the other hand, the small number of subjects in the committed statuses reduces the confidence one may have in the reliability of this finding.

The RID is very highly correlated with the ego-dispersion score, treated next, reflecting the close relationship of the two.
**Ego Dispersion**

This score also addresses the issue of unity of personality, this time also considering the degree to which one's real and ideal self-perceptions match how one believes others perceive one. Again, the lower the score, the greater the degree of unity.

As with the RID, the ego dispersion scores are strongly negatively correlated with the paper-and-pencil identity measures, as hypothesized. Among the ISI-based measures, being in foreclosure with respect to occupation is strongly negatively correlated with ego dispersion. The positive correlation with crisis (being in either moratorium or achievement) is the opposite of that predicted by the ISI hypothesis proposed from the standpoint of development, but is consistent with the hypothesis based on previous research. Achievement in the area of sexuality is negatively correlated with ego dispersion. This supports the epigenetic ISI hypotheses, which say that the achievement status should be the most positively related to the health criteria, rather than the hypothesis based on previous research. On the other hand, being in the moratorium status in sexuality is positively related to ego dispersion, suggesting that being in moratorium is negatively related to psychological health.

**Internality-Externality**

The lower the score on Rotter's I-E scale, the more the
person perceives herself as having control or mastery over her world. The I-E has strong negative correlations with all of the paper-and-pencil identity measures, all in the hypothesized direction. Among the ISI-based predictors, the I-E has significant negative correlations with being in the achievement statuses in occupation and ideology, supporting the hypothesis that achievement statuses should be positively related to psychological health. However, the I-E correlated positively with being in moratorium with respect to ideology, supporting the hypothesis based on past ISI research that being in the moratorium statuses is negatively related to psychological health.

The Convergent-Discriminant Hypotheses

These hypotheses state that the identity measures, both paper-and-pencil and the ISI, will be significantly correlated and that they will be more highly intercorrelated with each other than they are with the criterion measures of both similar and dissimilar methods. Evidence bearing on this hypothesis comes from two sources. The first is the matrix of correlation coefficients, presented in Table 7. The second is the results of hierarchical multiple regression runs.

Table 7 presents the correlations among the paper-and-pencil identity measures, the criterion measures, and the ISI measures. The correlations among the ISI predictors are omitted because no relationships within the areas have been proposed and because the dummy-coded variables are automatically intercorrelated within areas.
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### ISI

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### TABLE 7. CORRELATION MATRIX OF PREDICTORS AND CRITERIA

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<td>-.2430</td>
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</tbody>
</table>

78
Only the correlations that are significant at the .10 level or better per correlation are reported.

Considering just paper-and-pencil identity measures, the convergent-discriminant hypotheses appear to be supported. The average correlation of the EISD with the other paper-and-pencil identity measures is .70, whereas its average correlation with the criterion measures is .34 (absolute values are used in this section). Furthermore, the lowest correlation with another predictor (identity measure) (.6107) exceeds the highest correlation with a criterion measure (-.5672). Similarly, the EIST has an average correlation of .61 with the other predictor scales and .33 with the criterion measures. The lowest correlation with one of the other predictors (.5992) is not significantly exceeded by the highest correlation with a criterion measure (-.6072). The IPD has an average correlation of .75 with the other identity scales and a correlation of .40 with the criteria. The IPD correlates slightly more highly with the unity of self scales (-.6857 and -.6764 respectively) than with the EIST (.62). The IPD5 has an average correlation of .70 with the identity scales and .32 with the criteria. It correlates higher with the other identity measures than with any of the criterion measures. Thus, in general, it appears that the identity scales are more highly correlated with one-another than with the criterion measures of both same and different methods. Further evidence for the convergence of these measures comes from hierarchical multiple regressions (to be further explained below). In a hierarchically solved multiple regression (Cohen and Cohen, 1975) one predictor
is added at a time to the prediction model and each predictor added after the first is orthogonalized to all predictors that precede it. The significance of the first predictor's ability to predict the criteria is tested, then the significance of each of the succeeding predictor's abilities to add to the regression model is tested. Within this framework, highly convergent measures will exhibit a significant ability to predict the criteria only when they are added to the regression model first, but not when they are added to prior predictors. The results of the hierarchical multiple regressions will be presented in the section dealing with the comparison of measures. Here it will be noted that none of the identity scales could add significantly to the predictive power of the IPD, whereas the IPD could add to the predictive capabilities of all of the other identity scales and all of them together. These results suggest that the EISD, the EIST, and the IPD5 all converge with the IPD, at least with respect to their ability to significantly predict variance among the criteria, but that the IPD accounts for additional, criterion-related variance.

Another feature of the convergent-discriminant framework that supports the validity of the identity scales is the correlational pattern among the paper-and-pencil scales (EIST, EISD, IPD, IPD5, I-E, RID, and ego-dispersion). Among these scales, the identity measures intercorrelate highly, and they correlate substantially although not as highly with the criterion measures: the I-E, the RID, and ego dispersion. However, in comparison with their substantial correlations with the identity scales, the
mastery (I-E) and unity scales (RID and ego dispersion) have relatively low correlations (the I-E with the RID and the I-E with ego dispersion). This suggests that the criterion scales that are not closely related in theory are less correlated with each other than with the predictor variables with which they are theoretically more closely related. This suggests that method variance accounts for less of the correlations found in the overall matrix of paper-and-pencil measures than the trait variance accounts for. This provides strong support for the nomological validity of the identity measures.

When one considers the ISI-based predictors along with the identity scales, the convergent-discriminant hypotheses are clearly not supported. Even allowing that not all of the ISI predictors should be correlated or as highly correlated with the paper-and-pencil identity scales as these scales are correlated with each other, the highest correlation between an ISI-based measure and one of the identity scales is less than that identity scale's correlation with criterion measures of like method. Even considering the significant correlations between the ISI and the identity scales, the average correlation between the identity scales and the ISI measures is lower than the average correlation between the identity scales and the criterion measures of both like and unlike methods, including nonsignificant correlations. Thus, it is not true that the measures that are meant to assess the same construct (identity) correlate more highly with each other than with measures of different constructs using either like or unlike methods. Instead, the ISI measures
correlate with both the other predictors and the criteria at about the same level of significance, and the identity scales correlate with the criterion measures better than they do with the ISI measures.

Another result is relevant to the question of convergence. Only two ISI measures, when used as independent variables in a multivariate analysis of variance (MANOVA), were significantly related to the paper-and-pencil predictors or the criterion measures. With respect to the relationships between these ISI statuses and the other measures of identity development, being in foreclosure and in commitment in the area of occupation was significantly positively correlated with the identity scales (and to the criteria), whereas being in moratorium and not being in a committed status was significantly negatively correlated with the identity scales. Thus, foreclosures tend to score highest on the identity scales while moratorium and diffusion subjects tend to score the lowest. However, within the ISI framework, the highest level of identity development is achievement, while foreclosure is a relatively low level; yet, the identity scales do not correlate positively with achievement, they correlate most highly with foreclosure. This suggests a lack of convergence in the polarities of

1Briefly, a MANOVA is basically an analysis of variance (ANOVA) that tests the relationship of an independent variable with several dependent variables at once, rather than just a single dependent variable. The MANOVA is a more appropriate test than the ANOVA for the situation in which there are several dependent variables that are more important as a group than they are individually.
the identity scales with respect to the ISI. This further undermines the support for the convergent-discriminant hypotheses. However, the finding is in keeping with those of past ISI research that show foreclosed females doing well on measures of psychological adjustment.

General Predictive and Comparative Hypotheses

These hypotheses are both concerned with the abilities of the identity measures to act as predictors of the criterion measures considered as a group. "As a group" refers to the combination of the variances on the different criterion measures through the use of matrix algebra and the multiple regression model. This combination allows the relationship between the predictor(s) and the group of criteria to be tested by a single F statistic. The combination procedure taken uses a "least squares" solution to determine the best fit between the predictor(s) and the criteria for the data analyzed. The resulting F statistic weighs accounted-for variance against unaccounted-for variance, but unlike the use of several univariate regressions, the accounted and unaccounted for variances are corrected to eliminate the potential bias introduced by intercorrelations among the predictors and among the criteria. Where several univariate tests are undertaken to assess the relationships between a predictor and several intercorrelated criterion measures, the significances of those univariate tests provide only an indirect test of the ability of the predictor to account for variance among them and may imply either a greater or a lesser strength of
relationship through ignoring the intercorrelations among the criteria (which may be correlated or uncorrelated with the predictor). The multivariate approach is a valuable procedure when one is interested in the relationship between one measure (or group of measures) and a group of criterion measures where there is no theoretical basis for combining the scores on the different criterion measures (Finn & Mattson, 1978). This is the case in the present study: It is hypothesized here that the identity measures predict the criteria of psychological health. In addition, it is important for the identity measures to relate to as many of the criterion measures as possible. However, because Erikson does not specify the relative importances of the different criteria of health and because the measures of the criteria are imperfect to an unknown degree, there is no a priori way to combine the scores to provide a single criterion score without losing potentially important information (variance). In addition, the criterion measures are intercorrelated. Hence, a multivariate multiple regression approach was selected. An overview of multiple regression and the assessment of significance of multiple regression solutions is provided in Appendix F. Version VI of Finn's (1977) Multivariance program was used to perform the multiple regressions presented here. For the general predictive hypotheses, each identity predictor was tested for its ability to account for variance in the criterion measures by itself. Hierarchical multiple regressions were performed to evaluate the comparative hypothesis. Here, identity predictors were added to the regression model individually
or in groups, according to a hierarchical model, to determine the significance of the addition of each predictor or group of predictors to the regression model.

The General Predictive Hypothesis. In essence, this hypothesis takes the "specific predictive hypotheses" one step further. Each identity measure's validity is most strongly supported not by the significance of its relationships to individual criterion measures, but by the significance of its relationship to the criteria taken as a group. In order to address this issue, each identity measure was allowed to predict the criteria by itself, or in the case of the ISI, as a member of a group of predictors and individually. Thus, each status in the areas of occupation, ideology, and attitudes toward premarital sex was tested by itself for its ability to predict the criteria, and all of the statuses in each area were tested as groups to evaluate the predictive power of each area. Table 8 presents the F values, P values, and percentages of variance accounted for by the predictors for each of the criterion measures.

As indicated in Table 8, the EISD, the EIST, the IPD, and the IPD5 were all powerful predictors of the criteria as a group, although most of their general predictive power was due to their ability to account for the variances in the RID, ego dispersion, and I-E scale scores. In contrast, the ISI measures, either individually or in sets defined by the interview area, had nonsignificant predictive powers. Only the occupation area predictors approached significance (p=.13). In this area, being in foreclosure versus not being in foreclosure was the
### Table 8. The Significances of the Multivariate Predictions of the Identity Measures and the Univariate Variances Accounted for

<table>
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<th>Predictor</th>
<th>F</th>
<th>df</th>
<th>p</th>
<th>Percent of Variance Accounted For</th>
<th>DEr</th>
<th>SA2r</th>
<th>DAr</th>
<th>RID</th>
<th>EgoD</th>
<th>I-E</th>
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<td>0.37</td>
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</table>

#### Occupation

| Overall   | 1.41 | 18,136| .1382| 6.10 | 3.93 | 7.77 | 17.25| 17.26| 6.38 |
| Diffus    | .77  | 6,50  | .5958| 2.14 | .71  | .54  | 1.30 | .53  | 1.20 |
| Forecl    | 2.10 | 6,50  | .0698| 2.29 | 2.63 | .58  | 16.42| 17.06| .02  |
| Morat     | .70  | 6,50  | .6506| 2.20 | 2.66 | .12  | 1.15 | 2.55 | .21  |
| Achiev    | 1.66 | 6,50  | .1511| 1.63 | .03  | 7.28 | 1.17 | .68  | 5.72 |
| Crisis    | 1.46 | 6,50  | .2094| 5.18 | 3.29 | 1.31 | 3.00 | 4.59 | .72  |
| Commit    | .96  | 6,50  | .4614| .13  | 1.43 | 1.44 | 6.47 | 7.73 | 2.97 |

Significance level codes: p < .10 (*); p < .05 (**); p < .01 (**); p < .001 (****); p < .0001 (******). Asterisks appear below items.
<table>
<thead>
<tr>
<th>Predictor</th>
<th>F</th>
<th>df</th>
<th>p</th>
<th>Percent of Variance Accounted For</th>
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<td>SAr</td>
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<td>3.64</td>
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Significance Level Codes: p<.10 (*), p<.05 (**), p<.01 (***) ,
 p<.001 (****), p<.0001 (*****). Asterisks appear below items.
strongest predictor \((p=.07)\) due to its ability to predict RID and ego dispersion scores.

Based on these results, the general predictive hypothesis is supported for each of the paper-and-pencil identity scales. There is marginal support for certain occupation area predictors from the ISI, but in general, the ISI exhibited little predictive power. The cases in which the ISI measures did approach predictive significance may be due to chance.

**Comparative Hypothesis.** Given several different measures of a construct, it is likely that some will do better than others in accounting for the variance within the criteria. In order to investigate this possibility, the significances of the identity measures' contributions to the regression model were tested when they were added according to a hierarchical model. Only those measures that were significant or nearly significant predictors when used alone were used in the hierarchical models. (Sometimes predictors will not be significant when added to the regression equation first but will be when added after another variable that "suppresses" error variance in either the criterion or in the predictor. However, only the basic ability of the predictor to predict the criterion was considered to be important in this research. Therefore, identity measures whose ability to predict relied on suppression effects were not considered. See Cohen and Cohen, 1975, for a discussion of suppression effects.)

Table 9 presents the results of the hierarchical multiple regressions for the variables that showed
significant abilities to predict the criteria as a group. This table provides the F and p values of any significant additions to the variances accounted for among the criteria, both when the predictors were added first and when they were added after the other predictors. Each identity scale or status was added to the regression model first (column 1), after the other paper-and-pencil scales, (column 2), and after all of the ISI predictors and paper-and-pencil scales (column 3).

As indicated in Table 9, none of the ISI predictors could add significantly to the predictive powers of the paper-and-pencil identity measures, but all of the paper-and-pencil measures could add significantly to the predictive powers of the ISI predictors. Among the paper-and-pencil measures, none of the other measures could add significantly to the predictive powers of the IPD, but the IPD could add significantly to the predictive powers of all the other measures. The next strongest predictor is the EIST, followed by the IPD5, and the EISD. These results suggest that the IPD is the strongest predictor of the criteria of psychological health and that the other measures converge with the IPD and cannot add significantly to the ability of the IPD to predict. It should be noted, however, that all of the paper-and-pencil predictors are negatively correlated with DEr and DAr, contrary to the relationship hypothesized. Still, these relationships are relatively weak compared to the appropriate relationships with the RID, ego dispersion, and the I-E.
### TABLE 9. MULTIVARIATE HIERARCHICAL REGRESSION RESULTS

Position in which the predictor was added to the hierarchy of the multiple regression model

<table>
<thead>
<tr>
<th>Predictor</th>
<th>First</th>
<th>After (other)</th>
<th>Last</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>df  p</td>
<td>F</td>
</tr>
<tr>
<td>EISD</td>
<td>6.19</td>
<td>6.50 .001</td>
<td>.35</td>
</tr>
<tr>
<td>EIST</td>
<td>7.74</td>
<td>6.50 .001</td>
<td>2.06</td>
</tr>
<tr>
<td>IPD</td>
<td>13.63</td>
<td>6.50 .001</td>
<td>2.58</td>
</tr>
<tr>
<td>IPD5</td>
<td>6.66</td>
<td>6.50 .001</td>
<td>.54</td>
</tr>
</tbody>
</table>

**ISI**

**OCCUPATION**

| Overall   | 1.41    | 18.136 .138 | 1.19   | 18.125 .276   |
| Diff      | .77     | 6.50 .596   |        |              |
| Fore      | 2.10    | 6.50 .070   | 1.50   | 6.46 .199     | 1.25   | 6.38 .302     |
| Mora      | .70     | 6.50 .651   |        |              |
| Achv      | 1.66    | 6.50 .151   | 1.54   | 6.46 .188     | 2.19   | 6.38 .065     |
| Cris      | 1.46    | 6.50 .209   |        |              |
| Comm      | .96     | 6.50 .461   |        |              |
TABLE 9. MULTIVARIATE HIERARCHICAL REGRESSION RESULTS, continued

<table>
<thead>
<tr>
<th>Predictor</th>
<th>First F</th>
<th>df</th>
<th>p</th>
<th>After (other) F</th>
<th>df</th>
<th>p</th>
<th>Last F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDEOLOGY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>1.15</td>
<td>18,136</td>
<td>.310</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Diff</td>
<td>1.07</td>
<td>6,50</td>
<td>.390</td>
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<td></td>
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<tr>
<td>Fore</td>
<td>1.22</td>
<td>6,50</td>
<td>.310</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Mora</td>
<td>1.28</td>
<td>6,50</td>
<td>.282</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Achv</td>
<td>1.14</td>
<td>6,50</td>
<td>.354</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cris</td>
<td>.88</td>
<td>6,50</td>
<td>.517</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comm</td>
<td>1.88</td>
<td>6,50</td>
<td>.102</td>
<td>1.23</td>
<td>6,46</td>
<td>.307</td>
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</table>

SEXUALITY

<table>
<thead>
<tr>
<th>Predictor</th>
<th>First F</th>
<th>df</th>
<th>p</th>
<th>After (other) F</th>
<th>df</th>
<th>p</th>
<th>Last F</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>.50</td>
<td>18,136</td>
<td>.953</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Diff</td>
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<td>.949</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fore</td>
<td>.43</td>
<td>6,50</td>
<td>.852</td>
<td></td>
<td></td>
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<tr>
<td>Mora</td>
<td>.86</td>
<td>6,50</td>
<td>.527</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Achv</td>
<td>.59</td>
<td>6,50</td>
<td>.735</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cris</td>
<td>.44</td>
<td>6,50</td>
<td>.851</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comm</td>
<td>.81</td>
<td>6,50</td>
<td>.564</td>
<td></td>
<td></td>
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</table>
ISI HYPOTHESES

This section deals with the results as they bear on the questions of whether the foreclosed status is adaptive for women or whether identity achievement is most adaptive, and whether achievement in the area of sexuality is more important than achievement in other areas.

In accordance with Erikson's theory, we would expect that the most advanced ISI status would be the most strongly related to psychological health and that the least advanced status would be the most negatively related to the measures of psychological health. Based on past research, we may expect that the foreclosed status will be the status most positively related to unity of self measures because of their conceptual relationships with self-esteem, and we would expect that foreclosure and achievement statuses will be more similar to each other than to diffusion or moratorium statuses. Figures 1, 2, and 3 graph the relationships between the ISI and each of the criterion measures according to the statuses of occupation, ideology, and sexuality.

The relationships that support the Eriksonian relationships between the identity statuses and the psychological health criteria are that being in the achievement status with respect to occupation is significantly negatively correlated with the I-E (r=-.2391, p=.037) and positively correlated with differential accuracy (r=.2699, p=.021); being in achievement with respect to ideology is negatively correlated with the I-E
Figure I. Scores of Occupation Statuses on Criterion and Identity Scales
Figure 2. Scores of Ideology Statuses on Criterion and Identity Scales
Figure 3. Scores of Sexuality Statuses on Criterion and Identity Scales
(r=-.2788, p=.018); and being in achievement with respect to sexuality is negatively correlated with the RID and ego dispersion measures (r=-.2091, p=.059; r=-.2185, p=.051, respectively).

Supporting the relationships found in past ISI research are the findings that being in foreclosure with respect to occupation is negatively correlated with the RID and ego dispersion scales (r=-.4052 and r=-.4130, respectively, p less than .001). In addition, consistent with the past ISI research rather than Erikson's theory, being in the moratorium status in an area is often negatively correlated with the criteria of psychological health: being in moratorium with respect to ideology is the most positively correlated status with high I-E scores (indicating an external locus of control), and being in moratorium with respect to sexuality is the most positively correlated status with ego dispersion.

Contrary to both past research and Erikson's theory, being in diffusion in any of the areas appears to be uncorrelated or even positively correlated with the criteria of psychological health. For example, diffusion in the ideology area is correlated .2763 with DAr, but commitment in this area (foreclosure and achievement) is correlated -.2340 with DAr.

Supporting Erikson's theory is the finding that being in achievement in both occupation and ideology (and almost significantly in the sexuality area) is negatively correlated with the I-E scale, while being in foreclosure is positively correlated with the I-E scale if related at
all. This suggests that the achievement status subject is more likely to have an internal locus of control.

Another ISI hypothesis is that the area concerning attitudes toward premarital sex would be the most important area for the female subject population used. According to the ability to predict the criteria of psychological health, the sexuality area had no significant relationship to the criteria as a group and had the fewest significant correlations of the three ISI areas with the individual criterion measures and with the identity scales. Among these correlations, achievement in the area of sexuality was negatively correlated with the RID and ego dispersion measures, indicating greater unity of self, and nonsignificantly but negatively correlated with the I-E scale, suggesting a possible tendency to have a more internal locus of control. Being in moratorium was positively correlated with ego dispersion. Being in a committed status was negatively correlated with ego dispersion. Finally, being in or having had a crisis in this area was positively correlated with the IPD5.

Hypotheses Concerning the Paper-and-Pencil Identity Measures

Because the IPD5 subscale of the IPD is meant to measure stage 5 (Identity vs. Identity Diffusion) psychosocial development in particular, its relationship to the criteria and the other identity measures was explored in addition to the overall IPD. As noted in the various sections above, the IPD5 is a strong predictor of the criteria as a group.
and the RID, ego dispersion, and I-E scales in particular. It appears to be a stronger predictor of the criteria than the EISD, but weaker than the IPD and the EIST. These relationships tend to support the validity of the IPD5 scale. However, the IPD5 shares the lack of convergence with the ISI with the other paper-and-pencil measures: it correlates with foreclosure in both occupation and ideology areas.

Based on Dignan's (1965) finding that her scale correlated positively with maternal identification, it was hypothesized that this scale would correlate positively with the foreclosure status on the ISI. This relationship was borne out by the correlation of .4173 between foreclosure in occupation and the EISD. Also, while the IPD and IPD5 are also correlated with foreclosure in this area, the EISD is more highly correlated with the foreclosure status than either the IPD or the IPD5 (t=1.97, df=54, p=.06 between the IPD and the EISD; t=1.66, df=54, p=.10 between the IPD5 and the EISD).

Tan, et al., (1977) attempted to avoid having their EIST correlate with Marcia's (1966) foreclosure status by taking advantage of the positive relationship between authoritarianism and foreclosure. They constructed their measure so that it would correlate negatively with authoritarianism. Accordingly, it was hypothesized that this measure would correlate particularly well with achievement, rather than with foreclosure, as many measures of psychological adaptation do when used with female populations. This hypothesis was not supported. The EIST correlated positively, although nonsignificantly, with
foreclosure in occupation. (Only one of the correlations between the EIST and the ISI measures was significant.) However, this was the only paper-and-pencil identity measure that had a non-significant relationship with foreclosure. Also, the EIST was significantly less correlated with foreclosure in occupation than the EISD was (t=2.069, df=54, p less than .05).
DISCUSSION

The support that this study provides for the construct validities of the ISI, the EISD, the EIST, and the IPD is mixed, and as a consequence, the applicability of Erikson's theory to women has not been clearly supported here. A variety of approaches were taken to validation, from assessing correlations of pairs of predictor and criterion measures to evaluating evidence for convergence and discriminance among these correlations, to the prediction of groups of criteria. In general, the paper-and-pencil identity measures showed convergence among themselves and correlated with and predicted the unity of self and mastery criterion measures, but not the accuracy of perception of self and world criteria. In fact, significantly negative relations were found with the DER. The support provided for the validity of the ISI is modest at best, both for the hypotheses derived from Eriksonian theory and those derived from previous research. However, the result that proves most undermining of the validity of the identity measures is the lack of appropriate convergence between the paper-and-pencil measures, on the one hand, and the interview method, on the other. The identity scales
converged with foreclosure in the area of occupation and with commitment (foreclosure and achievement) in the area of ideology, rather than with achievement. Thus, these scales may measure not a theoretically high level of identity development, but rather, a theoretically low level. This, of course, assumes that the ISI is a valid instrument and that the seemingly face-valid dichotomies of crisis and commitment are important in general and important for women in particular. In fact, this lack of convergence of the paper-and-pencil scales with the ISI is mitigated for the scales by the lack of strong support for the validity of the ISI. Still, this research does provide at least some support for the construct validities of both paper-and-pencil and interview measures of identity development.

The more detailed discussion of the results of this study will begin with the consideration of the limitations of this study, then move to a discussion concerning the validities of the measures, a comparison of the measures, and a consideration of whether foreclosure is an adaptive status for females and the importance of sexuality to identity for the female. This section will conclude with recommendations for further research.

LIMITATIONS OF THE RESEARCH

The positive and negative results of this study could be related to three types of artifacts or problems, rather than true differences among subjects. These limitations
should be kept in mind in drawing inferences from the results. The three types of artifacts involve: the sample, the design of the study, and the measurement instruments used for criterion measures.

With respect to the sample, the research was performed at a conservative, academically demanding, liberal arts school, the College of William and Mary. The students at this school tend to hold conservative political beliefs if any, and they tend to stress academic and professional goals heavily. This sample may have resulted in a truncated range in the types of subjects studied. Still, such sample limitations are common in this research: Much of Waterman's research involved students at Renssalaer Polytechnical Institute, another school that tends to be career and academically oriented. Also, Dignan's research used girls from a Catholic women's college.

In addition to a possibly non-representative overall sample of the age group, relatively few students were obtained who were in the committed statuses with respect to occupation. This may have been due to the predominantly freshman and sophomore composition of the sample. Also, few subjects appeared to be diffused in the area of sexuality. The low number of subjects in these statuses in these areas limits the amount of confidence we may have that our results in these areas are representative of the performance of larger samples.

The design of the study may also have led to biases in the results. In particular, the ISI and the paper-and-pencil measures were always given separately,
often with an interval of two weeks or more between them. The paper-and-pencil identity measures were always administered together. The separate administration of the ISI from the other identity measures was intended to reduce reactivity. It was felt that the experience of being asked the ISI questions might influence the answers given on the paper-and-pencil scales by sensitizing the subjects to the issues that the research addressed and to do so to a greater degree than the paper-and-pencil measures would for each other. The results obtained with the measures when administered together might not be representative of the results that would be obtained for the measures when given separately. This reduces the confidence one may have in the measures when applied alone.

The interval between testings also introduced a test-retest reliability factor. This factor almost automatically reduces the correlation between two different measures of a construct when they are given on separate occasions. Thus, the correlations between the ISI and the paper-and-pencil scales may have been reduced by this test-retest reliability factor as well as by the differences between what the tests measured. This "temporal" reliability factor also tends to reduce correlations between any pairs of measures, predictor or criterion, given in separate sessions. Conversely, the paper-and-pencil measures were always administered together, thereby almost eliminating the test-retest effect and maximizing correlations.

Finally, the design was cross-sectional rather than longitudinal. As such, the results are only suggestive of
the nature of longitudinal changes: a longitudinal design is necessary to show that development involves increases in mastery, unity, accuracy of perception, and identity scores.

The criterion measures used in this study may also have contributed to the failure to find some of the hypothesized relationships (as well as the finding of positive relationships that might actually have only reflected method variance). For example, the unity of self measures are both measures that could have curvilinear relationships with other indices of psychological health. It was assumed that this relationship would not exist in the population studied because other researchers have failed to find curvilinear relationships with similar measures in identity research (Block, 1961; Dignan, 1965). Still, it is difficult to establish the absence of a curvilinear relationship without some clearly linear reference. While it is likely that one of the other scales would provide this reference, it is possible that the different scales could show the same curvilinear trends, thereby hiding the nonlinear aspect of any one scale. This may have been true, for example, for Dignan's (1965) finding that her scale correlated positively with maternal identification: degree of maternal identification and EISD scores may both have had nonlinear relationships to some criterion of psychological health, but their similar nonlinearity may have been hidden in their strong correlations. Consequently, the possibility that foreclosed subjects had defensively high real-ideal disparities (Shlien, 1962) remains a nagging doubt.
Perhaps the greatest difficulty with the criterion measures was with the accuracy of perception measures. These measures yielded relatively few significant correlations and none over .30. This relative lack of relationships may have reflected the methodological remoteness of these measures from the other measures used, but this may have also reflected a variety of difficulties inherent in such measures. First, it may be an exceedingly difficult task for all subjects to predict how their friends see them. Kelley (1971), Jones and Nisbett (1971), and Ross (1977) depict the individual as an intuitive psychologist who makes attributions concerning the causes of his or her own and other's behaviors. These researchers have found that "intuitive psychologists" make certain types of errors: they tend to overemphasize the importance of dispositional variables and underemphasize the importance of situational variables in explaining the behavior of others, while overemphasizing the importance of situational variables and underestimating the importance of dispositional variables in explaining their own behaviors. This combination of attributional tendencies operates both when the subject rates herself as she believes each of her friends rated her and when each of the friends rate the subject. Compensating for the complexity of this attributional process may be almost impossible when using a global list of adjectives.

Several other confounds may be involved here. Each subject had different friends, and these friends may have varied in their ability to rate the subjects. This variation could be related to subject variables, such as
identity status, as well. Finally, Cline (1964) points out potential difficulties with Cronbach's DEr, SAr, and DAr scores. Based upon his comments, the SAr scores used in the present study are the most defensible of the perception scores used, but not for the purpose of establishing differential accuracy. Cline proposed the use of a modified differential accuracy score. Whether this change would lead to a change in results is open to speculation.

Another measurement-related aspect of this study that may have influenced the results is that no "overall status" was used for the ISI. It may be that the composite of the area statuses would have most clearly shown the relationships hypothesized with the criteria. On the other hand, the generation of overall statuses for each subject would have increased the role of rather subjective decision-making in the measurement process.

**EVIDENCE FOR THE VALIDITIES OF THE IDENTITY MEASURES**

As noted above, the paper-and-pencil identity scales showed strong relations with the criteria of psychological health on the average, while the ISI showed relatively weak relationships. This evidence is considered in more detail here. In this section, the paper-and-pencil scales will be considered as a group because their patterns of relationships are very similar to each other.

The validity of the paper-and-pencil identity measures is supported by the convergence they demonstrate with each other and by their correlations with the criterion measures.
of mastery and unity of self. In accordance with Campbell and Fiske's (1959) convergent-discriminant model, these scales correlate more highly with each other than with the criterion measures, but still, correlate strongly with the criterion measures of unity of self (the RID and ego dispersion) and mastery (Rotter's I-E scale). While all are paper-and-pencil based scales, there is some evidence that the contribution of method is relatively low: the correlations between the I-E scale and the RID and ego dispersion scales are relatively low (.24 and .26), while the correlations between the identity scales and the I-E, RID, and ego dispersion scales are all two to three times the magnitude found between the two types of criterion measures (unity of self and mastery). Furthermore, the correlation between the mastery and unity criteria need not be just due to method variance. It is likely that a person who experiences greater mastery will also experience more unity of self. Thus, the nomological importance of both unity of self and mastery to ego identity is supported by the very high correlations between the former and the latter, while the more distant nomological relationship between unity of self and mastery is evidenced by a moderate correlation. This suggests that the identity scales measure a construct that somehow combines unity and mastery and that unity and mastery are not equivalent.

The multiple regression solutions also provide strong support for the identity scales. All of the paper-and-pencil identity measures proved to be strong predictors of the criteria as a group, although this was primarily due to the strong relationships of the predictors
to the unity and mastery criteria. They had significantly negative correlations with the DEr accuracy of perception measure and no clear relationships with the other accuracy criteria. However, the appropriateness and validity of these criteria is open to greater doubt than the other criterion measures: Both the I-E and the real-ideal disparity measures have extensive support in the literature, while the accuracy of perception measures have mixed support at best. Also, the DEr score is not the most important aspect of accuracy of perception. In addition to the ability of each identity of each identity scale to predict the criteria as a group, the hierarchical multiple regression solutions indicated that their predictive abilities showed a high level of convergence: only the IPD was able to predict significantly more of the variance than the other scales. (The EIST came close to doing so as well.) Thus, taken as a group, the identity scales (the IPD, the EISD, and the EIST), show appropriate convergence and discriminance, and prove to be strong predictors of the criteria taken as a group.

The validity of the ISI for women is not clearly supported. While the area of occupation was the strongest predictor for the criteria as a group and the only area that approached significance (p=.13), the pattern of the relationships is not completely consistent with Erikson's theory. In particular, while achievers in the area of occupation showed the greatest mastery, foreclosures in this area showed the greatest unity of self (which is related to self-esteem by Shlien, 1962). This latter finding is consistent with previous findings with the ISI
for female subjects (Marcia and Friedman, 1970; Schenkel and Marcia, 1972). The accuracy of perception measures provide some support for Erikson's theory: having gone through or being in crisis (being in the status of moratorium or of achievement) is positively correlated with the DER, and being in the achievement status in occupation is correlated with differential accuracy (DAR). Thus, for the area of occupation, achievement appears to be the superior status in terms of mastery and accuracy of perception, but foreclosure appears to be the superior status with respect to unity of self. Being in moratorium with respect to occupation is little better than being in diffusion. The two statuses are approximately matched in their performance on the unity, SAR, and DAR criteria. The moratorium subjects are nonsignificantly more internal and have higher DER scores than those in diffusion.

The area of ideology had no significant ability to predict the criteria as a group and showed fewer significant correlations with individual criteria than the occupation area. Status in this area was not related to unity of self. Achievers showed the highest levels of mastery, but moratorium subjects showed the lowest. This is more in keeping with past ISI research (where the moratorium status usually appears to be one of the least adaptive statuses) than with Erikson's theory, which would lead us to expect the moratorium status to be a relatively adaptive status. With respect to accuracy of perception, diffusers in the area of ideology achieved the highest levels of differential accuracy. This finding is completely inconsistent with Erikson's theory. Past ISI
research has often revealed that ideology is a less significant area than the others in the prediction of criteria. Overall, it appears that the area of ideology is related to psychological health issues mainly among those who have a personal involvement in this area. These would be the subjects in moratorium and achievement. Among these subjects, there is an appropriate relationship between relative developmental level and mastery. These results do raise the question of the importance of ideology to identity, since the lack of personal involvement in this area (via crisis) is not associated with psychological health variables.

The area of attitudes toward premarital sex showed no significant ability to predict the criteria of psychological health as a group and had the fewest significant relationships with individual criteria. Achievement status subjects showed the greatest unity of self, as predicted by Erikson's theory, but being in moratorium showed the least unity of self. Being in the achievement status was also associated with the highest levels of mastery and being in foreclosure was associated with the least, but this was not significant. In general, while being in achievement in this area showed some relationships with the psychological health criteria, these relationships were relatively weak and are with single criteria rather than the criteria as a whole. These findings do not support the hypothesis that sexual issues are central to the woman's identity development and also call into question the ability of the questions in this area to tap theoretically important variance.
All in all, the ISI's validity has mixed support. In accordance with Erikson's theory, being in the achievement status was associated with some evidence of greater psychological health than the other statuses. However, being in foreclosure in occupation was associated with greater unity of self, paralleling past ISI research findings with self-esteem. Being in diffusion was not the least "psychologically healthy" status: this privilege often fell to moratorium. There is thus no evidence of a gradually increasing level of psychological health as subjects proceed through identity stage issues and statuses, although the achievement status may be associated with higher psychological health in some areas. It could be argued, however, that the measures of psychological health used here are sensitive to the stress that the individual is undergoing. If so, subjects in moratorium may appear to be less psychologically healthy because of the stressful issues that they face, the defining characteristic of the status. While under stress, these subjects may feel less adequate, act in less consistent ways, and have a less clear picture of themselves and their abilities, which would be needed for perceptual accuracy and the perception of mastery. Yet, the ability of these subjects to withstand this turmoil may reflect some underlying "ego strength" that is closer to Erikson's concept of psychological health than the overt levels of health reflected in the criterion measures.

Again, the result that threatens the validity of the identity measures the most is the lack of appropriate convergence between the ISI and the identity scales. The
scales converge with foreclosure in the area of occupation and ideology. Thus, obtaining high scores on the identity scales predicts being in one of the supposedly less developed identity statuses. This raises the issues of whether these instruments measure the same thing, identity, and whether method variance may account for the apparent support for the validity of the paper-and-pencil scales. Still, the support obtained in this study for the validity of the ISI for use with women is minimal, especially compared to the support provided for the identity scales. Consequently, the lack of "appropriate" convergence cannot be seen as a clear indictment of the identity scales.

**COMPARISON OF MEASURES**

The lack of a strong or appropriate convergence between the ISI and the paper-and-pencil identity scales provides both the major point of comparison and demonstrates the lack of comparability between these measures. The identity scales were strongly validated by the unity of self and mastery scales, and they showed good convergent-discriminant validity among themselves. From the standpoint of predictive validation, the ISI was not strongly supported. Still, from the standpoint of Campbell and Fiske's (1959) multitrait-multimethod approach, the strong relationships found among the identity scales and the unity of self and mastery scales can be faulted for shared method, while none of the ISI's relationships can be criticized for this.
Based on the differences in rationale, methods, and results found in this study for the ISI and the identity scales, it appears that the ISI and the identity scales measure different things. The ISI appears to consider primarily independence from parents and commitment to social roles. The identity scales (despite their shared method variance with several of the criteria), appear to measure aspects of self-perception: the coherence of social and private self-perceptions, and mastery over one's world (addressing only areas studied here). Both the ISI and the scales may thus measure aspects of Erikson's identity development. Yet, at least from the standpoint of Jahoda's criteria of psychological health, the identity scales appear to address more central aspects of ego identity (or just ego) development. The ISI and the identity scales are not interchangeable and neither can be preferred over the other for the measurement of identity development except to the extent that one may be particularly interested in the constructs measured by one or the other type of instrument.

While the ISI and the identity scales may not be directly comparable, the paper-and-pencil identity scales do appear to measure the same sorts of things, and therefore, the question of which is the best predictor can be posed. From the hierarchical multiple regressions, it is clear that the IPD full-scale score is capable of predicting significantly more variance among the health criteria than the EISD, the EIST, or the IPD5. In fact, it is capable of predicting significant additional variance over that predicted by all of the other identity scales.
together. Its correlations with the I-E and unity of self scales all exceed .5, and it accounts for over a quarter of the variance of the I-E scale and almost half the variance of the unity of self scales. This is true despite the relatively low intercorrelations of the I-E and unity of self scales. As such, the use of the IPD full-scale score in ego identity development research is strongly supported.

The EISD, the EIST, and the IPD5 are not poor measures of ego identity (or ego) development, though. All of these measures achieved correlations with the unity of self and mastery criteria of between -.41 and -.61. Researchers may have reason to prefer one of these. The EIST may be preferred for its brevity, its predictive power (second only to the IPD), and its relatively low correlation with foreclosure on the ISI. The IPD5's advantage is primarily that it is part of a scale that measures more than one Eriksonian stage. The EISD has the least to recommend it: of the identity scales, it correlates the most highly with the foreclosure status, and it is the weakest predictor of the criteria taken as a group. Still, its correlations with the unity and mastery criteria range from -.41 to -.57.

**IS FORECLOSURE AN ADAPTIVE STATUS FOR FEMALES?**

Marcia (Marcia, 1980; Marcia and Friedman, 1970; Schenkel and Marcia, 1972) and Waterman (1982) suggest that foreclosure may be an adaptive status for females: foreclosed females tend to be low in anxiety, high in
self-esteem, and able to withstand social conformance pressure. Moratorium females, they note, appear to have more in common with diffusion status females in being high in anxiety and low in self-esteem. Achievement status females might have self-esteem equal to or higher than foreclosed females, but they often have higher levels of anxiety than foreclosed subjects and have been found to have the lowest levels of self-esteem in Marcia and Friedman's (1970) study. In this study, females foreclosed in the area of occupation had the highest unity of self scores and scored highest on the paper-and-pencil identity scales. Foreclosures in the area of ideology also tended to score high on the identity scales, though not significantly higher than achievers. In contrast, achievers in all three areas obtained the lowest I-E scores, indicating the highest levels of mastery. Achievers in the area of sexuality also had the greatest unity of self (lowest RID and ego dispersion) scores of the statuses in that area. Being in moratorium in the area of sexuality was related to less unity of self.

These results provide mixed support for the hypothesis that foreclosed status is adaptive for females. While females in foreclosure in occupational areas have the greatest unity of self scores, achievers in all areas had scores indicating the highest levels of mastery. It may be argued that, given some "adequate" level of unity of self, mastery may be a more important quality than unity of self. A high level of unity of self may be a comfortable state, but the perception of control (low I-E scores) appears to lead to greater efforts to take control of one's life. I-E
research has found that low scorers on the scale (indicating greater mastery) tend to be more successful in problem solving, more able to influence others, and more efficient, and to obtain higher GPA's than subjects obtaining high scores on the measure. Other researchers have also found achievement status females scoring lowest on the I-E scale (Adams and Shea, 1979; Howard, 1975).

While the high correlation of the foreclosure status with unity of self may reflect a state of psychological health, it is possible that these subjects have the "defensively high" unity of self discussed by Shlien (1962). (Shlien refers to the real-ideal disparity as a measure of self-esteem.) The possibility of a U-shaped relationship between the identity scales has been raised by Dignan (1965), but it has been impossible to determine at what point unity of self and identity scores become maladaptively high because no clear standard for linearity has been included in past or the present research. It is possible that a social-desirability scale might help identify excessively high unity. The relatively high scores of foreclosed subjects on the I-E scale does suggest that the high unity scores of foreclosed subjects is not entirely warranted.

In general, then, the hypothesis that foreclosure is an adaptive status for females is not strongly supported here. The higher mastery scores for the achievement-status subjects of all areas does suggest that this status may be the most adaptive. In addition to mastery, occupation-area achievers obtained higher DAr scores than the other occupation area statuses, and achievers in the area of
sexuality had higher levels of unity.

It may be argued that past support for the adaptiveness of foreclosure for females and the mixed support found for this hypothesis is due to cohort effects: whereas women breaking from tradition (moratorium and achievement) once had little support, they have greater support now, thereby reducing psychological stress and allowing increased opportunities for identity choices. Such a social change might well account for the differences found in the characteristics associated with achievement and foreclosure status females. Consistent with this, Erikson (1968) recognized that changes in society could change how females' (and males') identities would be manifested. But he would probably not give foreclosure a stamp of approval. Evidence for the adaptability of foreclosure might be questioned or the determination of foreclosure itself might be doubted. With respect to the ISI, this might mean that apparent foreclosure in the areas of occupation, ideology, and attitudes toward premarital sex all somehow missed the achieved aspects of the woman's identity where society prevented overt expression of individuality. Of course, this possibility remains conjecture. At present, then, it appears that the characteristics of females in the different statuses have fluctuated over time. This may be due to differences in validation instruments and sample idiosyncracies, or it may reflect the sensitivity of the ISI to cohort effects.

While this research does not suggest that foreclosure is a particularly adaptive state for females, this research does bear out past ISI research in its finding that female
moratorium subjects do poorly on criterion measures. Subjects in moratorium in the areas of occupation and ideology have the lowest scores on the identity scales, moratorium in ideology is associated with the most external scores on the I-E, and moratorium in sexuality is associated with the lowest unity scores. These findings tend to argue against Erikson's thesis that advancements in epigenetic development are associated with increases in psychological health. However, moratorium is presumably a period of change in adaptation. Such a change in adaptation is presumably healthy and may reflect greater flexibility than being in foreclosure indicates. The apparent lack of psychological health indicated by the criterion measures in the present study may reflect the sensitivity of the scales to the turmoil of the subject in moratorium.

ATTITUDES TOWARD PREMARITAL SEX AND IDENTITY

Is the ISI's "attitudes toward premarital sex" area the most important area for women? Does it address the "inner-space" issue posited by Erikson?

This research generally does not support the significance of the attitudes toward premarital sex questions as predictors of psychological health. There was some weak evidence that achievement in this area is correlated with unity of self (significant at the .05 level) and mastery ($r=-.17$, n.s.), but this area was much less strongly related to the psychological health criteria
than the area of occupation.

Dignan's finding that her EISD correlated positively with maternal identification has repeatedly been used as evidence that sexual issues may be the most important issues for the female's ego identity (Marcia and Friedman, 1972; Schenkel and Marcia, 1972). The present research casts this argument in doubt. The EISD showed no significant correlation with sex-area statuses but correlated strongly with foreclosure in occupation. This implies that maternal identification could be a characteristic of foreclosure rather than a high level of identity development.

In general, the relative importance of occupation for females and the weak predictive power of the sex area statuses raises questions concerning Erikson's theory and the ISI treatment of sexual issues. However, in reviewing Erikson's discussion of the importance of the "inner space", it is not clear that the attitudes toward premarital sex questions fully address Erikson's theory. Schenkel and Marcia's (1972) scoring instructions emphasize the role of the woman's questioning of sexual standards in the assessment of her sex-area status. In order to be in achievement, the female must have seriously questioned her standards. In the interviews conducted in this research, many females said that their parents or mothers did not argue for or against premarital sex or strict sexual standards. Instead, many mothers had stressed the importance of caring in sex. Thus, these females were provided a flexible set of rules to live by. It is difficult to imagine the value of seriously questioning
such sexual guidelines. These subjects were often judged to be in foreclosure. However, it may be more important for the female (or male) to have guidelines concerning sexual expression that are non-destructive and facilitative of the process of selecting a mate with whom one can form a mutually rewarding relationship. Some females may be provided such guidelines by their parents, while other parents may burden their daughters and sons with guidelines that prevent either the formation of any sexual relationships or the formation of rewarding ones. Females provided with flexible guidelines have no need for crisis, but parental advocacy of inflexible guidelines may require crisis.

This suggested relationship between crisis, commitment, and the flexibility of guidelines is supported by Erikson's statement that moratorium with respect to the inner space is resolved when something is accepted for admittance to that space "for keeps" (p. 283, 1968). "For keeps" implies a lot more than just having comfortable guidelines for sexual expression or crisis and commitment concerning these guidelines. Erikson clearly indicates that this moratorium ends with the establishment of a relationship. Given this, identity researchers should evaluate not crisis and commitment, but first whether the woman has flexible guidelines for sexual expression and, second, whether she has established a long-term relationship. These factors should be better predictors of psychological health and be more in keeping with Erikson's theory than the application of the crisis and commitment dimensions used in the other areas of the ISI. After all, Erikson argues that the
woman's inner space orientation is biologically determined. If we are at home with our biological identities, then there is no need to go through a crisis or period of questioning in this area. Questioning might, in fact, be more indicative of difficulty than of health. Many aspects of sexuality are presumably largely determined by biological factors. This is in contrast to the role of society in occupational choice and ideological belief.

As a consequence of the difficulties noted here concerning the sexuality area, little can be inferred about the validity of Erikson's theory. The ISI's attitudes toward premarital sex questions may not have been strong predictors, but they also do not appear to get at the issues that Erikson felt are important to the female's identity.

RECOMMENDATIONS

The comparison of the EISD, EIST, IPD, and ISI highlights the multidimensional nature of Erikson's concept of ego identity development and the apparent inability of any single instrument now in existence to capture all aspects. In addition, it does not seem likely that the use of single scores can attain the objective of measuring identity development. Consequently, it is recommended that further investigations use measures refined in the assessment of these different aspects. The results of these different measures might be combined into a profile, such as is found with the MMPI. Such profiles might be
better able to predict outcomes and be more useful in clinical settings than the present scales and interview. Conceivably, such a measure might include a traditional identity measure, such as the EIST or the IPD, a measure of self-esteem, a measure of locus of control, and a measure of authoritarianism. In addition, elements of the ISI might be included in interview format. Crisis and commitment could be rated as to intensity, and the need for crisis might also be considered. Sexuality issues could be explored to determine whether the individual is in conflict in this area and whether he or she has or is developing guidelines for sexual expression that have the potential for leading, without major revision (via questioning or crisis) to a fulfilling relationship with another.

Regardless of whether identity research moves toward the use of profiles, it may be valuable for ISI researchers to experiment with different ways of evaluating their subject's responses concerning sexuality.

Finally, it is recommended that researchers attempt longitudinal designs, which are more appropriate (and more difficult) to the study of developmental constructs and changes than the cross-sectional approach used here.
APPENDIX A

MARCIA'S (1966) IDENTITY STATUS INTERVIEW
(Note: Underlined words represent modifications or additions in the original sets of questions.)

"What does your father do? Did he go to college? Where? What does your mother do? Did she go to college? Where?"

**Occupation**

"You said you were majoring in _; what do you plan to do with it? When did you come to decide on _? How did you get interested in it? Did you ever consider anything else? How seriously did you consider these alternatives? What seems attractive about _? Most parents have plans for their children, things they'd like to see them go into or do -- did yours have any plans like that for you? How do your folks feel about your plans now? How willing do you think you'd be to change this if something better came along?". (If subject responds: "What do you mean better?") "Well, what might be better in your terms?". (Note: If the subject responds that he would be willing to change, ask him what he would change to.)

**Religion**

"Do you have any particular religious affiliation or preference? How about your folks? Ever very active in church? How about now? Get into many religious discussions? How do your parents feel about your religious beliefs now? Are your beliefs any different from theirs? Was there any time when you came to doubt any of your religious beliefs? When? How did it happen? How did you resolve your questions? How are things for you now? How important is religion for you?"

**Politics**

"Do you have any particular political preference (party or point of view)? How about your parents? Ever take any kind of political action -- join groups, participate in demonstrations -- anything at all like that? Any political issues you feel pretty strongly about? How do your parents feel about these issues? Any particular time when you decided on your political beliefs? What do you think of the upcoming election?"
Attitudes Toward Premarital Intercourse

"With increasingly effective and convenient means of birth control there has been much thought about sexual activity and morality. Do you have any thoughts about these issues? What do you think about premarital intercourse? What are your reasons for feeling this way?". (For those favoring premarital intercourse) "How do you go about deciding whether or not you will sleep with someone -- circumstances, length of relationship, quality of relationship, intensity, etc.? Under what circumstances would you NOT sleep with someone? Have you always felt this way? Have you ever had any doubts? How did you resolve them? What made you change your mind? Do you have any conflict about these issues now, either in theory or in practice? Could you give me an example? How do you handle them? How frequently do they occur? What would your parents think about your sexual views and behavior? How do your views differ from theirs?". (Marcia & Friedman, 1970)

"OK, now we have talked about four areas: occupation, religion, politics, and your views on premarital sex. Of these four areas, which is the most important to you, of the most concern to you? Next most important? Third? Last? (Be sure to point out that you are asking about attitudes toward premarital sex, not sex itself.)

"Are there any other areas or issues, other than the ones we have discussed that you would say are important to you as a person, important to your sense of self (who you are):"
APPENDIX B

EGO IDENTITY DEVELOPMENT SCALES

CONSTANTINOPLE'S (1969) IPD

DIGNAN'S (1963) EISD

TAN, KENDIS, FINE, AND PORAC'S (1977) EIST
CONSTANTINOPLE'S (1969) INVENTORY
OF PSYCHOSOCIAL DEVELOPMENT (IPD)

Following these instructions you will find a list of 60 terms and phrases which can be used to describe oneself. Please use the list to describe yourself as you honestly feel and believe you are. Following each phrase are numbers from 1 to 7. Circle the 1 for phrases that are definitely most uncharacteristic of you, the 2 for phrases that are very uncharacteristic of you, etc. Circle the 7 if the phrase is definitely most characteristic of you.

1 = definitely most UNcharacteristic of you
2 = very UNcharacteristic of you
3 = somewhat UNcharacteristic of you
4 = neither characteristic of you nor uncharacteristic of you
5 = somewhat Characteristic of you
6 = very Characteristic of you
7 = definitely Characteristic of you

Be sure when you do these ratings that you are guided by your best judgement of the way you really are. There is no need to ponder your ratings excessively; your first impressions are generally best. Do the phrases in order. Be sure to answer every item.

1. placid and untroubled
2. an automatic response to all situations
3. adventuresome
4. can't fulfill my ambitions
5. confidence is brimming over
6. little regard for the rest of the world
7. incapable of absorbing frustration and everything frustrates me

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<th>Characteristic</th>
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<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
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</tbody>
</table>
8. value independence above security 1 2 3 4 5 6 7
9. sexually blunted 1 2 3 4 5 6 7
10. conscientious and hard working 1 2 3 4 5 6 7

11. a poseur, all facade and pretence 1 2 3 4 5 6 7
12. candid, not afraid
to expose myself 1 2 3 4 5 6 7
13. accessible to new ideas 1 2 3 4 5 6 7
14. meticulous and over-organized 1 2 3 4 5 6 7
15. dynamic 1 2 3 4 5 6 7

16. don't apply myself fully 1 2 3 4 5 6 7
17. natural and genuine 1 2 3 4 5 6 7
18. preoccupied with myself 1 2 3 4 5 6 7
19. can't share anything 1 2 3 4 5 6 7
20. free and spontaneous 1 2 3 4 5 6 7

21. afraid of impotence 1 2 3 4 5 6 7
22. interested in learning and like
to study 1 2 3 4 5 6 7
23. spread myself thin 1 2 3 4 5 6 7
24. warm and friendly 1 2 3 4 5 6 7
25. imperturbable optimist 1 2 3 4 5 6 7

26. cautious, hesitant, doubting 1 2 3 4 5 6 7
27. ambitious 1 2 3 4 5 6 7
28. fritter away my time 1 2 3 4 5 6 7
29. poised 1 2 3 4 5 6 7
30. very lonely 1 2 3 4 5 6 7

31. pessimistic, little hope 1 2 3 4 5 6 7
32. stand on my own two feet 1 2 3 4 5 6 7
33. think too much about the wrong
things 1 2 3 4 5 6 7
34. serious, have high standards 1 2 3 4 5 6 7
35. attempt to appear at ease 1 2 3 4 5 6 7

36. have sympathetic concern
for others 1 2 3 4 5 6 7
37. able to take things as they come 1 2 3 4 5 6 7
38. feel as if I were being followed 1 2 3 4 5 6 7
39. inventive, delight in finding new
solutions to new problems 1 2 3 4 5 6 7
40. ineffective, don't amount to much 1 2 3 4 5 6 7

41. know who I am and what I want
out of life 1 2 3 4 5 6 7
42. cold and remote 1 2 3 4 5 6 7
43. dim nostalgia for lost paradise 1 2 3 4 5 6 7
44. quietly go my own way 1 2 3 4 5 6 7
45. big smoke but no fire 1 2 3 4 5 6 7

46. accomplish much, truly productive 1 2 3 4 5 6 7
47. never know how I feel  1 2 3 4 5 6 7
48. tactful in personal relations  1 2 3 4 5 6 7
49. deep, unshakable faith in myself  1 2 3 4 5 6 7
50. always in the wrong, apologetic  1 2 3 4 5 6 7

51. sexually aware  1 2 3 4 5 6 7
52. a playboy, always "hacking around"  1 2 3 4 5 6 7
53. pride in my own character and values  1 2 3 4 5 6 7
54. secretly oblivious to the opinions of others  1 2 3 4 5 6 7
55. never get what I really want  1 2 3 4 5 6 7

56. good judge of when to comply and assert myself  1 2 3 4 5 6 7
57. inhibited and self-restricted  1 2 3 4 5 6 7
58. excel in my work  1 2 3 4 5 6 7
59. afraid of commitment  1 2 3 4 5 6 7
60. comfortable in intimate relationships  1 2 3 4 5 6 7
DIGNAN'S (1963) EGO IDENTITY SCALE (EISD)

Please read each of the following statements and rate it as to how well it describes you as you honestly see yourself, using the six-point scale provided. Circle the number that corresponds to your choice.

"1" DISAGREE STRONGLY
"2" DISAGREE MODERATELY
"3" DISAGREE SLIGHTLY
"4" AGREE SLIGHTLY
"5" AGREE MODERATELY
"6" AGREE STRONGLY

1. It seems to me that the arts, politics, current events, science and things aside from my main pursuits make life interesting and exciting

2. I feel that I am respected by everyone for what I am.

3. What I am now is pretty much what I am going to be.

4. I am more myself now than I was in high school.

5. I like to picture myself as someone else.

6. I believe I see myself pretty much as others see me.

7. I have no regrets for having become what I am.

8. People who work with me find that I know what I'm after.

9. From day to day, I'm just the same.

10. I'm tired of acting roles all the time: I want to be myself.

11. I would like to be something other than I am.
12. Sexual matters no longer bother me much. 1 2 3 4 5 6
13. People seldom mistake me for another male/female. 1 2 3 4 5 6
14. My problem is that I don't really know what I would like to become. 1 2 3 4 5 6
15. First I try to be like one person I know, then another. 1 2 3 4 5 6
16. It is easier to lay aside my principles than to fight for them against opposition 1 2 3 4 5 6
17. I believe I know most of my strong points. 1 2 3 4 5 6
18. My roommates/friends complain because I always seem to know what I want. 1 2 3 4 5 6
19. I experience a real sense of pride in my accomplishments. 1 2 3 4 5 6
20. I like to be called by my first name. 1 2 3 4 5 6
21. I feel swallowed-up by the crowd here at college. 1 2 3 4 5 6
22. Criticism doesn't upset me. 1 2 3 4 5 6
23. If I don't want to do something, I don't hesitate to say why not. 1 2 3 4 5 6
24. It annoys me when others refer to me as S's "younger brother" or S's "son," or S's "younger sister" or S's "daughter." 1 2 3 4 5 6
25. Sometimes I wonder who I really am. 1 2 3 4 5 6
26. I know pretty much what I want from life. 1 2 3 4 5 6
27. It doesn't bother me that I can't do many of the things other people can do. 1 2 3 4 5 6
28. Regardless of what people think, I am willing to fight for the things that I value. 1 2 3 4 5 6
29. At times, I seem to feel unfamiliar,
even to myself.

30. It seems to me that most of the things the other men/women do at this college are very dull.

31. Now that I'm away from my parents more, I prefer to do things my way.

32. What strikes others most about me is my strong personal convictions.

33. I feel a deep need to live up to my ideals.

34. I'm not good enough to do what I'd really like to do with my life.

35. At times, I think I am a mystery, even to myself.

36. Hard as I try, I can't really fool myself.

37. I feel that I am a young adult now.

38. I feel that I am a different person now that I'm in college.

39. I know I'm not perfect, but I prefer to be as I am.

40. Although I do not act the same with teachers as I do with my friends, basically, I am the same person.

41. When I encounter a stranger face to face, I generally like to introduce myself.

42. I enjoy spending an evening alone occasionally.

43. I impress others as being self-possessed.

44. I always think of myself as being a college student now.

45. It is easy for me to make up my mind.

46. I don't like relatives to tell me that I'm just like my mother or father.
47. Meeting new people is fun for me. 

48. Most people say that I know my own mind. 

49. I know my principle weaknesses pretty well. 

50. I don't seem to be changing as much in college as I did in high school.
Please read each of the following pairs of statements and choose the one that best describes you. You may find that both are true, or false; however, please choose the one that seems to describe you as you are. Indicate your answer to the right as either "A" or "B".

**EGO IDENTITY SCALE (EIST)**

1. a. I enjoy being active in clubs and youth groups.  
   b. I prefer to focus on hobbies which I can do on my own time, at my own pace.  

2. a. When I daydream, it is primarily about my past experiences.  
   b. When I daydream, it is primarily about the future and what it has in store for me.

3. a. No matter how well I do in a job, I always end up thinking that I could have done better.  
   b. Whenever I complete a job that I have seriously worked on, I usually do not have doubts as to its quality.

4. a. I will generally voice an opinion, even if I appear to be the only one in a group with that point of view.  
   b. If I appear to be the only one in a group with a certain opinion, I try to keep quiet in order to avoid feeling self-conscious.

5. a. Generally speaking, a person can keep much better control of himself and of situations if he maintains an emotional distance from others.  
   b. A person need not fear loss of control, of himself and of situations, simply because he becomes intimately involved with another person.

6. a. I have doubts as to the kind of person my abilities will enable me to become.  
   b. I try to formulate ideas now which will help me achieve my future goals.

7. a. My evaluation of self-worth depends on
the success or failure of my behavior in a given situation.
  b. My self-evaluation, while flexible, remains about the same in most situations.

8. a. While there may be disadvantages to competition, I agree that it sometimes necessary and even good.
  b. I do not enjoy competition, and often do not see the need for it.

9. a. There are times when I don't know what is expected of me.
  b. I have a clear vision of how my life will unfold ahead of me.

10. a. What I demand of myself and what others demand of me are often in conflict.
  b. Most of the time, I don't mind doing what others demand of me because they are things I would probably have done anyway.

11. a. When confronted with a task that I do not particularly enjoy, I find that I usually can discipline myself enough to perform it.
  b. Often, when confronted with a task, I find myself expending my energies on other interesting but unrelated activities instead of concentrating on completing the task.

12. a. Because of my philosophy of life, I have faith in myself, and in society in general.
  b. Because of the uncertain nature of the individual and society, it is natural for me not to have a basic trust in society, in others, or even in myself.
ADJECTIVE DESCRIPTIVE SCALE (VELDMAN AND PARKER, 1970)

AND

INSTRUCTIONS FOR REAL-, IDEAL-, FRIEND, AND SOCIAL-SELF DESCRIPTIONS
This appendix contains Veldman and Parker's Adjective Descriptive Scale (ADS) (a list of 56 adjectives, plus "wise", not included on the original ADS), and four different sets of instructions for filling out the ADS. Three of the instruction sets were used with the subjects themselves, and the fourth set was used only with the friends of the subjects. The subjects were asked to rate themselves on a 5-point scale for each of the adjectives on the ADS for (1) how they saw themselves, (2) how they would ideally like to be, and (3) how they believed each of their friends rated them. The friends of the subjects were asked to rate the subjects according to how they saw them. Each of the four instructional sets, presented below, was stapled to the top of an ADS form. The ADS is presented after the instructions.

**DESCRIBE YOURSELF AS YOU SEE YOURSELF**

For each adjective below, circle the number that indicates the degree to which that adjective describes you as you see yourself.

**DESCRIBE YOURSELF AS YOU WOULD LIKE TO BE**

For each adjective below, circle the number that indicates how true you would like the adjective to be of you. In effect, describe how you would like to be.

**DESCRIBE YOURSELF AS YOU BELIEVE YOUR FRIEND DESCRIBED YOU**

(friend's name) has been asked to describe you on the list of adjectives below as he or she sees you. He/she has been instructed to give a candid assessment of you and to hide neither strengths nor weaknesses. To encourage this, the confidential nature of the evaluation has been stressed. For each adjective below, describe yourself as you believe your friend described you.
DESCRIBE YOUR FRIEND AS YOU SEE HIM OR HER

For each adjective below, circle the number that indicates the degree to which that adjective describes your friend as you see him or her. Please be candid: your honest appraisal is very important. Please do not hide strengths or weaknesses. Your responses will neither help nor harm your friend, and your ratings will not be available to him or her, or to anyone other than the researchers.

ADJECTIVE DESCRIPTIVE SCALE

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APPENDIX D

INFORMED CONSENT FORMS
Two informed consent forms were used, one for subjects, one for the friends of the subjects who rated the subjects on the ADS rating scales. The first form presented below was used for the subjects; the second form was used for the friends.

INFORMED CONSENT STATEMENT

I have been informed of the general requirements for the research being conducted by Charles Burt. I understand that I will be asked to participate in two sessions during which I will be asked to answer a number of questionnaires, be interviewed, and be required to enlist the help of three friends. I understand that the interview will be taped but that the tape will be erased at the completion of the study. I am aware that my friends will be asked to describe me using a list of adjectives. I understand that only the researchers will have access to the responses of any participant and that my name will not be associated with any of the results. I am aware that some questions may be personal or sensitive in nature. I also understand that I may terminate my participation at any time without loss of credit for that or any preceding session. I am aware that I may report dissatisfactions with any aspect of this experiment to the Psychology Department's Research Ethics Committee. My signature below signifies my voluntary participation in this experiment.

Signature:______________________

Date:_________________________
INFORMED CONSENT STATEMENT

(Subject's name) has asked me to participate in a psychological study in order to allow him/her to fulfill the research requirements associated with an introductory level psychology course. I have consented freely to do so. I understand that I will be asked to describe him/her using an "adjective checklist" and that my evaluation will not be available to him/her or to any others not directly related to the conduct of this study. I also consent to describe myself using the same list of adjectives and understand that this will be confidential also. I understand that my name will not be associated with any of the results of this study. I expect no remuneration. I understand that I may terminate my participation at any time. My signature below signifies my voluntary participation in this study.

Signature: _______________________

Date: ___________________________

Phone: ___________________________
APPENDIX E

INSTRUCTIONS TO THE SUBJECTS AND THEIR FRIENDS
Three sets of verbal instructions are included. The first two are for the first and second sessions conducted with the subject. The third is for the session with the friend. Since some subjects filled out questionnaires in the first session and were interviewed during the second session, and other subjects did the reverse, the instruction sets for these sessions have alternate passages.

VERBAL INSTRUCTIONS FOR THE FIRST SESSION

"As you saw on the sign-up sheet, this study involves two sessions."

(For subjects completing the questionnaires first:)

"During this session, I would like to have you fill out some questionnaires. In the second session, I will have you finish filling out the questionnaires and then I will have a short interview with you."

(For subjects being interviewed first:)

"I would like to have a short interview with you this session, and next session, I will have you fill out some questionnaires."

(For all subjects:)

"In addition to these things, I will ask you to enlist the help of three friends who know you well. After you have given me their names, I'll contact each to have them fill out a short, confidential questionnaire concerning what you are like as a person. Because their assistance is very important to this study, every effort will be made to make their participation convenient. I will say more about
their help at the end of the session. If you have any questions, I will be glad to answer them as best I can now. At the end of the second session, I will explain the study.

"To start with, I would like you to read and sign the consent forms."

(Pass out consent forms and then collect, and have subjects sign-in on the master information sheet.)

(For subjects filling out questionnaires:) "Here is the first questionnaire. When you finish with this, bring it to me and I will give you the next one. If you need to get up and stretch, feel free to do so, and I will encourage you to take breaks."

(Pass out and collect questionnaires, encourage breathers. Check to see if the subjects filled out certain questionnaires during mass testing.)

(For subjects who have completed the questionnaires:) "Now that you've finished the questionnaires,"

(For subjects who have completed the interview:) "Now that we've finished the interview,"

(Both:) "I should tell you more about getting friends to help. I would like you to find three friends who you know well and who know you well, and who are the same sex as you. They should live at the college or locally, and they should not include family members. They will be asked to describe you using a list of adjectives. When you ask them for
their help, you can tell them that the task should not take long, between 10 and 20 minutes, and that their answers will be confidential. Their ratings of you will not be available to you or affect you positively or negatively in any way. However, their participation is necessary for you to receive full credit.

"I am going to give you some consent forms for your friends. Have them read and sign the forms and provide their telephone numbers or other means by which I will be able to contact them. Bring the completed forms back and put them in my (Charles Burt's) box upstairs, and then we will arrange for a time for our second session. I will arrange with them to meet them at times that are mutually convenient. If you have any questions, please feel free to ask me now or to call. Also, if you find that you are having trouble finding friends to help, call. Please do not discuss the nature of this research with anyone until after I have had a chance to finish seeing all participants. Thankyou for your help today."

SECOND SESSION VERBAL INSTRUCTIONS

"Thank you for the efforts you've made so far. The first thing I would like to have you do today is to make up a couple of stories for two pictures I am about to give you. For each picture, you will have 5 or 6 minutes to work, and I will tell you when 4 minutes are up so that you can tie things together. For each story, try to answer these questions: (refer to ditto instructions for the projective task -- since these are not relevant to this thesis, these materials have not been included)."
"These questions are basically just guidelines to help you: you can write any sort of a story. There is no right or wrong story. Try to make your stories creative and dramatic, but don't worry about grammar or style, because they are not important. Here are the instructions and the first picture (women in laboratory), and a sheet for you to write your story on. Put your number on top of the sheet for the story and the instructions, but not on the picture. Look at the picture for 10 or 15 seconds, then start writing."

(Four minutes later:) "How are you doing? You have one or two minutes left, so you should try to wrap things up."

(After six minutes are up, retrieve the picture, the story, and give the subject the second picture (group of women talking) and story sheet. If a subject seems anxious about the task, reassure her that it isn't something that she should worry about. If she seems to want a few more seconds to finish a sentence or thought, this is okay as well, but don't let this go on long (an extra minute at most).

"Here is the second picture. Just as before, look at the picture for 10 to 15 seconds, then turn it over and start writing." (Repeat timing procedures, etc.)

(Next, depending upon whether an interview was conducted or questionnaires were completed during the first session:)

"Now I would like to have a short interview with you."

(Or)
"Now I would like to have you fill out some questionnaires."

(Or)

"Now I would like to have a short interview with you."

(Administer questionnaires or conduct interview as outlined in the instructions given for the first session. When these tasks are complete, continue as follows for all.)

"What I would like you to do now is to describe yourself as you see yourself and as you would like to be using these lists of adjectives. I will give you two lists of adjectives for this. For each adjective, there is a five-point scale on which you can indicate the degree to which you believe that that adjective applies. So, a '1' would indicate that the adjective is very uncharacteristic of you or how you would like to be, while a '5' would indicate that it is very characteristic. Two, three, and four are degrees in-between. A '3' might be thought of as a sort of average."

(Some subjects completed the "real" self-description first, others completed the "ideal" self-descriptions first.)

Real: "First, I would like you to describe yourself. In describing yourself, do so for how you see yourself, not for how you believe that others see you and not for how you would like to be."

(Or)
Ideal: "First, I would like you to describe yourself as you would like to be, not necessarily for how you really are."

(Both).

Ideal/real: "Now, . . . " (give the above instruction for the real or ideal self-description form not already filled out.

"As you know, your friends were asked to describe you as they saw you. What I want you to do next is to describe yourself as you believe they described you. Thus, I want you to take each of their perspectives in doing this. Put yourself in their shoes and take account of who they are. In order for you to be able to do this as accurately as possible, I am going to repeat to you the instructions I gave them: First, I told them what I told you about how to use the rating scales. Also, I reminded them that what they said about you would be completely confidential and would not be available to you. They were told that their descriptions of you, good or bad, would not help or harm you in any way except that you needed them to do this in order for you to get your credit. So, in general, I tried to encourage them to be honest and candid. When I asked them to describe you, I told each of them to describe you as they, as individuals, saw you, not as they thought others saw you or as they thought you might want to be seen.

"Here is the first one. Remember that you are not being asked to describe your friend. You are being asked to describe yourself as you believe each friend described
you."

(Give the three "rate yourself as you believe your friend rated you" sheets individually. Be sure that the subjects fill in the two items at the very bottom.)

"The last thing I would like you to do is to rank your friends according to how well you know each other mutually. Here is the form, with the instructions. Read them and tell me if you have any questions."

**DEBRIEFING**

Ask the subject for her impressions and observations, and guesses about what was being looked for. If you noticed that the subject seemed to be particularly uncomfortable at any point, inquire about it but do not press. Ask the subject what she thought the pictures were for if she does not ask. Then, go on to explain the study. At the end, remind her not to discuss it for a couple of weeks. Tell subjects that they may put their addresses in my mailbox if they are interested in the results, which may be available this summer, but don't make any promises.
SESSION WITH FRIEND

"I really appreciate your willingness to help with this study and to help your friend, ______, out. Hopefully, what I'll have you do will not take long or be difficult. As you may remember from the consent form your friend had you sign, your responses to the questionnaires will never be known to your friend. Your accurate, candid responses about her are strongly urged. Your description, good or bad, will not in any way aid or harm your friend or ever become known to her or anyone not directly involved in this research.

What I would like you to do is to describe yourself and your friend using these lists of adjectives. For each adjective, there is a five-point scale on which you can indicate the degree to which you believe that that adjective applies. So, a "1" would indicate that the adjective is very uncharacteristic of you or your friend, while a "5" would indicate that it is very characteristic. Two, three, and four are degrees in-between. A "3" might be thought of as a sort of average.

"First, I would like you to describe yourself. In describing yourself, do so for how you see yourself, not for how you believe that others see you, and not for how you would like to be. (Pass out)

"Now I would like you to describe your friend. Do so as honestly as possible as you see her, not as you think others see her or as she would like to see herself. Describe her as you see her. (pass out)

"Before you hand those in" (the rating of the friend
sheet only), "could you please write the following information on the slip of paper stapled to the top: your age, year in school, major or possible major or undecided, length of time you have known (the subject) in either years or semesters, and give some indication of how much you see her. If you are her roommate, write that down.

"If you are interested in the results of this research or in what is being studied, you can ask your friend in a couple of weeks, or you can talk to Charlie Burt (or me) after a few more weeks."
APPENDIX F

MULTIVARIATE MULTIPLE REGRESSION AND MULTIPLE REGRESSION MODELS
Multiple regression may be understood as an extension of bivariate regression, which uses one predictor and one criterion. The equation used in the bivariate case is

\[ y = a + bx \]

where \( y \) is the criterion, \( x \) is the predictor, \( a \) is a constant, and \( b \) is the "beta weight" that, when multiplied by \( x \), provides the best estimation of \( y \). \( b \) is also the slope of the relationship between \( x \) and \( y \). It is related to the Pearson product-moment correlation of \( x \) and \( y \) by the following formula

\[ b = r \times \left( \frac{sd_y}{sd_x} \right) \]

\( b \) defines a linear relationship between \( x \) and \( y \) in which the error between the predicted and obtained \( y \)'s is minimized according to a least-squares solution (i.e., no different regression line solution could further reduce the squared differences between the \( y \)'s predicted by the values of \( x \) and the \( y \) values actually obtained with the \( x \)'s). In the multivariate case, a series of equations of similar form to that used in the bivariate case are solved simultaneously to obtain a set of beta weights, one to relate each prediction to each criterion. The multivariate linear regression equation is as follows:

\[ \hat{Y} = B_{yx}X \]

Where \( \hat{Y} \) is the matrix of predicted values of one or more criteria, \( B \) is the matrix of Beta weights relating each predictor and criterion, and \( X \) is the matrix of predictor values obtained empirically. The least squares approach guarantees that \( \hat{Y} - Y \) (error of prediction) is the least possible for the data used.

Multiple regression can be used to allow the prediction
of events (behaviors, success, GPAs, etc), and it can be used to validate assessment instruments, where those assessment instruments should predict certain events (performance on other measures, behaviors, etc.) (Tatsuoka, 1976). The present study applies multiple regression to the problem of validation.

A particularly valuable feature of multiple regression is the way it handles the intercorrelation of predictors. This is an especially important issue in this study because the identity measures are and should be highly intercorrelated.

When predictors \((x_1, x_2, \ldots)\) are intercorrelated, as well as correlated with the criteria \((Y)\), their relationships may be represented as a "ballentine". Figure 4 presents a ballentine in which the circle labeled \(Y\) represents the variance in a set of criteria, and the circles \(X_1\) and \(X_2\) represent the variances within the predictors of \(X_1\) and \(X_2\).

The overlaps of the circles represent the degree to which the predictors and criteria share variance, or are correlated. The areas labeled "a" and "b" are the variance in \(Y\) that are "predicted" or "accounted" for by \(X_1\), and the areas "b" and "c" are those that are predicted by \(X_2\). Together, a, b, and c represent the "multiple R" - the correlation of the predictors and criteria taken as a group. \(R^2\) is the percentage of variance accounted for in the criteria by the predictors. d represents the intercorrelation of the predictors not relavant to the criteria, and e is the variance in the criteria not
Figure 4. The Ballentine of Predictors $X_1$ and $X_2$ and Criterion $Y$

Figure 5. A Ballentine showing the Prediction of $Y$ by $X_1$ First
accounted for by the predictors. Clearly $R^2$ is not equal to the sum of the squared correlations of each of the predictors with the criteria. The issue raised by the intercorrelation of predictors with respect to the criteria (area b) is to which predictor, if any, area b is to be ascribed to. The solution to this problem depends upon the theoretical issues involved. When the researcher is not interested in the contributions of each of the predictors, but only the overall ability of the predictors to account for the variance within the criteria, a "simultaneous" model is used. Here, all of the predictors are entered into the regression equation together, and the significance of their relationship to the criteria is tested using an F test in which the numerator is $R^2$ (the mean squares for regression, represented by a, b and c in the above Ballentine) and the denominator is $1 - R^2$ (the error mean squares, represented by e in the Ballentine).

In other cases, the researcher may be interested in knowing whether a variable adds to a prediction model. In the illustration above, the researcher might ask whether either $X_1$ or $X_2$ adds significantly to the variance accounted for by the other. When this type of question is asked, the regression equation is solved using one predictor (or the first set of predictors), then the second predictor is added and the equation is solved again. The significance is calculated each time. When using $X_1$, for example, the mean squares of regression would be represented by areas a and b, and the error mean squares would be based on e and c.

The ability of $X_2$ to add to the prediction model after
was allowed to predict all that it was capable of predicting depends upon $X_2$'s partial correlation with $Y$ where $X_2$ has been made orthogonal to $X_1$ by partialling the part of $X_2$ that is correlated to $X_1$ cut of $X_2$. The variance accounted for in $Y$ by $X_2$ when $X_2$ has been orthogonalized to $X_1$ is represented by area c in the ballantine above. The significance of $X_2$'s ability to add to the prediction model is based upon an $F$ in which the regression mean squares is represented by $c$ and the error mean squares, by $e$.

Again, the goals of the researcher determine how predictors are added to the regression model. A "stepwise" regression is used when the researcher wants to know only which predictors add significantly to the regression model. In this approach, the multiple repression program run on a computer would add the predictor that is most highly correlated with the criteria to the regression model first, then add successively less correlated predictors until they stopped contributing significantly to the model. At other times, the researcher may have theoretical reasons for being interested in the contributions of certain predictors to the regression model when they are added to other predictors. When this is true, the researcher establishes a hierarchy according to which predictors are added to the regression equation. This is known as a "hierarchical" regression model.

In the present research, the hierarchical regression model is used to answer two questions for each of the identity development measures (predictors): First, how well does each identity measure predict the criteria as a
group when allowed to predict by itself (i.e., when it is entered into the regression equation first). Second, (the "Comparative Hypothesis"), how much does each identity measure add to the power of the regression model when added to the other predictors. The hierarchical multiple regressions for this program were performed with Finn's (1977) Multivariance program.
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VITA

Charles Ernest Burt was born on May 22, 1951, in Washington, D.C., and lived in several Northeastern states before coming to Maryland in 1965 to attend Annapolis High School. In 1969, he began studying physics, mathematics, and philosophy at the University of Maryland, College Park. After earning a B.A. in philosophy at Maryland in 1973, he worked as a technical editor and writer for the Department of the Army at Picatinny Arsenal, Dover, New Jersey, and at Fort Eustis, Virginia. He matriculated in the College of William and Mary's master's program in psychology in 1978 and worked as an assistant psychologist at Eastern State Hospital, Williamsburg, Virginia. After completing the course work at William and Mary, he began working towards a Ph.D. in Clinical Psychology at the University of Delaware.