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A Repertory Grid Investigation of the Development of Self Definition and Identity Status in Adolescence

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A REPERTORY GRID INVESTIGATION OF THE DEVELOPMENT OF SELF DEFINITION AND IDENTITY STATUS IN ADOLESCENCE

by

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VITA

The author, David Kenneth Platt, is the son of Leon Platt and Shirley (Slotnikoff) Platt. He was born on November 30, 1952, in Chicago, Illinois.

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CHAPTER I

INTRODUCTION

In his work, The Structure of Scientific Revolutions, Kuhn (1970) presented the argument that a discipline becomes a science after it has passed through what he called a pre-paradigmatic state into one which he called paradigmatic. In doing so, the number of schools of thought involving the discipline become reduced to a minimum, and a consensus of opinion emerges with regard to the acceptable approaches toward solving the problems and answering the questions asked by the proponents of the discipline. Kuhn said that the natural and physical sciences have gone through such a development, resulting in tightly structured sciences. The social sciences, however, have not gone through this type of development, as may be witnessed by the many varied approaches which may be used in addressing the problems at hand. Psychology in particular, involves many diverse approaches, broadly represented as the psychoanalytic, cognitive, and behavioral schools of thought. These schools may even be subdivided, depending on the approach taken by the individual theorist.

If Kuhn's assumptions were accurate, then the next step in order for psychology to approach a scientific

status, would be to define a point of intersection among the various approaches, thereby reducing the theoretical distance among them. Admittedly, this would be a large scale project, and would seem to present an overwhelming task. However, any single step along the way would contribute to the total effort.

The major aim of the present investigation is an attempt to outline such a step in the direction of unifying two diverse, but not incompatible schools of thought within the general area of personality development. The two schools of thought which are involved are the Eriksonian psychoanalytic school and the personal construct cognitive school.

The Eriksonian psychoanalytic approach places emphasis on the inner psychic dynamics of personality, which consist of processes of which the individual may or may not be aware. Particular emphasis is placed on the ego as a controlling mechanism. The function of the ego is to control impulses which are innate to the organism, and are mainly biologically determined. In order to aid the ego in its task, an identity must be formed during the course of one's development. This enables one to establish one's role in life.

In order to help understand the function of ego identity, the concept of identity status has been formulated.

Identity status, according to Marcia (1966) refers to the particular coping strategy which one uses while one's ego identity is being formed. Furthermore, if one's identity status differs during the various phases of development, then it would be reasonable to assume that one uses different ways of coping with the process of identity formation at different stages of development.

A personal construct cognitive approach to personality may be seen in the theory of George Kelly (1955). For Kelly, personality is not guided by the inner psychic forces which compel the individual to action. Rather, personality is influenced by the way in which one anticipates events in the environment. One's perception of events is even more important than the actual reality. Through one's perceptions of the world, personality takes on its own unique form for each person.

One approach to research using personal construct theory has used the degree to which the constructs in one's system are intercorrelated. A system in which the constructs are highly intercorrelated may be said to result in tight construing of the environment. This is, the person construes different situations as being similar. The inverse would be said of a loosely construed system. As a result of this aspect of Kelly's theory, these topics have been systematically explored in the research literature: cognitive

complexity, or the degree of differentiation among the constructs used by the person, intensity, or the intercorrelations among the constructs on two successive occasions.

Because adolescence may be described as a stage in life characterized by experimentation with behavior and a search for identity, it may be inferred that, in accord with Kelly's theory, the adolescent engages in a process of trying to confirm the predictions which the individual used to interpret the environment. Because of this process, the coping strategies of identity status should vary at different stages, and there should be a difference in consistency and/or intensity at each stage.

This investigation will explore the reltionships among the identity statuses of three age groups, specifically high school freshmen, high school juniors, and undergraduate college students. It will also explore the possibility of observing a sex difference on the measured constructs. Also, there will be an investigation of the possible difference among the groups on a standardized measure of personality.

In order to investigate the hypotheses, a measure called the "Repgrid" will be used. This is a device for gathering data, and has been produced by Kelly's theory. The data obtained through the use of the "Repgrid" will be factor analyzed, and several indices will be extracted.

These indices will be tested for significance using a multivariate analysis of variance. Also, the 16PF (Cattell, Eber, & Tatsuoka, 1970) and High School Personality Questionnaire (Cattell & Cattell, 1975) will be used to explore the structure of personality differences among the groups of subjects. The differences among the groups of subjects will be interpreted using a canonical correlation and multiple discriminant analysis. Briefly, the present investigation is an attempt to validate the research approach taken by the followers of personal construct theory. In addition, this research method will be applied to psychoanalytic psychology, thus extending its external validity. Also, it will study the influence of the self system on the development of an ego identity during adolescence. It will explore the self in terms of personal construct theory, with emphasis on ego identity as a developmental aspect of the self, measured in terms of the person's perception of himself or herself, and the environment. Hopefully, this investigation will provide information, having some implications for adolescent development in general (e.g. personality differences among the age levels, among the identity statuses, and between the sexes).

CHAPTER II

REVIEW OF THE LITERATURE

Before proceeding with the investigation at hand, a description of the pertinent research related to psychoanalytic and cognitive psychology is presented. First of all, a review of adolescent development is presented. The various factors influencing adolescent development will be included to allow the reader to gain insight into the reactions of the adolescent to the overall experience of development. The psychoanalytic and personal construct bases for this investigation will then be presented (i.e. the approaches that have been suggested by Erikson and Kelly). Finally, within the framework of Erikson's theory, the operationalized approach to identity status which has been suggested by Marcia is included.

Adolescent Development

Perhaps one of the most exciting phases of development is that of adolescence. The combination of physiological, social, and emotional changes which take place during this stage produces a reaction which has not previously been experienced. Whether or not one feels that a necessary component of this stage is storm and stress (Muuss, 1975), it can be agreed that during adolescence

there arises a feeling of exhuberance in the person which may pose a strong contrast to what has been experienced buring any previous period of development.

Konopka (1970) stated that each developmental stage has its own characteristics, and its own significant stresses and exhilirations. Some key concepts which she has attributed to adolescence include withdrawal from adult protection, consciousness of self in interaction, re-evaluation of values, and experimentation with behavior. This is, the adolescent goes through a period characterized by self definition through the use of experimentation with the effects of one's interaction with the environment. This produces an attempt to clarify one's place within the personal and interpersonal milieu in which one lives. The childhood reaction of accepting the situation becomes inadequate and is replaced by an attempt actively to seek out reasons for one's existence.

In an eight year longitudinal study (Offer, 1969, Offer & Baskin, 1975) and a cross sectional study (Offer, Ostrov, & Howard, 1977), adolescent subjects were studied in order to provide a description of a model group of teenagers. The results have suggested that the idea of adolescent turmoil as leading to psychological disequilibrium and resulting in unpredictable behavior, as well as the idea of the overwhelming control of the peer group seem to

be based on exaggerated claims. Also, the findings have suggested three developmental routes. They are: 1) Continuous Growth, characterized by a smoothness of purpose and self assurance toward a meaningful and fulfilling adult life. 2) Surgent Growth, characterized by developmental spurts and a cycle of progression and regression. These individuals were not so confident as those whose growth was continuous, but they were able to cope efficiently with their situations. 3) Tumultuous Growth, during which much turmoil manifested itself in overt behaviour problems in school and at home. These individuals were less happy with themselves and were more critical of their social environments, but were successful academically and/or vocationally.

Mitchell (1975a) has reported four major aspects of adolescent development. Thses are what he called the biological, peer, moral, and worth predicaments, and they seem to influence the direction of development. The main emphasis is on the opportunity for the adolescent to make a significant contribution to society. Mitchell sees this need for worthwhile work as the motivating force which would help the adolescent to resolve the major predicaments, and would result in unification with, rather than separation from society.

Ausubel (1970) has stated that developmental stages imply nothing more than identifiable, quantitatively dis-

tinct sequential phases in an orderly progression of development. Elkind (1974) has described the developmental point of view of mental structures as manifesting a progressive evolution in which changes in experience are accompanied by changes in cognitive structures. The adolescent has become capable of combinatorial logic, and can deal with problems in which many factors operate simultaneously. Also, a feature of adolescent thought is the capacity to construct ideals, or contrary to fact situations.

According to Piaget (1967), the adolescent, in comparison with the child, is an individual who constructs systems and theories. Personality at this stage may imply a decentering of the self which becomes part of a cooperative plan subordinating itself to autonomous and freely constructed discipline. Disequilibrium then recenters on the self, and the resulting oscillations may account for adolescent egocentricity. The adolescent is able to use this new way of thinking to produce projects, life plans, theoretical systems, and ideas of political and social reform. In this manner, the adolescent is introduced into adult society.

Kagan (1972) stated that a new cognitive competence allows the adolescent to induce rules from events with multiple attributes. This allows the adolescent to assume a relativistic view of the world, to examine past beliefs,

and to search for inconsistencies between beliefs and related actions.

The early adolescent needs peers as an aid in defining beliefs, verifying new conclusions, and testing new attitudes against an alien set in order to test their hardiness and to obtain support for new assumptions. At the same time, the early adolescent needs the family to give structure to actions, and to provide models for identifying and establishing a new self concept.

Individual differences have been found (Tanner, 1975, Weathersly, 1975) both between the sexes and for individuals. The differences have been researched with regard to physiological maturation as well as the effects of physical growth on personality. The literature has revealed personality differences between early and late maturing adolescents. A clear cut difference has been found between early and late maturing boys on the Edwards Personal Preference Schedule variables of succorance and dominance. Also, the later maturing boys obtained higher autonomy scores than did the early maturers.

According to Blos (1972), interest in research on the young adolescent has increased because of the increasing similarity in life style of younger adolescents to that of older adolescents. Everything which had been regarded as typical for middle and late adolescents has been occurring

at a younger age. Also, there seems to be a differentiation of the developmental process of the adolescent, which has pointed to the exclusiveness of a developmental stage of early adolescence.

Developmental differences also occur between the sexes. The female seems to be more preoccupied with the problems involved with object relations than is the male, whose energies seem to be directed toward control and dominance over the physical world.

It has been theorized (Blos, 1962, Sullivan, 1953), that adolescence may be divided into several substages, each with its own distinguishing characteristics. These theories show adolescence as beginning with heterosexual object finding, continuing through a consolidation of the personality, and ending with the achievement of unifying one's personality pattern and sexual behavior into a socially accepted whole. Toffler (1970) has said that the current trend of subdividing the period of adolescence is a recognition that all young persons can no longer be lumped together in the same category.

Josselyn (1954) compared the adolescent to a person who is struggling to solve a maze. No matter how rationally the problem of the maze is approached, one finds oneself following paths leading to blank walls. The paths must be retraced so that other paths may be sought out. Finally,

when the maze has been solved, the adolescent finds a pattern of defense mechanisms and integration which gratifies the greatest number of needs. The adolescent has become a person in his or her own right, with a pattern of defenses which can be recognized as the tools for integrated behavior.

Mitchell (1975b) stated that during the early adolescent years growth dilemmas of an essentially moral nature become central to psychological development. Some of the significant moral dilemmas seem to be related to sexual behavior, independence, conscience, and peer group conformity. As the adolescent develops, these dilemmas become less central and are replaced by needs related to making a significant contribution to society.

Gordon (1972) explained that the period of early adolescence, ages 12 to 15, represents a series of attempts to gain autonomy from one's parents while gaining peer support by conforming to teenage norms. The most significant others at this stage are the parents, same sex peers, opposite sex peers, and teachers. During later adolescence, ages 16 to 20, a loved one, wife, or husband may be added. The major challenge of adolescence changes from one of finding security to one of establishing intimacy.

Several authors (Newman, 1976, Mitchell, 1976, Newman & Newman, 1976) have described some of the develop-

mental tasks of early adolescence (age undefined). These tasks include the acquisition of the skills of interaction, empathy, role taking, intimacy, physical maturation, attainment of formal operational thinking, attainment of membership in the peer group, and the development of heterosexual relationships. The early adolescent seems to be engaged in a process of self evaluation within the context of the peer group. During later adolescence, effectiveness as a participant in a social group depends on one's ability to assess one's impact on others as well as to identify correctly the expectations which others have for one's behavior. During this phase, it also becomes possible for a durable, lasting intimate relationship to occur as opposed to the more transient intimacy which is manifest during early adolescence.

In summary, it may be concluded that during adolescence, the many changes in personality and cognitive development have a lasting effect on the individual. During this stage, thought, emotions, and interpersonal relations begin to interact, resulting in an added dimension to the individual's personality. The adolescent has become able to, and has developed the need to establish a self definition in comparison with others with respect not only to the past and present, but also to the future. This results in an initial heightened sense of insecurity and sensitivity

to the reactions of others, and a subsequent reestablishment of secure feelings and confidence in one's ability, which leads to a more positive sense of self. The adolescent experiments with various behaviors and retains those behaviors which have proven to be successful, while discarding those behaviors which have proven to be unsuccessful at aiding the adolescent in adapting to the environment.

Psychoanalytic Background

In this section, two approaches to psychoanalytic psychology will be presented. Those two approaches are the theory of Erik Erikson, and the operationalized approach to Erikson's theory which was elaborated by James Marcia.

Eriksonian Theory. Erik Erikson (1963, 1967) has worked within a psychoanalytically oriented framework regarding ego development. His epigenetic principle is based on the perspective that the growing individual develops through the unfolding of a ground plan which has been inherently implanted. Out of this ground plan, the parts are seen to arise, with each part having its time of special ascendancy, until all of the parts have arisen to form a functioning whole. Personality then, may be said to develop according to steps which have been predetermined by the individual's readiness to be driven toward, aware of, and to interact with an increasingly widening social radius. In other words, Erikson's interpretation of

development includes a biological or somatic, an ego or psychological, and a societal element. The ground plan for one's development is innately defined, and is influenced by the structure of the culture and society into which the individual has been inadvertently thrust. Erikson's theory deals with several areas simultaneously. In contrast with theories which deal with either social or biological influences on personality, Erikson has chosen a more inclusive approach and views personality as an interaction of forces which are combined uniquely for each individual.

One characteristic central to Erikson's theory is that of critical periods. Each part of one's ground plan arises at a time of special ascendency. These periods may be seen to divide personality development into its various stages. At each stage a crisis becomes prominent. A crisis is defined as a time at which a decision must be made. The growth from one stage to another is marked by the need to make a choice which will influence the direction that further development will take. A stage may be characterized as a crisis period at which a combination of the innate growth pattern and developing awareness of a particular part function, characteristic of that stage, is accompanied by a shift in instinctual energy, causing a vulnerability in the affected part to occur. At that point, a choice must be made. Development takes place through a

periodic succession of such crises. Table 1 presents a summary of Erikson's stages of development. Successful passage through a stage results in a period of development characterized by the term on the left. Unsuccessful passage results in a personality characterized by the term on the right.

Sheehy (1976) explained that during each passage or crisis, how one feels about one's way of living results in subtle changes in one's perception of one's interior sense of self in relation to others, the proportion of safeness to danger one feels, one's perception of the time which one has left available, and at the gut level, in one's sense of aliveness or stagnation. In other words, each stage of development represents a reevaluation or a change in one's perception of oneself, one's relative standing in society, and one's pattern or choice for coping with the crisis.

Identity Crisis. According to Erikson's theory, adolescence is a pivotal stage in development. During this phase, it is important for one to form an identity. Loew (1972) has stated that identity becomes disrupted during early adolescence, gradually becomes reintegrated during middle adolescence, and finally stabilizes during late adolescence or early adulthood. Successful passage through adolescence depends on three interrelated aspects. The

TABLE 1

THE RELATIONSHIP OF ERIKSON'S EIGHT STAGES

OF MAN TO ACHIEVEMENT

Eriksonian Stage	Achievement
Trust vs. Mistrust	Willingness to allow mother to leave sight without causing undue anxiety. Provides continuity of providers, as well as trust in oneself.
Autinimy vs. Shame/Doubt	Develop feeling that faith in existence will not be jeopardized by a sudden wish to make choices.
Initiative vs. Guilt	Discover what kind of person one will be. Locomotion, language, and imagination enhance autonomy by adding to the ability to undertake a task actively.
Industry vs. Inferiority	Develop use of tools and skills which will influence future vocational choice.
Identity vs. Role Confusion	Pivotal stage during which the previous stages are integrated in order to establish a new sense of sameness and continuity.
Intimacy vs. Isolation	Sharing one's established identity with another in an intimate relationship.
Generativity vs. Stagnation	Concern with establishing and guiding the next generation, through occupation or raising a family.

TABLE 1 CONTINUED

Eriksonian Stage	Achievement
Integrity vs. Despair	Acceptance of one's life cycle as finite. One may be satisfied with one's past, or dissatisfied that an unclosable gap has been encountered.

early adolescent must accommodate to the increase in sexual and aggressive drives, and must adapt to changes in the appearance of the body. The middle adolescent must find suitable ways to satisfy needs for responsibility and independence. The late adolescent must decide on an appropriate career, achieve a mature sexual identity, and integrate a personal ethical standard with the standards of society. Adolescence and the identity crisis which result from the biological, interpersonal, and individual changes is a stage of development which not only results from assimilating past experiences, but also will exert a crucial influence on the future.

Erikson (1963, 1964, 1968, 1970a, 1970b, 1974) has given extensive treatment to the identity crisis, and has emphasized the impact of this phase on future development. A crisis, as has been noted, is a necessary turning point at which development must move in one direction or another, for the purpose of growth and further differentiation of the personality. Identity formation in adolescence begins with the end of the usefulness of childhood identifications. It arises out of the assimilation of past identifications and their absorption into a new configuration which is in part, dependent on society's recognition of the individual. Identity formation involves a process of simultaneous reflection and observation. One judges oneself in light of one's perception of how one is being

judged by others, according to their standards. At the same time, one judges the other person's way of judging, by comparing them to one's own standards. This is a continually developing process of increasing differentiation which becomes more inclusive as the individual becomes more aware of a widening radius of significant others. Identity must be regarded as a dynamic aspect of personality which is never established as a static and unchangeable quality, but is continually developing.

It may be seen, then, that identity formation must go beyond the mere identifying of oneself with others. It is a process which is based on a heightened cognitive and emotional capacity to let oneself be identified as an individual in relation to a predictable world of experiences. It is not only the sum of past experiences and childhood identifications. Rather, it is a new combination or restructuring of old and new identification fragments both emotionally and cognitively. A sense of identity implies a sense of integration within oneself as one grows and develops. At the same time, it means establishing a sense of affinity with the community or society. It is not until adolescence that the individual has developed the physiological, mental, and social requirements to experience the identity crisis.

The growing individual, on being faced with an internal physical revolution, becomes primarily concerned with the

consolidation of social roles. There is a preoccupation with what one appears to be in the eyes of others, as compared to what one feels one really is. The problem of how to connect the earlier accumulated roles and skills with the ideal prototypes of the day also enters the picture. The search for a new, reliable identity may be seen in the constant effort to define, over-define, and redefine oneself in comparison with others.

The identity crisis is both psychological and social. It is psychological in the sense that is is partially conscious and partially unconscious. It contains elements of conflict and can lead to contrary mental states. It proceeds within a particular developmental period which partially depends on biological factors. Also, it reaches into both the past and the future. The crisis is social in the sense that is is sometimes hardly noticeable and sometimes quite noticeable depending on the society, class structure, and period in history. There exists the possibility of forming a negative identity, which is the sum total of all identifications which are regarded as atypical by society. Also, the nature of the identity conflict is dependent on the composition of the society within a given historical period. Thus, identity may be seen as a psychological process which reflects the social processes. The resulting impact creates in the individual a feeling

of continuity or a unity of personality which is recognized by others as being consistent.

The outcome of the identity crisis is a reemerging of the individual with an increased sense of inner vitality, a sense of good judgement, and an increase in the capacity to do well according to one's own standards and the standards of those who are significant to the individual. The person should have experienced the awareness that there is a self sameness and continuity in the personality and the style of one's individuality. Also, one should feel that this style coincides with the sameness and continuity of one's meaning for the significant others in the community. Identity includes maintaining essential patterns in the process of changing lifestyles and social milieu.

The result of the identity crisis may be viewed as the formation of an ideology, which Paranjpe (1975) described as being a theory or philosophy of life. That is, an organized set of beliefs, goals, values, and related symbols which can provide the individual with a basic frame of orientation around which one's social life would be organized. Erikson described ideology as the social institution which is the guardian of identity. Ideology is the mechanism through which social systems are allowed to continue into the next generation, through the rejuve-

native power of youth. Ideology helps to maintain the eternal order within the personality. By accepting an ideology, one must rank values, roles, and loyalties which might pose a threat to the internal consistency of the personality. Thus, adolescence may be seen as the means for social evolution. Completion of the adolescent process, however, may only be consummated when the individual has attained a new kind of identification, which includes not only ideology and sociability, but also competitttive apprenticeship with and among one's agemates. In other words, completion of the adolescent process depends on the formation of both an ideological and occupational choice and pattern.

Failure to achieve identity during this stage may result in one of two consequences. These are known as psychosocial moratorium and identity confusion. A psychosocial moratorium is a delay in making adult commitments. It has been described as a period of selective permissiveness on the part of society and provocative playfulness on the part of the individual. Identity confusion may be accompanied by an inability to concentrate, and an abhorrence of competitiveness.

According to Gallatin (1975), in order to bring one's past and future experiences firmly in line with one's future aspirations, it is necessary for the adolescent to

enjoy the feeling of an ideological commitment. Failure to establish this may result in: diffusion of time perspective (time confusion), diffusion of industry (work paralysis), a problem of intimacy (bisexual confusion), or a negative identity (role fixation).

Bronson (1959) studied and has supported the hypotheses that persons in a state of identity diffusion should: a) be less certain about the relationship between the past and current notions about themselves, b) show a higher degree of internal tension or anxiety, c) be less certain about dominant personal characteristics, and d) fluctuate more on their feelings about themselves. He concluded that identity diffusion is a measurable parameter of personality development.

Rasmussen (1964) supported the hypotheses that individuals who demonstrate differences in their ability to effect an adequate psychosocial adjustment will also demonstrate differences in ego identity and that persons presenting evidence of satisfactory ego identity will demonstrate a greater degree of self acceptance than would individuals presenting evidence of identity diffusion. Thus, it may be said that ego identity may have an effect on self acceptance which in turn, affects one's psychosocial adjustment.

Further research (Ciaccio, 1971, Nawas, 1971) has

indicated support for Erikson's epigenetic principle of systematic ego development in conjunction with maturation interacting with an ever widening social milieu. Also, there may be evidence of a decline in the complexity of environmental perception in males from adolescence to young adulthood.

Protinsky (1973, 1975) studied the contribution of the first five Eriksonian stages to total ego identity in order to discover whether or not older and younger adolescents differ on each contributing component. When controlling for sex, the results showed no significant difference, indicating that both males and females are involved in the identity crisis. Age was found to be the crucial factor, with older adolescents scoring significantly higher than younger adolescents. Protinsky has interpreted this finding as support for Erikson's epigenetic principle. Also, he has stated that educational programs which allow intellectually gifted adolescents to omit one or more years of high school and enroll in college early may be detrimental by forcing the individual into self definition too early and by doing so, contribute to role restriction.

McClain (1975) supported cultural, sex, and age differences on a measure of ego identity development. His research indicated a significant difference among various

communities in terms of adolescent development through the stages of basic trust through intimacy. This may indicate support for Erikson's notion that the culture in which one lives may have an important influence on development. Male subjects compared to female subjects, scored higher on a scale of autonomy, and of industry, which have been terms most commonly associated with masculinity within Erikson's framework. Also, the age variable has indicated the presence of a developmental trend, with respect to 12-13, 14-16, and 17-18 year old subjects. McClain has taken this to indicate that early adolescents have a naive certainty about their identity before they have advanced to the stage at which they can realize the difficulty of the problems which they will face. Middle adolescents have a shaken confidence and disequilibrium about the conflicts and tasks they must face. Older adolescents have achieved a restored confidence and balance which may have resulted from mastery of the developmental tasks of adolescence.

In sum, Erikson's theory of personality development has provided an impetus for much research. His approach appears to be consistent with the biocognitive or interactionist view as presented by Bowers (1973). Both theories have stressed the importance of the interaction of variables within the person as well as in the

environment. While Bowers has stressed cognitive functioning. Erikson has placed greater emphasis on ego functioning. With the current trend toward a cognitively based interpretation of personality (Mischel, 1977), it may not be long before the interaction of cognitive and ego functions becomes an accepted standard.

Marcia's Theory of Identity Status

James Marcia (1966, 1967, 1968) has introduced a new dimension into the field of ego identity research with the publication of his findings establishing the validity of what he called the identity status. Marcia has operationalized Erikson's criteria of ego identity as reflecting the individual's feelings of knowing who one is, and where one is going. Identity diffusion, or role confusion, refers to an individual's sense of uncertainty about one's place and direction in the scheme of things. According to Marcia's view, the extent of identity achievement or diffusion may be defined by two variables: crisis and commitment, in each of two areas: occupation and ideology, where ideology is defined as the combination of one's views about religion and politics. By a crisis, Marcia, as well as Erikson, refers to a time during which the individual is actively involved in choosing from among alternative occupations and beliefs. Commitment refers to the degree of personal investment the individual has expressed in choosing an occupation

or belief.

Marcia has put Erikson's theory into a definition of identity statuses, each of which represents a specific way of coping with the identity crisis. The measurements which he used were a semi-structured interview to determine which of the four points along the continuum of identity achievement were the most appropriate descriptions of the individual. He used an incomplete sentences blank as a criterion measure of identity achievement. The definitions of the four identity statuses may be found in Table 2.

The results of Marcia's research have indicated that subjects high in identity achievement were more stable in terms of self esteem in the face of invalidating information, they persevered longer in their levels of aspiration, and endorsed fewer authoritarian statements. The moratorium subjects were similar to the achieved subjects, but to a lesser degree. The foreclosure subjects were vulnerable to negative information, maintained unrealistically high goals, and endorsed more authoritarian statements. The diffused subjects held higher levels of aspiration than the foreclosure subjects, but were more vulnerable to negative information, and endorsed more authoritarian statements.

In a follow up study, Marcia (1976) reported that achieving identity during the college years may or may not

TABLE 2

MARCIA'S DEFINITIONS OF THE IDENTITY STATUSES

Identity Status	Definition
Identity Achievement	The individual passed through a crisis and is committed to an occupation and/or ideology. Several occupations were considered, or the person has deviated from the parents' plans. There was a period of religious doubt, resulting in re-evaluation of faith, and committment to action, either pro-religious or not. In politics, differences from parents' opinions are demonstrated, and some sort of political activity was demonstrated.
Moratorium	This individual is presently in a crisis period, and is choosing from among alternatives. There is some doubt about political and religious commitment, dissatisfaction with the doubt, and an attempt to resolve the problem.
Foreclosure	The person has not passed through any decision period, but is committed to an occupation and/or ideology. The choices coincide with those of the parents. Religious faith and political convictions have been adopted from the parents with little or no mark of the individual's own.

TABLE 2 CONT.

Identity Status	Definition
Identity Diffusion	This person may or may not have experienced a crisis. In either case, there is no evidence of commitment. No occupational choice has been decided on, nor is there much real concern. There is little interest in religion or political matters. There is little or no concern about where one is with respect to society. (from the Manual for Identity Status Tapes, Marcia, 1977)

yield continued identity achievement, while not having achieved an identity in college precedes not achieving an identity during the subsequent six or seven years. The results of this study have indicated that the identity achieved subjects were committed to their occupations without being bound to them. They had fairly firm self made ideologies. The moratorium subjects showed an undercurrent of rebellion and an opposition to the establishment. The foreclosure subjects were certain of the past and future. They were content and productive. Also, they would be willing to extend their present life styles indefinitely. The diffused subjects seemed to have forfeited claims to the direction of their lives, and felt that they were controlled by the immediate environmental circumstances. None had an occupation within which was envisioned a productive future. The findings of this study seem to indicate that identity status established during college may have some predictive validity with regard to life styles.

Several studies (Waterman & Waterman, 1970, 1971, 1972, Waterman, Geary & Waterman, 1974, Waterman & Goldman, 1976, Cross & Allen, 1970) have related identity status to the academic situation. The findings indicate support for the predictive validity of Marcia's system, and are consistent with Erikson's theory. The results of one study indicate that 80% of the moratorium subjects changed their

plans, while 30% of the subjects in each of the other groups did. Longitudinal studies have indicated the occurrence of a clear, developmental change, with the subjects moving through moratorium status to become identity achieved. Although there has been no support for the hypothesis that identity achieved subjects are more emotionally stable than those in the other statuses, those who remained in any given status showed scores on personality scales consisten with the levels generally found for that status. Subjects who had changed status showed personality traits inconsistent with those of their original status. This finding was supported with respect to ideology, but not to occupation. Another of the studies has indicated that subjects who started college in the identity achievement status for ideology were likely to be achieved when finishing college, while those who were foreclosed during their freshman year were likely to change to another status. The authors attribute this change to the faculty at the college, who are more responsive to those students who engage in social activities sponsored by the schools than to those who do not. Also, the moratorium status was found to be less stable than the foreclosure status for occupation, and less stable than the diffusion status for ideology. It seems reasonable to infer from these studies that there is a developmental pattern and also that the two criteria, ideology and occupation,

are distinct traits that may be achieved at different rates.

Another confirmed hypothesis has indicated that the association of stress with the college experience, and not merely the occurrence of an identity crisis, may be the crucial factor in the relationship between ego identity and satisfaction with college. That is, subjects who were foreclosed on occupational choice would not go through a stressful occupational crisis while at college, and would tend to be relatively more satisfied with college than would moratororium subjects. Also, it has been reported that the identity achieved person who is more likely to be effectively working toward a goal in terms of occupation, would be more likely to be task oriented, and to derive more meaning from the work. This should be reflected in college achievement by a significantly higher grade point average.

In a longitudinal study (Waterman & Waterman, 1975), it was hypothesized that college educated fathers would be more likely to have sons who were in the achieved and moratorium statuses, while fathers who have not attended college would be more likely to have sons in the foreclosed and diffusion statuses. The findings have indicated no significant relationship between the identity statuses of the fathers and that of their sons. This may lead to the conclusion that identity status is more likely to result

from one's own experience, rather than being a result of modeling behavior.

Research using college women as subjects (Toder & Marcia, 1973, Marcia & Friedman, 1970, Schenkel & Marcia, 1972, Morse, 1973, Greenhouse, 1975, Howard, 1975) has shown that identity achieved and moratorium subjects conformed less to peer pressure than did diffused and foreclosed subjects. These results have been used to support the conclusion that the ramifications of the identity crisis would be the same for men and women, and that predictability would be the same for both sexes. However, it also has been found that the inclusion of questions about premarital sexual intercourse during the interview added to the predictability of identity status for women.

Although one study showed no relationship among identity status, locus of control, fear of success, and competitive performance, college women in the various statuses seem to be affected differently by heterosexual relationships. Foreclosed women seemed to be more likely than moratorium women to change their plans and interests to accommodate to their boyfriend's desires. Moratorium women expressed more dissatisfaction or anger in their boyfriend's presence than did women in the other statuses. Moratorium women also anticipated less traditional division of labor in future marriages, and placed greater emphasis

on achievement of personal goals related to career, than did women in the other statuses.

Using the Rorschach Test, Donovan (1975a, 1975b) studied the personality characteristics of subjects within the four identity statuses. He notes that research on identity status seems to indicate the presence of construct validity, and that the statuses seem to be measuring a significant dimension underlying real differences between individuals. Donovan's research has indicated that in the identity diffused subject something seems to have gone wrong while they were growing up. They seem to have experienced themselves as being helpless victims, waiting for harm and anticipating little care from the world. They frequently mentioned feelings of inferiority, alienation, and ambivalence. The identity foreclosed subjects had not rejected much of what their parents had offered. Repression and denial were their main defense mechanisms. It was difficult for them to rebel against or to become autonomous from their parents. They described their families as being warm and gratifying, but at the same time stifling. The persons in the moratorium status all had fathers who were successful. They all mentioned that as children, they were sensitive, depended on to do great things, or were more intelligent than their siblings. As adults, they were competent, autonomous, and active. Also, they were quick to

disagree and expressed a large amount of hostility. The identity achieved subjects had developed vocational plans and ideologies which were based on individual needs, interests, abilities, and experience. They were well controlled, tolerant, and active.

Neuber and Genthner (1977) studied the relationships among identity status, intrapersonal adjustment, as measured by a rating scale for personal responsibility, and interpersonal adjustment as measured by a scale for level of facilitation within a counseling situation. The results supported Erikson's notion that persons high in ego identity achievement demonstrate higher levels of intrapersonal and interpersonal adjustment than individuals low in ego identity. The subjects rated as identity achievement and moratorium demonstrated the characteristics of overall ego identification, self confidence, security, and ability to cope with problems efficiently. Foreclosure and diffusion subjects tended to show a lack of overall ego identity, and demonstrated insecurity, and a lack of self confidence.

Orlofsky, Marcia, and Lesser (1973) studied the relationship among identity status, autonomy, affiliation, heterosexuality, intimacy, and social desirability. Among the findings were that foreclosure subjects scored highest on social desirability, but lowest on autonomy. Achieved

and moratorium subjects scored highly on a scale of intimacy, and identity diffused subjects scored lowest on the intimacy scale. The findings supported the hypothesis that subjects closest to identity achievement would be establishing intimate relationships. Thus, there would be a correspondence between identity status and intimacy.

Osham and Manosevitz (1974) researched the relationship between identity status and the degree of adjustment as measured by the MMPI. Their findings indicated that the moratorium and foreclosure groups were more similar than any of the other groups, with respect to the three highest scales. Also, the moratorium subjects scored highest on all scales, and the identity achieved subjects scored lowest on eight of the descriptive scales. Another finding has indicated that the scores on the masculinity-feminity scale were among the three highest scores for all four identity statuses.

Simmons (1970, 1973) used Marcia's Ego Identity Incomplete Sentences Blank to construct an objective measure of identity achievement. His findings included a test - retest reliability of .764, a validity as measured by the Mann - Whitney U Test as significant ($p < .01$), and significant correlations with the self regard, inner directed, and self actualizing scales on Shostrom's Personal Orientation Inventory Scales.

The relationship between identity status and certain cognitive functions has also been studied (Podd, Marcia & Rubin, 1970, Podd, 1972, Breuer, 1973, Waterman & Waterman, 1974). The findings indicated that in a prisoner's dilemma game, moratorium subjects tended to be more competitive under high authority than under low authority conditions. They also tended to be more cooperative i.e., to match the responses of their partners, than did subjects in the other statuses. Another finding indicated that the foreclosure subjects demonstrated a significantly greater positive perception of authority than did subjects in all of the other statuses combined.

Moral ideology measured in terms of Kohlberg's theory also seems to be related to identity status, supporting Erikson's view that moral ideology is a factor in ego identity. The research indicated that identity diffused subjects tended to show a significantly greater use of preconventional level of moral reasoning, while identity achieved subjects tended to use more postconventional types of reasoning.

The dimension of cognitive style in decision making has also been studied in relationship to identity status. The findings indicated that achievement and moratorium subjects were more reflective, displaying relatively long decision making latencies and fewer errors, while foreclosure

and diffusion subjects were more impulsive, exhibited short decision making periods, and made a relatively higher number of mistakes.

In summary, it has been shown that ego identity, as an element of Erikson's theory of personality development, may be noted as a dimension of personality which is affected by the coping strategy which the individual used to pass through the identity crisis. The validity of ego identity has been established in the form of four identity statuses operationally defined by Marcia. Ego identity status was found to be related to the cognitive, perceptual, and personality dimensions of the developing individual.

Personal Construct Theory

A distinctive approach to the cognitive perspective of personality may be attributed to George Kelly (1955, 1963, 1973). His philosophical approach which he has called constructive alternativism, puts a special emphasis both on the events which one encounters, and also on the anticipation of similar events. The meaning which an individual gives to an event depends on both the anticipated outcomes and the means by which the events are anticipated. That is, meaning assumes the shape of the arguments which have led one to one's prediction. The only way to check on the personal constructs which one has formed would be by observing the sample of events which confirm or disconfirm

one's expectations. For Kelly, confirmation and disconfirmation of one's predictions of events have been given greater psychological significance than rewards, punishments, or the drive reduction which may be produced by reinforcements. If one's constructs have been disconfirmed, a reconstruction of one's personal construct system would take place in order to improve the accuracy of further anticipations. The nature of life may be seen as an outreaching for the future, rather than a mere reverberation of the past.

According to Orford (1976), an important point which has been made by Kelly is that the nature and organization of the constructs which a person may used have been derived from the past, but at the same time have an influencing effect on the future. That is, constructs are developed from a person's experience with the social world, and the effects of this experience extend into the present and future.

Kelly's system consists of one fundamental postulate and a series of related corollaries which explain and elaborate the postulate. Tables 3 and 4 present the postulate, corollaries, and several definitions which may be helpful in understanding Kelly's point of view.

Bannister (1962) said that personal construct theory: 1) stresses that a person's responses are made in

TABLE 3

KELLY'S FUNDAMENTAL POSTULATE AND RELATED COROLLARIES

Postulate/Corollary Name	Postulate/Corollary
Fundamental Postulate	A person's processes are psychologically channelized by the way in which one anticipates events.
Construction Corollary	A person anticipates events by construing their replications.
Individuality Corollary	Persons differ from each other in their construing of events.
Organization Corollary	Each person evolves for the convenience of anticipating events, a construct system embracing ordianal relationships among the constructs.
Dichotomy Corollary	A person's construct system is composed of a finite number of dichotomous constructs.
Choice Corollary	A person chooses that alternative in a given dichotomized construct through which the anticipation leads to the extension and definition of the system.
Range Corollary	A construct is convenient for a finite range of events only.
Experience Corollary	A person's construct system varies as one successively construes the replication of events.

TABLE 3 CONT.

Postulate/Corollary Name	Postulate/Corollary
Modulation Corollary	The variation in a person's system is limited by the permeability of the constructs within whose range of convenience the varients lie.
Fragmentation Corollary	A person may successively employ a variety of construction subsystems which are inferentially incompatible with each other.
Commonality Corollary	To the extent that one person employs a construction of experience which is similar to that employed by another, the psychological processes of the two individuals are similar.
Sociality Corollary	To the extent that one person construes the construction processes of another, that person may play a role in a social process involving the other person.

TABLE 4

PERSONAL CONSTRUCT DEFINITIONS

Aspect of Constructs	Definition
Range of Convenience	All those things to which the user has found the application of the construct to be useful
Focus of Convenience	The range of matters for which a construct is maximally useful
Tight Construing	A tightly construed system is one in which fewer, but more highly related constructs are used
Loose Construing	A loosely construed system is one in which more, but less closely related constructs are used
Elements	The objects or events which are construed by the use of a construct
Permeability	A construct is permeable if it will admit to its range of convenient new elements which are not yet construed within its framework
Constellatory	A construct is constellatory if it fixes the realm membership of its elements (e.g. stereotypes)
Propositional	A construct is propositional if it does not fix the realm membership of its elements

terms of the situation as the person conceptualizes it. 2) accounts for the behavior of the experimenter and the behavior of the subject within one set of parameters. 3) accounts for man as a, "Thinking animal," rather than resting on dynamics such as the pleasure principle, or law of effect. That is, reality is viewed by each individual through that person's own personal construct system. It is the person's perception of reality which is the determining factor, rather than reality as it actually exists. Bannister's research has supported the hypotheses that: 1) Constructs within a single subsystem of constructs will be structurally related. 2) Within one culture each individual would tend to have construct relationship patterns similar to those of other individuals. 3) It would be possible to have significant relationships between constructs for individual subjects and similarity of patterning of construct relationships between subjects without any consensus of agreement about the nature of the elements construed.

According to Kelly's theory, a construct is a way in which some things are construed as being alike and yet different from others. Constructs are bipolar in nature. However, one must not be led to the conclusion that there exists an either - or condition. The intended implication is that each construct has a limited range of convenience outside of which the construct is irrelevant.

Within a developmental framework, Salmon (1970) said that personal construct theory, as opposed to learning theories, places the principle element of change, or development, within the person and refers to the environment only in terms of a person's changing construction of it. Development takes place as a function of one's own endeavor to understand the environment, oneself, those around one, and to discover the new possibilities that are potentially available. That is, development makes use of the recurring themes used by a person to define one's undertakings and anticipations of the future, and which give one a sense of continuity and identity.

Bannister and Agnew (1977) have listed several aspects of constructions which contribute to a total notion of the self. These are: 1) Each individual entertains a notion of separateness from others derived from the privacy of one's own consciousness (i.e., a subsystem about oneself is built and elaborated by the kinds of experiences which validate the constructs about oneself). 2) People entertain a notion of the integrity and completeness of their own experience in that persons believe all parts of it to be relatable because persons are, in some vital sense, the experience. That is, one's sense of the past carries a contrast pole, a sense of the present and future, which is a sense of what one has become and what one may yet become. 4) People entertain a

notion of themselves as causes, individuals with purposes and intentions, and they accept responsibility for their actions. 5) People work towards a notion of other persons by analogy with themselves (i.e., one uses oneself as a point of reference on which to base one's constructions of others).

Research on a construct's susceptability to change has been supported (Levy, 1956, Scott, 1975). The findings have indicated that constellatory constructs are more sensitive to invalidation than propositional constructs are. Other supported hypotheses include: 1) the accuracy of interpersonal prediction as a function of the degree of cognitive integration, and 2) changes in organizational structure will occur most in those subjects who attempt to understand and predict the behavior of others by means of a pyramidal structure (elicited descriptions of different organizational units among a subject's constructs, thereby discovering the ordinal relationships among the subject's constructs). In other words, persons characterized by a low degree of organizational structure were more susceptible to change than those who were more highly organized in structure.

From a social psychological point of view, Rosenberg (1977) has shown the relationship between personal construct theory and implicit personality theory, which refers to a

person's everyday beliefs about personality with the focus on the nature of the structures used and the content that persons share in their conceptions of people. Rosenberg said that Kelly has presented a serious attempt to formalize the structural aspects of person perception in psychological terms. Rosenberg has also listed several ways of analyzing personal construct data. Among them are: 1) Relatedness measures in which a number is used as input data to represent distance between related entities. 2) Two-way or hierarchical clustering, which is a sequence of partitioning the entities. The assumption is that each partitioning consists of overlapping clusters or groupings. 3) Dominant - Residual Analysis, which has been motivated because there frequently exists the presence of some odd juxtapositions in the cluster solution. For instance, if a cluster consisted of the traits high grade point average, above average intellectual ability, and blue eyes, one could question whether the occurrence of blue eyes would have an effect on the other two traits. In this case, a dominance measure would be calculated for each trait, reflecting its relation to all other traits in the protocol. When the dominance values are rank ordered, a discontinuity at the lower end is usually noted. The terms would be partitioned into dominant and residual subsets using this discontinuity as a cutting point.

In summary, personal construct theory has provided the impetus for much research on personality. The basic foundations provide a contrast, but not an incompatibility with learning theory. Experience with the environment helps to form the individual's personality. Also, personal construct theory may be seen to contain a dynamic element. Personality is never a static entity. A construct system is fixed only to the degree of permeability of its elements. Thus, even though Kelly has not explicitely stated the effects of one's personal construct system on development, it may be seen that the system may change as the developing individual validates and invalidates the constructs in the system.

The Utility of the "Repgrid"

An instrument for measuring personality is the Role Construct Repertory Test (Kelly, 1955). According to Bonnarius (1965), the Reptest has provided a means for sampling the important constructs which are used by an individual to give structure to the personal and material environment. The test is directed toward the relevent and representative sampling of the person's construct system. Three basic assumptions of the Reptest are: 1) The constructs elicited are permeable, (i.e., open to the addition of new elements). 2) The constructs elicited were in existence prior to the testing situation. 3) The elements are

representative of the construct system.

Levy and Dugan (1956) have delineated the assumptions of the Reptest as: 1) For each individual there exists a universe of persons which constitutes one's social environment. 2) Each individual possesses a repertoire of constructs which is relatively stable over a period of time and which is utilized in structuring the social environment. 3) Constructs contained in a given individual's repertoire bear a relationship to each other such that they may be ordered to certain basic dimensions which define the parameters of the construct system. 4) The structure of an individual's social environment may be duplicated by an observer through knowledge of the parameters of the construct repertoire.

According to Duck (1972), personal construct theory is concerned equally with the content of an individual's construct system, which is composed of the actual constructs used, and with the way in which the individual structures the content. Using the Reptest, he has supported the hypothesis that members of a friendship group would be more similar in their structural arrangement of descriptions of their fellow members, so as to differentiate the group from non group members, in ways that a non friendship group would not.

A generalized version of the Reptest has taken the form of the Repertory Grid ("Repgrid"). It has become a useful measure, according to Slater (1969), to help to understand an individual's personal construction or interpretation of the environment. The "Repgrid" represents a subsystem which is a set of constructs with a common range of convenience. The first step is to identify the elements which are the items defining the range of convenience. For instance, if the desired subsystem were to be one's occupation, then one's fellow workers would be listed as the elements. The constructs would then be obtained to provide the scales for evaluating the elements. This could be done by taking the elements three at a time, and asking the subject to supply an important way in which two of them are alike and yet different from the third. This would be repeated until the desired number of constructs had been obtained. A numerical entry would then be recorded on a table with a row for every construct and a column for every element, recording the value assigned to each element in terms of each construct. The completed table thus produced is the grid.

Protter (1973) requested subjects to construe adolescent crises and dilemmas in different areas of their lives by administering a "Repgrid" for each of the following areas: occupation, religion, politics, sex (for

females only), and overall ego identity (a composite measure of all content areas). This alternative Grid measure was used to yield a profile of the quantative degree of identity status for each content area.

Cognitive Complexity

One variable which has become increasingly accepted as a personality variable is that of cognitive complexity. Barron (1953) noted that individuals differ on their preference for perceiving and dealing with complexity as opposed to simplicity. His research has shown a preference for complexity to be related to such dimensions as originality, impulsiveness, breadth of interest, and independence of judgement.

Scott (1963) related cognitive complexity to cognitive balance. A balanced state is one in which a person's ordering of the world is done in such a way that objects which one likes belong together, and objects which one dislikes belong together, with no association between the two types of objects. His findings indicated that the degree of balance depends on the kind of attribute which was used in grouping the objects. That is, balance seems to be situationally based, dependent on descriptors such as friendly/unfriendly, capitalist/communist, etc. Also, the greater the complexity, the less likely is the person to conceive of objects in terms of characteristics which yield

balanced groups. That is, high cognitive complexity seems to be correlated with an unbalanced state.

Bieri (1955) used Kelly's theoretical orientation to operationally define the concept of cognitive complexity in terms of one individual's predictive accuracy of another individual's behavior. The basic assumptions are that human behavior is characterized by movement in the direction of greater predictability of the individual's environment. Each person possesses a system of constructs for perceiving the social world. The constructs form the basis for making predictions, and are the characteristic modes for perceiving the environment. Bieri has elaborated on these assumptions by stating that because the constructs represent differential perceptions or discriminations of the environment, it should be expected that there would be a positive relationship between the degree of differentiation of one's perceptions of the environment, and the accuracy of one's predictions of the behavior of the elements in the environment. Bieri has designated the degree of differentiation of the construct system as reflecting its complexity or simplicity.

Crockett (1965) has further defined cognitive complexity by using two components: 1) A relatively large number of elements, and 2) Hierarchical integration by relatively extensive bonds of relationships.

The number of elements used, or the differentiation, is based on the assumption that the constructs actually obtained are a sample of the total set of constructs available to the individual. The sample is assumed to be representative of the total number of constructs in about the same proportion for all of the observed subjects. Thus, rank ordering of the subjects on the basis of the number of constructs that they use in the standard situation should approximate the rank ordering which would be obtained if the actual degree of differentiation of every subject were obtainable.

Two approaches to measuring differentiation are: 1) Bieri's, in which he administered Kelly's Reptest, and determined the extent to which the various constructs used by a subject were applied to the various elements. Subjects who applied almost every construct to refer to the same groups of elements were said to be low in cognitive complexity. Subjects whose constructs were applied to markedly different groups were said to be high in cognitive complexity. Bieri obtained a test - retest reliability of .80 on this measure (Crockett, 1972). Crockett suggested an alternative approach in which subjects identified eight individuals who fit predetermined roles, and described each individual in writing. The number of interpersonal constructs was used as a measure of cognitive differentiation.

Crockett has reported a test - retest reliability of this measure to be .95.

The hierarchical organization would be determined by taking the proportion of the constructs in the system which are related, and would therefore be relatively central and superordinate. One method used to measure hierarchical organization is factor analysis, in which a correlation coefficient is used to estimate the distance among the elements. The assumption is that items which fall closer to each other will be closely related and more highly correlated. A high correlation would conceptually indicate a less complex hierarchic organization.

Another method of measuring hierarchic organization has been suggested by Zajonc (1960). This method relies on the phenomenological report of the subject. In this method, the subject is requested to enumerate all constructs which are included in the subject's impression of the person beind described. The subject then sorts these constructs into groupings of one or more constructs. Two constructs are considered similar if they have been sorted into the same group. Homogeneity of the impression is the ratio of the actual number of similar constructs to the number of possibly similar constructs. The unity of the impression is the ratio of dependencies obtained to the possible number of dependencies, where dependency is determined by

asking if a change in one attribute would effect a change in another. Organization of the impression is the extent to which one construct dominates the others (i.e., a core around which the components of a cognitive structure may become readily organized).

Landfield (1977) feels that a definition of cognitive complexity which emphasizes only differentiation does not capture the essence of Kelly's organization and fragmentation corollaries in which the hierarchical organization of constructs is important. Landfield has listed two types of complexity: 1) Functionally Independent Construction (FIC), which measures differentiation, and is obtained by the subject's rating some acquaintances within dimensions which are anchored by the subject's own personal constructs. 2) Ordination (ORD), which measures integration and is obtained by a subject's rating him or herself and his or her acquaintances on a 13 point scale which is anchored by personal constructs.

Landfield has suggested that these two categories be combined into a schema with the following predictions: 1) Low ORD, low FIC - rigid in social adjustments. 2) Low ORD, high FIC - interpersonal confusion and difficulty for others to understand this individual's communications. 3) High ORD, high FIC - no interpersonal confusion, but it is difficult for others to understand this individual.

4) High ORD, low FIC - no interpersonal confusion, and it is not difficult for others to understand this type of individual.

Persons scoring low in both differentiation and integration are more simply organized, and tend to be more rigid in their social adjustments. Social maladjustment is more apparent among subjects who are either low in both differentiation and integration, or low in integration and high in differentiation.

Epting (1972) demonstrated that the use of the Bieri type measure may be extended to examine the level of complexity as defined in terms of the number of constructs available to an individual for formulating the meanings and implications of social issues taken from international, national, local, and community issues, and judged on constructs such as possible/not possible, andvancement/decline, and responsible/irresponsible. The findings indicated to a probability level of less than .01, that such an extension of cognitive complexity may be made.

Smith and Leach (1972) stated that cognitive complexity should be considered a characteristic of the structure of the construct system rather than simply the average degree of interrelationship among the constructs. They used a cluster analysis to support their hypothesis that the fine details of the construct system are more

important for a complex subject than for a simple one.

Tripody and Bieri (1963) reported a test - retest reliability check using both the subject's own constructs and constructs provided by the experimenter. A Wilcoxen test showed that there was no significant difference in terms of measuring cognitive complexity with respect to whether one's own or provided constructs were used. The correlation between the rankings of complexity scores for provided and own constructs was significant at the .05 level.

Vacc and Vacc (1973) described cognitive complexity as an information processing variable which is unrelated to intelligence, and on which the cognitively simple individual is inclined to make only very gross discriminations among dimensions of behavior. They extended the use of this variable to children, and have suggested that measuring cognitive complexity in children would facilitate the study of its development. They established a test-retest reliability of .82 ($p < .05$), and the internal consistency of each item to the single score provided data that all items were consistent ($p < .01$).

In a factor analytic study, Vannoy (1965) found that three broad classes of behavior tendencies are: 1) The tendency to emphasize one or a few judgemental variables to the exclusion of others. 2) The tendency to assign people to

one or a few judgemental variables. 3) The tendency to maintain a narrow perspective which permits a highly ordered view of the world. Vannoy stated that complexity may be one aspect of concept formation, and that it may influence people's perceptions and evaluations of events.

Adams-Webber (1969) stated that in accordance with Kelly's sociality corollary, cognitively complex subjects would more accurately identify their partner's personal constructs from a list of conventional constructs than would cognitively simple subjects. This should be so because the more complex the structure of an individual's construct system, the more readily one would be to grasp the diverse points of view, because of one's having potentially available a greater number of alternative lines of inference to use in interpreting the other person's behavior.

Wilkins, Epting, and Van De Riet (1972) studied the effects of cognitive complexity on repressors, who use denial and avoidance of potential conflict and threat as a primary mode of adaptation, and on sensitizers, who tend to employ obsessive and intellectual defenses. Their findings indicated that repressors are generally less discriminating of their social environment than sensitizers are. The inference from this finding is that levels of cognitive complexity could result from different modes of psychological defense. A second finding indicated that

among both repressors and sensitizers, negative stimulus persons were construed more complexly than positive stimulus persons. A possible explanation for this finding is that individuals might tend to differentiate more finely among negative, anxiety provoking stimulus persons in order to gain greater understanding and predictability of these individuals who may be perceived as potentially dangerous.

Several other studies (Harrison, 1974, Shepher, 1972, Rodda, 1974, Frank, 1973, Platt, 1977) investigated the effects of cognitive complexity on variables such as the perceived valence direction and degree of acquaintance with the rated element, traits which may be judged in terms of whether or not they carry an evaluative implication, (i.e., traits which may be judged as being desirable or undesirable, ego identity status, effectiveness of group leadership, and the degree to which one would differentiate same and opposite sex peers differently. Some of the findings indicated that the sex as well as the valence and degree of acquaintance with the judged element may be influencing factors on the perceived complexity of the judge. Also, whether an element is liked or disliked may affect the direction (favorable or unfavorable) of the rating on traits which carry an evaluative connotation.

Intensity and Consistency

In addition to cognitive complexity, the "Repgrid"

has been used to investigate other dimensions of personality, including intensity and consistency of the construct system. Intensity may be thought of as being related to complexity, but as moving in a different direction. The more complex an individual's system is, the less intense it would be. Where complexity is a measure of differentiation, intensity is a measure of cognitive integration.

This phenomenon has been studied by several researchers (Bannister & Fransella, 1966, Bannister, 1963, Phillips, 1975). The procedure is to request the subject to rank order pictures as elements, on several construct dimensions, and then to repeat the procedure immediately. An operational definition of intensity has been offered as the Spearman rank order correlations between all possible pairs of constructs on the first administration of the grid, and all possible pairs on the second administration. Squaring the correlations and multiplying by 100 gives the percentage of the variance in common. These scores are then totaled, disregarding the signs, and this total is the intensity score. High scores indicate that the subject has rank ordered the elements as if the qualities judged were related (i.e., significantly correlated). Low scores indicate that the subject has treated the qualities as being relatively independent, or correlationally orthogonal.

Consistency has been defined by taking the rhos from the first grid, and rank ordering them from the highest positive through zero through the highest negative, and then treating the rhos of the second grid similarly. The Spearman rank order correlation is then found for these two orderings. This rho is the consistency score, and reflects the degree to which the subject has maintained the pattern of relationships between the constructs from the first to the second grid.

It has been observed that intensity and consistency intercorrelate significantly for thought disordered schizophrenics, non-thought disordered schizophrenics, depressives, neurotics, organically disordered, and subnormal IQ subjects. That is, loose construing, as measured by low intensity, also tends to lead to repeated radical changes in the pattern of construing. The usefulness of the "Repgrid" may be seen as a technique whereby the relationships between the sorting categories may be statistically analyzed and quantified. The correlations between the sorting categories for any one subject may be used to operationally define the subject's conceptual structure for the area examined.

The use of intensity as a diagnostic measure has been validated externally and internally, and may also be regarded as being culture fair. Using consistency as the patterning of the intercorrelations maintained from one grid

to the next, and intensity as the amount of interrelationship between constructs on both grids, Bannister, Fransella, and Agnew (1971) found that thought disordered patients differed significantly on intensity ($p < .05$).

Slater (1972) stated that if a subject were repeatedly compelled to change the evaluation of an element in terms of a construct, that construct's relationship to others composing the system may gradually become weakened. A stable system is one in which the relationships between the constructs remains unaffected when one set of elements is replaced by another. High consistency scores indicate relatively stable systems. As an alternative to the consistency measure, Slater has offered the Coefficient of Convergence. For this measure, the grids must be aligned, (i.e., the constructs in the two grids must be paired exactly). The elements do not need to be aligned. Slater has found a correlation of .943 between the Coefficient of Convergence scores and the consistency scores. He has used this finding to justify the concurrent validity of consistency scores.

Other research (Kear-Colwell, 1973, Phillips, 1976) has shown that there were no significant differences between personality structure, intellectual ability, age, social class, and performance on the Bannister-Fransella intensity measure. According to Williams (1971), intensity

is proportional to the sum of the correlations between the pairs of constructs. Consistency is a rank order correlation between the intensity relationships for pairs of constructs on two successive grids. It is a measure of the relationships between constructs. Williams found that construing was different when the elements were familiar to the subject then when they were unfamiliar. Thus, relevant cues would be necessary in order to obtain an accurate measure. One would expect intensity and consistency to be different for grids dealing with intimate relations and with unknown elements.

Saavedra (1975, 1976) described an intensity measure as being equivalent to the root mean square of the correlations between the constructs. It measures the degree to which the constructs are seen as being related to each other. That is, intensity may be thought of as a lack of differentiation in a construct system. His findings indicated that intensity decreases with age among children. Also, there seems to be a high correlation between intensity and a sexism construct for boys (.75), but a low correlation for girls (.15).

Intensity is a measure of the relative tightness or looseness of the construct system. A system which typifies a tight construction is one in which the intercorrelations between pairs of constructs is high, resulting in a higher

intensity score. A loosely construed system is characterized by lower intercorrelations between pairs of constructs, resulting in a lower intensity score. Also, intensity may be used to tap the constellatoriness or propositionality of the system. An intense, tightly construed system is one in which more superordinate constructs are in use, subsuming many of the subordinate constructs, thus indicating a more constellatory system. A less intense loosely construed system uses fewer superordinate constructs, with more subordinate constructs, indicating a more propositional system.

A "Repgrid" Approach to Self Identity

A third and more recent area of "Repgrid" research has been explored by Norris and Makhlouf-Norris (1976). They investigated the area of self identity, by using a hypothetical construct which they called the self-identity system. The three components of this system are: 1) The actual self, which is the present representation of the subject. 2) The social self, which is the subject's representation of other people's conception of the subject. 3) The ideal self, which is the representation of the subject's aim or direction of desired movement. The major assumption is that the self-identity system functions to reduce self uncertainty by defining the relationships between the three self elements and the representation of

the personal-social environment. The self-identity system is also a summary of previous behavior and its consequences, and it determines the range of choices made in governing the individual's behavior.

A "Repgrid" using the actual self and two other elements to generate each construct would be completed and the data analyzed would be plotted in order to give the distance of each element from the actual self and ideal self. The results from this type of procedure have allowed operational definitions to be given for actual self isolation, ideal self isolation, social alienation, self alienation, and self congruence. In summary, the "Repgrid" may be seen to be a useful instrument for gathering personality data. The data may then be analyzed to produce measures, or indices of various aspects of personality. Some indices thus produced may be obtained as products of rank orderings, correlations, or spatial distances among the elements. The usefulness of the "Repgrid" is enhanced by its being a product of the individual's own construct system. In group studies, the range of convenience of the elements and constructs may be characterized as those elements and constructs which the persons in the group have in common.

Recapitualtion

Personality development has at one time or another been explained through the use of many theoretical points

of view (e.g. psychoanalytic, cognitive, behaviorist, social learning, cultural anthropological). The cognitive and psychoanalytic approaches to personality development are of primary interest in the present investigation.

The personal construct theory of George Kelly and the psychoanalytic theory of Erik Erikson have given psychology two distinctive aspects of the study of personality development. James Marcia has further delineated the psychoanalytic approach with his explanation of identity status.

The research on adolescent development has indicated a developmental trend within that stage of life, and has shown that personality differences may exist at different times during the teen years. It should be reasonable to infer that these developmental trends would have an effect on the development of an identity.

The notion of tight or loose construing (i.e., the relatedness of the constructs within the personal construct system) and the relationship of this aspect of personality to the intensity, or interrelatedness of the constructs within the system should also become observable within a developmental framework. During adolescence the individual may be experimenting with the environment, with varied behaviors, and with the roles which will eventually be assumed within society. This experimentation should result in an initial loosening and eventual tightening of the construct

system as an attempt to validate the system with the result of an initial lowering and then as eventual raising of the level of intensity. Validation may be seen to be similar to Tolman's principle of confirmation of an expectancy, in which an expectancy is said to be confirmed if a particular consequent follows the occurrence of a particular event (Hilgard & Bower, 1975). The use of indices similar to the type used by Norris and Makhlouf-Norris (1976) may help to further delineate the groups of subjects (i.e., male/female, high school freshman/high school junior/college, identity achieved/moratorium/foreclosure/diffusion).

It has been shown that during adolescence, physiological and social changes take place which have an impact on the personality development of the individual. Development in adolescence includes an attempt to clarify one's place within the environment. Some aspects of adolescent development include withdrawal from adult authority, with the consequence of increased independence and responsibility, experimentation with new behaviors, re-evaluation of values, and, in general, the realization that one's place in the milieu in which one lives is changing. The adolescent must cope with growth dilemmas such as independence, sexual behavior, peer group conformity, and establishment of a self definition.

Erikson's theory emphasizes an interaction of the social and biological influences on personality. Personality develops according to an innate ground plan, but the direction in which one will move depends on one's social and cultural milieu. At each stage of development, a decision must be made which is influenced by past development, and influences what will happen in the future. The identity crisis in adolescence is an integration of what has happened previously, and prepares one for the future. A sense of identity gives one a sense of integration within oneself which includes a new cognitive and emotional restructuring of past experiences into a predictable world of experiences. Identity is a process which gives the individual a feeling of continuity of personality which is recognized by others as being consistent.

Identity status, as introduced by Marcia, is an operationalized way of looking at the identity crisis. The four identity statuses (achievement, moratorium, foreclosure and diffusion) are different ways of coping with the identity crisis. At one end of the pole is identity achievement. The identity achieved person knows who he or she is, and where he or she is going. At the other end of the pole is the identity diffused person who has a sense of uncertainty about his or her place in the scheme of things. The person in a moratorium is in the process of actively seeking an

identity. The identity foreclosed person is similar to the identity achieved person, but has taken his or her values from his or her parents, rather than having established them on one's own. The terms defining identity status are the presence of a crisis and the degree of commitment, in the areas of occupational choice and religious and political ideology.

Personal construct theory deals with man as an active experimentor in the environment. One anticipates events based on the results of one's experience with the environment. One acts with the motivating force of confirming or disconfirming one's expectations. The purpose is to improve the accuracy of further anticipations.

The instrument for measuring personality which has developed from personal construct theory is the "Repgrid". It is a representation of a subsystem of the constructs which one uses in perceiving a particualr aspect of the environment. The "Repgrid" is an individualized measure in that it allows the personal constructs which one uses to perceive the world to be elicited. It is nomothetic in that it allows the elements in the environment to be described objectively through the use of a rating scale. This use of the "Repgrid" has been used to define several aspects of personality.

Cognitive complexity refers to the degree of differentiation of one's perceptions of the environment, as determined by the number of elements used to perceive a given situation. Intensity refers to cognitive integration, as measured by the interconnectedness among the constructs in the system. Consistency refers to the correlation between the rank orderings of the constructs on successive administrations of the "Repgrid". Finally the definition of the self has been measured by plotting the distance of self elements from each other.

The purpose of the present research is to explore adolescent development in the light of the theoretical background of Eriksonian psychoanalytic psychology, and by using the methodology produced by personal construct theory. The goal is to examine the development of self definition and the influence of ego identity status, but using indices derived from the "Repgrid". A secondary purpose is to explore differences in personality characteristics which may be used to describe members of the different identity status groups, grade levels, and sexes.

CHAPTER III

METHOD

Hypotheses

The following null hypotheses were tested:

Hypothesis 1: There will be no significant difference among the responses of three different age groups (high school freshman, high school junior, and undergraduate college students) on Marcia's interview for identity status.

Hypothesis 2: There will be no significant difference among the performance of the four identity status groups (achievement, moratorium, foreclosure, and diffusion) on indices derived from the responses to the "Repgrid".

Hypothesis 3: There will be no significant difference among the performance of the four identity status groups (achievement, moratorium, foreclosure, and diffusion) on the protocols of personality descriptions as assessed by the High School Personality Questionnaire or the Sixteen Personality Factor Questionnaire.

Subjects

Seventy-seven high school subjects (freshmen and juniors) were selected from and all male and one all

female Catholic high school in the Chicago area. In addition 38 undergraduate college students were selected from students in an introductory psychology class at a Catholic university in the Chicago area. All subjects were volunteers. Table 5 presents a numerical description of the subjects according to sex, year in school, and assessed ego identity status. Interviews were conducted with 120 subjects. Because of misunderstanding of the directions and technical difficulty with the preliminary analysis of the data, the responses of five subjects were eliminated from the data analysis.

It should be noted that most studies on identity status have been done using samples of 22 to 30 college students. Many studies on identity status have involved as few as two subjects in a cell, and have frequently yielded significant results. The present investigation involves the use of three independent variables, namely sex, grade level, and identity status, which are to be analyzed simultaneously with respect to the dependent variables, using a multivariate procedure. Therefore, the use of a multivariate method should be productive in establishing a relationship between the independent variables and the dependent variables.

Procedure

Each subject was interviewed individually, using

TABLE 5

A Numerical Description of the Subjects According to Sex, Grade Level, and Identity Status

		Achievement	Moratorium	Foreclosure	Diffusion
Males	High School Freshman	4	6	5	5
	High School Junior	2	9	4	3
	College Students	3	2	5	2
Females	High School Freshman	5	6	5	6
	High School Junior	2	8	2	5
	College Students	9	7	5	5

Marcia's interview for identity status. All interviews were tape recorded and scored at a later time by the investigator. The Marcia interview results were used to assign the subjects to the appropriate identity status groups (achievement, moratorium, foreclosure, diffusion). The subjects were not referred to by name, and were assured anonymity. For the high school subjects, each person was given an identification card with the number assigned to that subject. The subjects were then requested to bring that card to the session at which the "Repgrid" and personality measure were administered, so that the results of the two sessions could be matched together without using the subject's name. For the college sample, the subjects were seen for a single two hour session, during which all measures were presented. Because of the difficualty in scheduling, it was necessary to administer the measures to the high school students in two sessions. The order of the measures was held constant for all subjects, and it is believed that this minor difference in administration would not affect the results. The following were the directions for the "Repgrid", which were read to all subjects. Each subject also had a written copy of the following directions to attend to while the directions were being read aloud.

> Do the following:
> Step 1) Hold the Grid so that the numbered lines are at your right. Notice that lines numbered 1 to

5 already have something written on them. On lines numbered 6 through 20, write the first name only, of persons who fit the following descriptions. Be sure that you put the name of the persons on the correct line. Also, be sure that you do not put down the same person in more than one place. Do not put yourself down anyplace other than for numbers 1 to 3.

Line 6. The brother nearest my own age or, the person most like a brother to me.
Line 7. The sister nearest my own age or, the person most like a sister to me.
Line 8. Males: My girlfriend or wife.
Females: My boyfirend or husband.
Line 9. The closest friend of the same sex as myself.
Line 10. The person I once thought was a close friend but in whom I was disappointed later.
Line 11. A person I confide in.
Line 12. A person I know who, for some unexplained reason appeared to dislike me.
Line 13. A person I would like to help.
Line 14. A person with whom I usually feel uncomfortable.
Line 15. A person I know, who I would like to get to know better.
Line 16. The teacher who most influenced me.
Line 17. The teacher whose point of view I find most objectionable.
Line 18. The most successful person I know.
Line 19. The happiest person I know.
Line 20. The person I know who is nicest to others.

Step 2) Hold the Grid so that the lettered lines are at your right. Notice that on the lines lettered A through J there are 10 descriptions which may be used in talking about people, along with their opposites. On the blank lines lettered K through T, write a list of 10 additional descriptions, along with what you consider to be their opposites, on which you would be able to rate the 20 persons using a scale of 1 to 7. Do not use descriptions of physical characteristics such as tall-short. Use descriptions of personality or behavior. Be sure that each of the descriptions is used only once, so that when you have finished, you will have a list of 20 different characteristics, along with what you consider to be their opposites.

Step 3) Rate each person on each characteristic using a scale of one to seven, so that seven means that the person can be described as being very much like the word on the left, six means that the person is somewhat like the word on the left, five means that the person is a little bit like the word on the left, four means that the person is in the middle, three means that the person is a little bit like the word on the right, two means that the person is somewhat like the word on the right, and one means that the person is very much like the word on the right.

For example, first rate each person as being outgoing or shy. Put your rating in the box directly under each person's name. Then rate each person as being adjusted or maladjusted. Put your rating in the second box under each person's name. Continue until you have rated each person on each characteristic.

When I tell you to do so, you will fold and tear off the list of names. This will assure your anonymity as well as that of all the people which you have listed.

Are there any questions?

Instrumentation

Marcia Identity Status Interview. This measure is a semi-structured interview, which takes 15-30 minutes to complete. The interviews were conducted individually, and were tape recorded. The subjects were assigned to the appropriate identity status according to the criteria in the manual (Marcia, 1977). Thishas become a standard procedure for determing identity status as operationalized by Marcia, and for which concurrent, predictive, and content validity have been extablished (Marcia, 1976, Donovan, 1975, Waterman & Waterman, 1972). The results of scoring this measure

are in the form of a nominal scale classifying the subjects into one of four identity statuses (i.e., achievement, moratorium, foreclosure, and diffusion). According to Marcia (1966, 1967), each subject is to be evaluated in terms of the presence or absence of crisis, and the degree of commitment for occupation and ideology. The interview judge is to become familiar with the descriptions of the statuses provided in the manual, and sort each interview into the pattern which it most closely resembles. Judges have included in addition to the aforementioned experimenters, graduate students in psychology, a senior honor student, a teacher, and one essentially untrained judge (Schenkel & Marcia, 1972, Marcia, 1966). Marcia (1976) has cited inter-judge reliabilities as ranging from 72 to 90 percent, using a criterion of either two-thirds or unanimity of agreement. The results of the data gathered in various studies between 1969 and 1972 have indicated an inter-scorer reliability of about 80 per cent.

The responses were classified according to the criteria of crisis and commitment in the areas of occupation and ideology. Crisis refers to a period of decision making. Commitment refers to a reluctance to abandon a path set out upon. The identity achieved individual has passed through a decision making period and appears to be committed to the occupation and/or ideology decided upon. The moratorium

individual demonstrates a sense of active struggle in choosing from among alternatives. Committments are likely to be vague and general. The foreclosure individual does not seem to have passed through any decision making period, but appears to be committed to an occupation and/or ideology. The choices are likely to coincide with those of the parents, whom the subject does not seriously question. The identity diffusion individual has either experienced a crisis or not, but there is little if any committment.

HSPQ/16PF. The High School Personality Questionairre, Form A was used with the high school students, and the Sixteen Personality Factor Questionairre, Form C was used with the college students to determine the patterns of personality trait factors which may be useful in describing the members of each identity status group. These measures were administered according to the directions in the respective manuals (Cattell & Cattell, 1975, Cattell & Tatsuoka, 1970). The results were converted to sten (a standardized score with a range from one to ten) scores for the data analysis. Only the scales which are common to both measures were used. Table 6 presents a summary of the scales and the meaning of high and low scores.

Repertory Grid (Repgrid). The version of the grid which was used was a 20 X 20 grid with the 20 elements listed across the top, and the 20 constructs listed at the

TABLE 6

Descriptions of the Personality Factors

on the HSPQ and 16PF

Factor Name	Low Score	High Score
Reserved/ Warmhearted	Detached, critical, aloof	Outgoing, Attentive to People. Trustful
Dull/Bright	Unable to Handle Abstract Problems	Insightful, Fast Learning
Affected by Feelings/Emotionally Stable	Gets Emotional when Frustrated, Easily Perturbed, Worrying	Emotionally Mature, Calm, Stable
Obedient/ Assertive	Submissive, Dependent, Conforming	Assertive, Independent Minded, Rebellious
Sober/ Enthusiastic	Introspective, Cautious, Reflective	Talkative, Cheerful, Expressive
Disregards Rules/ Conscientious	Quitting, Frivolous, Undependable	Persevering, Responsible, Determined
Shy/Adventurous	Withdrawn, Emotionally Cautious	Active, Friendly, Impulsive
Tough-minded/ Tender-minded	Unsentimental, Self-Reliant, Keeps to the Point	Sensitive, Insecure, Seeking Help and Sympathy
Self Assured/ Apprehensive	Secure, Resilient, Insensitive to People's Approval or Disapproval	Anxious, Depressed, Worrying, Lonely, Brooding
Sociably Group Dependent/Self Sufficient	A "Joiner" and sound Follower	Resourceful. Prefers Own Decisions

TABLE 6 CONT.

Factor Name	Low Score	High Score
Uncontrolled/ Controlled	Follows Own Urges, Careless of Social Rules	Exacting Will Power, Socially Precise, Compulsive
Relaxed/Tense	Tranquil, Unfrustrated, Composed	Frustrated, Driven, Fretful

side. One half of the constructs were those used by Bieri, and the other half were elicited from the subjects.

This instrument was devised to sample the subject's personal construct system. The assumptions of the grid include the representativeness of the constructs in the person's construct system, that the constructs remain relatively stable over time, and that the constructs are used in structuring the person's social environment (Bonarius, 1965, Levy & Dugan, 1956). The "Repgrid" represents a subsystem of the individual's interpretation of the surrounding environment (Slater, 1969). The elements used, as well as the first ten constructs which were taken from the Bieri (1955) measure may be found in Appendix B.

Repertory Grid Indices

The factor analysis of the data using a program with a SOUPAC statistical package, provided the types of indices which were used. Those used in the main analysis are referred to as the Main Grid Indices. A construct by construct analysis was performed, and a principle component analysis was obtained. From this and further manipulation of the data, the following Main Grid Indices were derived:

> Intensity. This index has been developed by Bannister and Fransella (Bannister & Fransella, 1966, Bannister, Fransella, & Agnew, 1971, Bannister, 1963), and is a measure of cognitive integration. The measure is based on the sum of the absolute values of the correlations of all possible pairs of constructs on two administrations of the grid, squared, and multiplied by 100. A high intensity score indicates that the subject treated the

constructs as if they were intercorrelated. This has been found to be a relatively culture free index, having no relationship to intellectual ability, age, or social class (Kear-Colwell, 1973, Phillips, 1976). For the purpose of this research, the intensity measure will be considered to be the sum of the squares of the correlations between the 20 constructs (Saavedra, 1975), when taken from the lower triangle.

$$INT = \sum_{i<j} r_{ij}^2$$

where r^2 is the square of the entries below the diagonal in the correlation matrix.

Consistency. This index (Bannister & Fransella, 1966) has been used to indicate the rank order correlation of the rank orders of the correlations between two administrations of the grid. It has been used to reflect the degree to which the subject has maintained the pattern of relationships between the constructs from the first to the second grid. This study has involved splitting the sample in half and using the odd numbered elements and even numbered elements to obtain a 20 X 20 correlation matrix for each (i.e., the odd numbered elements and the even numbered elements). The Cohen (Cohen, 1969) coefficient was calculated on the lower triangle elements of the matrix in order to correct for the directionality. This is equivalent to the formula

$$\text{Consistency} = \sum_{i<j} r'_{ij} \, r''_{ij} \Big/ \left(\sum_{i<j} r'_{ij}\right)^{\frac{1}{2}} \left(\sum_{i<j} r''_{ij}\right)^{\frac{1}{2}}$$

where r'_{ij} is the correlation between the i^{th} and j^{th} constructs taken across the odd elements and r''_{ij} is the correlation between the i^{th} and j^{th} constructs taken across the even elements.

Self Extremities. The notion of self, as explained by Rogers (1959), refers to the person's view of him or herself. It includes an organized, consistent, conceptual framework, composed of the perceptions of the relationships of oneself to others and to various aspects of life, together with the values which one has attached to those perceptions. The ideal self is a term used to refer to the self or self concept which on would most like to possess. Researchers in personal construct theory (Norris &

Makhlouf-Norris, 1976, Stefan, 1977) have defined the self in terms of construct organization. In the repertory grid extremity of factor scores for a particular element indicated that the element is well defined within the individual's construct system. That is, the magnitude of the factor scores should indicate the degree of definition of the self elements. The Euclidean norm of the element's factor scores in the space spanned by the first two principle components has been used in this investigation as the measure of extremity. Extremities of other elements, particularly the parental ones, have been included among the supplementary indices.

Self Congruencies. In order to obtain measures of the congruency between elements, an index of similarity has been calculated. This index was a Cohen's similarity coefficient (Cohen, 1969). This index has an advantage over a simple correlation or an Euclideal distance, in that it is not influenced by the directionality of a construct or the extremity of the scores. The correlation matrix resulting from the use of this coefficient has produced indices of congruency, or perceived similarity. The congruencies of major interest were the self to ideal self, the self to self as perceived to others, and the ideal self to same sex parent congruencies.

Supplementary Indices. These indices which were obtained but not used in the main analysis were the amount of variance accounted for by each of the first two factors, and the extremities of elements other than the self elements. Because the analysis of the second factor may lead to redundancies, these indices were obtained, but reserved for an after the fact analysis. (see reference note 1 on page 150)

Constellatoriness. This variable is the degree to which the constructs in the system are dependent on each other. Levy (1956) has said that constructs which have significant loadings on the same factor derived from a factor analysis are more interdependent with each other than with other constructs and thus may be said to be designated constellatory. For the purpose of this study, constellatoriness was defined as the square root of the sum of the square of the loadings on the first two factors.

Ancillary Indices. These variables, which were derived from the data, but were not used during the main analysis were the congruencies of the self with each role title, and the congruency of the ideal self with each role title.

The amount of variance accounted for by the factors may be redundanct to intensity. Conceptually, the variance unaccounted for is similar to complexity (Crockett, 1965). Because complexity and intensity measure the same basic phenomenon, but work in different directions, an examination of the variance may lead to an unnecessary redundancy.

The Reliability of "Repgrid" Testing

According to Ryle (1975), Kelly did not find the psychometric concept of reliability to be useful, because low reliability may represent sensitivity to fluctuations in the function being measured, and Kelly's interest was in these fluctuations. Instead, Kelly preferred to think in terms of consistency. Ryle cited research as having shown test-retest correlations in the range of 0.7 to 0.8, and test-retest consistency of 0.8. Fransella and Bannister (1977) stated that reliability may be best seen as merely one aspect of validity. They also stated that the difficulty in expressing reliability comes from the fact that there is no such thing as The Grid. A "Repgrid" is a device for gathering data, and it has a multiplicity of forms, content, and modes of analysis. Consequently, one may not talk about the reliability of a grid in the same sense that is is possible to talk about the reliability of a particular questionairre.

The Validity of "Repgrid" Testing

Validity is another concept which is difficult to relate to the "Repgrid". Fransella and Bannister (1977) stated that talking about the validity of the grid would be similar to talking about the validity of the chi-square. The chi-square, like the "Repgrid", may be described as a format in which the data may be placed, and which reveal whether or not there is a pattern or meaning to the data. The infinite possibility of forms also makes it difficult to make any statement about the validity of The Grid. Although, an argument may be made for intrinsic validity, because the grid reveals a pattern of relationships between the constructs by revealing a pattern in the way in which the person has ranked the elements.

Statistical Analysis

In order to test the hypotheses, the following statistics were used:

1) A chi-square analysis to examine the relationship between age level and ego identity status.

2) A multivariate analysis of variance to examine the relationships among identity status, sex, and age.

3) A multivariate analysis of variance to examine the relationships among identity status, sex, age, and the scores on the HSPQ or 16PF.

4) A canonical correlations analysis to examine the relationship between the Main Grid Indices and the HSPQ or 16PF.

CHAPTER IV

RESULTS

In this chapter, the results of the research will be examined. First, there will be an explanation of how the data were treated. A definition of the Main Grid Indices will be given. Then, each hypothesis will be examined. Finally, a brief description of the after the fact analysis will be provided. In addition to the Main Grid Indices, analyses were made of the Supplementary Indices, constellatoriness, and congruencies between the self, and each other element, and the ideal self and each other element were performed. Because the multivariate analyses did not yield significant results for identity status, it was decided that a discussion of these measures would be non-productive, and would, in some cases, be redundant to the examination of the Main Grid Indices. (See reference note 1 on page 150 for a description of the variables.)

The raw data were analyzed with a construct by construct principal component analysis (Gorsuch, 1974). The extremity of the self elements has been defined as the Euclidean norm, or distance between the element's factor scores in the space spanned by the first two factors (Green & Carroll, 1976). The self congruencies have been defined

as the index of similarity known as the Cohen Coefficient (Cohen, 1969). By using the data output, the following indices were derived: SF2 (the congruency, or perceived similarity between the self and the ideal self), SF3 (the congruency, or perceived similarity between the self and the self as perceived by others), EXTSF (the extremity, or definition of the self), EXTID (the extremity or definition of the ideal self), EXTOT (the extremity, or definition of the self as perceived by others), SSXID (the congruency, or perceived similarity between the same sex parent and the ideal self), INT (intensity), and CST (consistency). The congruencies SF2 and SF3 were taken directly from the output of the factor analysis. The following formulas were used to derive the remainder of the Main Grid Indices:

$$EXTSF = (FS1^2 + FS11^2)^{\frac{1}{2}}$$

where FS1 is the factor score obtained for the element self on the first factor, and FS11 is the factor score obtained for the element self on the second factor. This is equivalent to the distance between the factor scores for the first two factors, of the element self, as defined within a Euclidean space (Green & Carroll, 1974).

$$EXTID = (FS2^2 + FS12^2)^{\frac{1}{2}}$$

where FS2 is the factor score obtained for the element ideal self on the first factor, and FS12 is the factor score for the element ideal self on the second factor. This is

equivalent to the distance between the factor scores for the first two factors of the element ideal self.

$$EXTOT = (FS3^2 + FS13^2)^{\frac{1}{2}}$$

where FS3 is the factor score obtained from the first factor for the element self as perceived by others, and FS13 is the factor score obtained from the second factor for the element self as perceived by others. This is equivalent to the distance between the factor scores for the first two factors for the element self as perceived by others.

It may be stated that for the above three formulas, the distance which is being measured is the distance between the vectors that are formed from the point of origin, by using the Pythagorean Theorem:

$$C^2 = A^2 + B^2$$

where the factor scores are substituted for A and B.

$$SSXID = ID5(sex-1) + ID4(2-sex)$$

where ID5 is the congruency between the ideal self and the father, and ID4 is the congruency between the ideal self and the mother. When sex = 1, SSXID = ID4, and when sex = 2, SSXID = ID5. This equation is a convenient way of saying the congruency of the ideal self with the father if one is male, and with mother if one is female.

$$INT = \sum_{i<j} r_{ij}^2$$

where r^2 is the square of the entries below the diagonal in

the correlation matrix.

Intensity was measured using Bannister's measure, which is the sum of the squares of the entries below the diagonal in the correlation matrix (see page 81 for explanation).

$$CST = \sum_{i<j} r'_{ij} r''_{ij} \Big/ \left(\sum_{i<j} r'_{ij}\right)^{\frac{1}{2}} \left(\sum_{i<j} r''_{ij}\right)^{\frac{1}{2}}$$

Consistency involved the use of a split-half correlation over the odd versus the even elements (see page 82 for explanation).

Major Analyses

In the analysis to follow, the eight above defined variables are referred to as the Main Grid Indices. The hypotheses are systematically examined, and the results enumerated. A more complete descriptive interpretation of the results will be made in the next chapter.

Hypotheses 1 stated that there would be no significant difference among three age groups (high school freshman, high school junior, and college students) on Marcia's interview for identity status. A chi-square analysis has revealed that there were no significant differences among the age groups (chi-square = 8.4. d.f. = 6, $p < .2101$). Thus, null hypothesis one was not rejected, indicating that there was no prevalence of any particular identity status at any particular age.

One can see from the cell frequencies of the chi-square, that for the identity achievement subjects, the high school freshman count was eight, the high school junior count was four, and the college count was 12, giving a row total of 24, and a row percent of 20.9. For the moratorium subjects, the high school freshman count was 13, the high school junior count was 17, and the college count was 9, giving a row total of 39, and a row percent of 33.9. For the foreclosure subjects, the high school freshman count was 10, the high school junior count was 8, and the college count was 7, giving a row total of 26, and a row percent of 22.6. The column totals for the three age groups were 42, with a column percent of 36.5, 35, with a column percent of 30.4, and 38, with a column percent of 33.0, respectively. The differences among the percentages of the rows and columns were not great enough to distinguish among the identity statuses for the various grade levels (see Table 7 for the results of the chi-square analysis).

Hypotheses 2 stated that there would be no significant difference among the identity status groups (achievement, moratorium, foreclosure, and diffusion), on the Main Grid Indices. A multivariate analysis of variance (MANOVA) with sex, (SEX), grade level (GLV), and identity status (EGO) as the independent variables, and the Main Grid

TABLE 7

CHI-SQUARE ANALYSIS OF IDENTITY STATUS BY GRADE LEVEL

	GLV			
Count Row pct Col pct Total pct	HSFR	HSJR	COLL	Row Total
Ach	8 33.3 19.0 7.0	4 16.7 11.4 3.5	12 50.2 31.6 10.4	24 20.9
Mor	13 33.3 31.0 11.3	17 43.6 48.6 14.8	9 32.1 32.7 7.8	39 33.9
Ego For	10 38.5 23.8 8.7	6 32.1 17.1 5.2	10 38.5 26.3 8.7	26 22.6
Diff	11 42.3 26.2 9.6	8 30.8 22.9 7.0	7 26.9 18.4 6.1	26 22.6
Col Total	42 36.5	35 30.4	38 33.0	115 100.

Indices as the dependent variables revealed no significant difference among the identity status groups ($F = 1.1082$, d.f. effect = 24, d.f. error = 244.2268, $p < .3350$). Also, there were no significant differences among the grade levels ($F = 1.6324$, d.f. effect = 16, d.f. error = 168, $p < .0653$). However, a significant difference was found between the sexes ($F = 2.9117$, d.f. effect = 8, d.f. error = 84, $p < .0065$). There were no two or three way interactions. (See MANOVA Table A in Appendix B for a summary of the results of the MANOVA and the cell means.) Thus, null hypothesis two was not rejected. That is to say, the identity status groups did not respond differently in the Main Grid Indices, but there was a difference between the sexes. (See Reference Note 2 on page 151 for a discussion of the cell means.)

Hypothesis 3 stated that no significant difference would be found among the four identity status groups on the protocols of personality trait descriptions as measured by the HSPQ and 16PF. A MANOVA using the Main Grid Indices and the scales on the HSPQ and 16PF (variables V1 to V12) as the dependent variables, and SEX, GLV, and EGO as the independent variables has revealed no significant differences among the identity status groups ($F = .9745$. d.f. effect = 60. d.f. error = 215.64, $p < .5341$). However, significant differences were found for grade level ($F = 3.1043$. d.f. effect = 40,

d.f. error = 144, $p < .0001$), and for sex ($F = 3.6785$. d.f. effect = 20, d.f. error = 72, $p < .0001$). There were no two or three way interactions which were significant. (See MANOVA Table C in Appendix B for a summary of the results.) Thus, null hypothesis three was not rejected, but a difference for sex and grade level was noted. Thus one may not say that there was a personality difference among the identity statuses, but there was among the grade levels and between the sexes. (See Reference Note 3 on page 161 for a discussion of the cell means.)

Supplementary Analysis

A canonical correlations analysis was also carried out, using the 12 scales on the HSPQ and 16PF as covariates, and the Main Grid Indices as the independent variables. A canonical correlation allows one to use a set of independent variables, and a set of covariates, with the purpose of finding a linear combination of each, and correlating these combinations. It has the advantage of comparing sets of data, rather than individual variables. The results revealed no significant canonical (chi-square = 116.6115 d.f. = 96, $p < .0750$). This finding indicates that there was no pattern of relationships between the Main Grid Indices and the personality variables.

As an after the fact exploration of the data, the identity status interview was divided into its three

component parts, (i.e., occupation, religion, and politics) and a MANOVA similar to that done for the global ego identity status classification was conducted for each of the three components. Because the component section for religion was the only one which yielded a significant difference among the identity statuses, the results of the component for religion was the only one reported.

The results of the MANOVA indicated a significant difference among the identity statuses (EGOR) ($F = 1.8151$, d.f. effect = 24, d.f. error = 244.2268, $p < .0135$), a significant difference between the sexes ($F = 2.4055$. d.f. effect = 8, d.f. error = 84, $p < .0281$), and a significant EGOR by GLV interaction ($F = 1.6970$, d.f. effect = 48, d.f. error = 417.3775, $p < .0037$), for the Main Grid Indices. (See MANOVA Table C in Appendix B for a summary of the results.) A MANOVA which included the Main Grid Indices and the 12 personality variables (V1 through V12) yielded a significant difference for EGOR ($F = 1.6257$, d.f. effect = 60, d.f. error = 215.6431, $p < .0064$), a significant difference for sex ($F = 3.3360$, d.f. effect = 20, d.f. error = 72, $p < .0001$), and a significant difference for GLV ($F = 3.2130$, d.f. effect = 40, d.f. error = 144, $p < .0001$). There was no significant two or three way interactions. (See MANOVA Table D in Appendix B for a summary of the results.)

In order to interpret these results, a canonical correlation and discriminant analysis were performed for each effect where a significant MANOVA F was reported. These variables were defined as linear combinations of the raw discriminant function coefficient for each tested variable, multiplied by the original variable. This is similar to a multiple regression, in which the discriminant function coefficients are used as the regression coefficients, and the original variables are used as the independent variables (Kerlinger & Pedhazur, 1973). The derived variables were then correlated with the original variables to find the magnitude and directionality of the correlations with the variables which contributed to the significance of the effect. Table 8 presents a description of the variables thus derived, and Table 9 presents the correlations between the defined variables and the original variables, along with the levels of significance. Table 10 presents the cell means for the derived variables. The means have been standardized for the purpose of interpretation.

Summary

This chapter has presented a description of the results of the data manipulation. The Main Grid Indices were defined, and were analyzed using a multivariate technique. The Main Grid Indices and personality variables

TABLE 8

VARIABLES DERIVED FROM THE DISCRIMINANT ANALYSES

Variable	Manova Variables	Identity Component	Effect
DISEX	Main Grid Indices	Ego	Sex
DSXOR	Main Grid Indices	Egor	Sex
DSXQ	Main Grid Indices, V1 to V12	Ego	Sex
SXQOR	Main Grid Indices, V1 to V12	Egor	Sex
DGLQ	Main Grid Indices, V1 to V12	Ego	GLV
DGLQ2	Main Grid Indices, V1 to V12	Ego	GLV
GLQOR	Main Grid Indices, V1 to V12	Egor	GLV
GLQOR2	Main Grid Indices, V1 to V12	Egor	GLV
EGQOR	Main Grid Indices, V1 to V12	Egor	Egor
DLEGOR	Main Grid Indices	Egor	GLV X Egor
DEGOR	Main Grid Indices	Egor	Egor

TABLE 9

CORRELATIONS AND SIGNIFICANCE LEVELS OF THE DERIVED VARIABLES WITH THE ORIGINAL VARIABLES

Original Variables	Derived Variables					
	DISEX	DEGOR	DSXOR	DGLEGOR	DSXQ	DGLQ
SF2	-.1470	.1216	-.1731	-.3048	.0955	.1968
	.058	.098	.032	.000	.155	.018
SF3	-.5501	-.3066	-.5202	-.2059	.3348	.2963
	.000	.000	.000	.000	.000	.001
SSXID	-.4396	.5317	-.5462	-.7261	.2565	.1932
	.000	.000	.000	.000	.003	.000
INT	-.6406	.0744	-.5448	-.1788	.3947	.3481
	.000	.215	.000	.028	.000	.000
CST	-.1681	-.3497	-.1842	-.5219	.0677	.2336
	.036	.000	.024	.000	.236	.006
EXTSF	.3179	-.0436	.3237	-.1896	-.2568	-.1396
	.000	.332	.000	.021	.003	.068
EXTID	-.2780	.0040	-.2532	.1221	.2315	-.0457
	.001	.483	.003	.097	.006	.314
EXTOT	.3616	-.0144	.4270	-.0802	-.2527	-.2506
	.000	.439	.000	.197	.003	.003
V1					.4874	.5154
					.000	.000
V2					.4147	-.2777
					.000	.001
V3					-.1490	-.0024
					.056	.490
V4					.0980	-.3622
					.149	.000
V5					.2168	-.3754
					.010	.000
V6					-.1237	.4445
					.094	.000
V7					.4786	.0709
					.000	.226
V8					-.0625	.0529
					.254	.287
V9					-.0562	.5273
					.275	.000
V10					-.0410	-.2710
					.332	.002

TABLE 9 Cont.

	DSXQ	DGLQ	DGLQ2	EGQOR	SXQOR	GLQOR	GLQOR2
SF2			.1304	-.1510	.1070	-.2215	.1860
			.082	.054	.127	.009	.023
			.2798	.1209	.3323	-.2059	.3156
			.001	.099	.000	.014	.000
SSXID			-.1526	-.5044	.3543	-.2956	-.1202
			.001	.113	.000	.008	.001
INT			.2894	-.1135	.3418	-.2244	.2951
			.001	.113	.000	.008	.001
CST			.0647	1852	.1200	-.1308	-.0979
			.246	.024	.101	.082	.149
EXTSF			-.2990	.0573	-.0133	-.1316	-.2984
			.001	.271	.034	.080	.001
EXTID			.2538	.0017	.2050	.1316	.2591
			.003	.439	.014	.080	.004
EXTOT			-.2678	.0693	-.2495	.2148	-.3045
			.002	.231	.004	.011	.000
V1			.2032	-.1352	.4530	-.3725	.3158
			.015	.075	.000	.000	.000
V2			.4300	.0648	.4393	.3798	.3752
			.000	.246	.000	.000	.000
V3			-.3600	-.4972	-.1084	-.2047	-.3169
			.000	.000	.125	.014	.000
V4			-.3580	-.0556	.1592	.2113	-.4475
			.000	.278	.045	.012	.000
V5			.1982	.3021	.2973	.4611	.0522
			.017	.001	.001	.000	.290
V6			-.3687	-.3458	-.1860	-.5773	-.2048
			.000	.000	.023	.000	.014
V7			.1389	-.3158	.4943	-.1131	.0460
			.340	.000	.000	.114	.313
V8			-.0780	-.1360	-.1923	-.0807	-.1104
			.202	.351	.020	.196	.120
V9			.9046	-.2303	-.1358	-.4997	.2051
			.157	.007	.074	.000	.015
V10			-.1064	-.0085	-.1001	.2187	-.2343
			.129	.464	.144	.009	.006
V11	-.1335	.1509	-.2918	-.3393	-.1627	-.3003	-.2285
	.077	.054	.001	.000	.041	.001	.007
V12	.1641	.0548	.1254	.1386	.1602	.0104	.1352
	.040	.280	.091	.070	.044	.456	.075

TABLE 10

STANDARDIZED CELL MEANS FOR THE DERIVED VARIABLES

Variable	Significant Effect	Level	Cell Mean
DISEX	Sex	Male	16.0534
		Female	16.0433
DEGOR	Egor	ACH	-10.0573
		MOR	- 9.8062
		FOR	- 9.5275
		DIF	-10.8437
DSXOR	Sex	Male	- 3.2003
		Female	- 4.1588
DSXQ	Sex	Male	11.0399
		Female	12.9106
DGLQ	Glv	HSFR	19.8606
		HSJR	18.8344
		COLL	21.1973
DGLQ2	Glv	HSFR	- 3.2902
		HSJR	- 1.6378
		COLL	- 1.7481
EGQOR	Egor	ACH	2.2928
		MOR	1.9321
		FOR	1.3757
		DIF	3.4236

TABLE 10 Cont.

Variable	Significant Effect	Level	Cell Mean
SXQOR	Sex	Male	15.2129
		Female	16.9801
GLQOR	Glv	HSFR	-13.3072
		HSJR	-11.7068
		COLL	-14.0698
GLQOR2	Glv	HSFR	- 2.2292
		HSJR	- 0.8831
		COLL	- 0.4988
DGLEGOR	Glv X Egor	HSFR	0.8878
		ACH	0.5605
		MOR	1.0999
		FOR	0.9482
		DIF	0.7239
		HSJR	0.9453
		ACH	0.2601
		MOR	0.6295
		FOR	1.3714
		DIF	1.1394
		COLL	0.7721
		ACH	0.8127

TABLE 10 Cont.

Variable	Significant Effect	Level	Cell Mean
		MOR	0.7902
		FOR	0.5901
		DIF	1.4306

were analyzed using MANOVAs to find the relationships between the Main Grid Indices and the independent variables EGO, GLV, and SEX. This procedure was repeated for the personality variables and the independent variables. Then, identity status was broken down into its component parts, and a similar analysis was performed. The results of the main analysis have disclosed a significant difference between the sexes on the Main Grid Indices, and significant differences between the sexes and among the grade levels on the personality variables. The analysis of the component part of identity status for religion has shown significant differences between the sexes, and among the grade levels and identity statuses. In the next chapter, the results of the analysis are more completely discussed.

CHAPTER V

DISCUSSION

In chapter four, it was shown that there were no significant differences found disconfirming the major null hypotheses. Therefore, it can be concluded that the Main Grid Indices and personality variables were not useful measures in distinguishing among the members of the (global) identity status groups for these subjects. Also, no developmental trend was found with regard to (global) identity status. The Main Grid Indices were, however, useful in distinguishing between the sexes. Also, the personality variables were useful in distinguishing among the grade levels and between the sexes. An after the fact exploration of the results did show that several significant differences were found. This chapter presents a more detailed descriptive interpretation of the major variables of interest with particular attention directed to statements concerning the theoretical implications for adolescent development, personal construct theory, Eriksonian psychoanalytic psychology, and personality development in general. A discussion of the Main Grid Indices (SF2 - congruency between self and ideal self, SF3 - congruency between self and self as perceived by others, SSXID - congruency between ideal self and same

sex parent, INT - intensity, CST - consistency, EXTSF - self extremity, EXTID - ideal self extremity, and EXTOT - extremity of self as perceived by others) and the personality variables (V1 - reserved/warmhearted, V2 - dull/bright, V3 - affected by feelings/emotionally stable, V4 - obedient/assertive, V5 - sober/enthusiastic, V6 - disregards rules/conscientious, V7 - shy/adventurous, V8 - tough minded/tender minded, V9 - self assured/apprehensive, V 10 - socially group dependent/self sufficient, V11 - uncontrolled/controlled, and V12 - relaxed/tense) is also presented. For the global picture of ego identity status (Ego), this is done for the effects of sex, and grade level (GLV). For the identity status component of religious ideology (Egor), this is done for the effects Egor, sex, grade level, and the grade level by Egor interaction. Finally, the variables which were derived from the combinations of variables which resulted from the canonical correlations analysis are discussed. Figure 1 presents a summary description of the results of the exploration of the null hypotheses, the after the fact exploration of breaking identity status into its component for religion, and the variables which were derived from each.

Ego

Discussion of the Main Grid Indices

Sex. The MANOVA revealed significant differences

between the sexes. The univariate analyses showed that the significance involved SF3, SSXID, and INT. An examination of the cell means showed that the female subjects were higher than the male subjects on all three variables (Females: SF3 = .81, SSXID = .69, INT = 41.01. Males: SF3 = .68, SSXID = .56, INT = 32.44). This indicates that for these subjects, the congruency between the same sex parent and the ideal self, and the congruency between the self and the self as perceived by others are stronger influencing factors in the development of females than in males. Also, the female's construct system is more intense, indicating that they have a greater degree of interconnetedness among the constructs in their systems than do males. Their construing of the environment is tighter, leading to less varying predictions regarding the elements in the environment than is true for the males. This means that during adolescent development, individuals look to others for an indication of where they stand in relationship to themselves and to others. It seems that the same sex parent is the one who carries the most influence for both the female and male subjects, but the influence is stronger in the females. These adolescents used the similarity between the ideal self and same sex parent as a guide. The similarity between the self and self as perceived by others is also influential. That is, adolescents have a good

Figure 1

A Descriptive Summary of Results Relating the Data Analysis Findings to the Derived Variables

Main Analysis

Ego (Global Identity Status)	Variables Derived From Significant Canonicals
H_o: Age difference for identity status - Not rejected	
H_o: Identity status difference on Main Grid Indices - Not rejected BUT Significant difference Between sexes	DISEX
H_o: Identity status difference on personality variables V1 to V12 - Not rejected BUT Significant difference between sexes	DSXQ
Significant difference among grade levels	DGLQ
	DGLQ2

After the Fact Exploration

Egor (Identity Status Component for Religion)	Variables Derived from Significant Canonicals
1) Identity status difference on Main Grid Indices	DEGOR
2) Sex difference on Main Grid Indices	DSXOR
3) Identity status by grade level interaction on Main Grid Indices	DLEGOR

Figure 1 Cont.

After the Fact Exploration

4) Identity status difference on personality variables — EGQOR
5) Sex difference on personality variables — SXQOR
6) Grade level difference on personality variables — GLQOR, GLQOR2

conception of how similar they are to how they would ideally like to be and how similar they are to how others perceive them. Perhaps it is the same sex parent who provides the adolescent with a perception of what he or she should be like. Possibly, this kind of perceptual modeling (i.e., perceiving oneself as being similar to someone else) is necessary to help the adolescent fit into the experiencing of the environment. This is especially so for the females. The indication that the ideal self and same sex parent play important parts in establishing the perception of the self supports Erikson's notion that during adolescent identity formation, it is necessary to compare oneself to others using two sets of standards for comparison (i.e., one's own standards, and those of the others'). The important others seem to be the same sex parent, as compared to the ideal self, as well as other elements in the environment.

The results of this study have also supported Erikson's (1968) notion that a personality difference between the sexes may be noted. The female subjects were more perceptually similar to their mothers as an ideal figure than the male subjects were to their fathers. Also, the female subjects were more perceptually aware of similarity between themselves and how others perceive them than were the male subjects. Finally, the female subjects were

construing their environment more tightly than the male subjects. Their constructs are more interwoven, leading to more constant predictions of the events in the environment. Perhaps this difference has been influenced by the recent emphasis on equal rights. This new equal rights attitude may have influenced women to perceive the environ- more tightly (i.e., they have a better notion of who they are and who they want to be). Erikson has observed that women had a great deal of difficulty in expressing themselves. This does not seem to be the case today. Perhaps the higher level of intensity indicates that women tend to have greater ability to speak out and tell what is on their minds than do men. If this is the case, then it would be necessary to examine this part of Erikson's theory in light of the changes which have taken place within the years since he first formulated his ideas. Perhaps the growing emphasis on occupational equality has caused women to become more aware of the environment than are men. The higher level of intensity could have resulted from a more difinite construing of the environment on the part of women. That is, being made more aware of opportunities which have been closed in the past, may have caused women to use a tighter organization of constructs to view the world than do men, who take such opportunities for granted.

Discussion of the Main Grid Indices and V1 to V12

Sex. The MANOVA showed a significant difference between the sexes. The univariate analyses showed that the personality variables which accounted for the significance were V1 (reserved vs. warmhearted), V2 (dull vs. bright), and V7 (shy vs. adventurous). An examination of the cell means shows that the female subjects were higher than the male subjects on all three variables (Females: V1 = 6.40, V2 = 6.26, V7 = 6.54. Males: V1 = 5.06, V2 = 5.32, V7 = 5.18). This indicates that the female subjects tended to be more warmhearted, bright, and adventurous, while the male subjects could be characterized as being more reserved, dull, and shy. That is, the male subjects are described as more critical, objective, distrustful, rigid, less well organized, unable to handle abstract problems, shy, emotionally cautious, rule bound, and quick to see dangers. The female subjects are described as more easygoing, attentive to people, trustful, warmhearted, inclined to have more intellectual interests, persevering, responsive, friendly, impulsive, and carefree.

In terms of personal construct theory, the male subjects tended to view the world with caution and suspicion. They seem to be more sensitive to what could be perceived as threatening situations, and they enter into interpersonal relationships slowly and carefully. The female subjects,

on the other hand, seem to view the world as a safe place. They readily enter into interpersonal relationships, and feel quite comfortable with others. The world, for them, is a source of enjoyment, and possibly excitement. They tend to move right into new situations and are not concerned with the possible outcomes.

In terms of Erikson's theory, males and females react differently to the adolescent identity crisis. The significant variables here, indicate that adolescence is strongly reminiscent of the "Basic Trust vs. Mistrust," stage of development. The male subjects are dealing with a less trustful perception of the environment than are the females. There seems to be a sex difference in the subjects' reaction to identity formation as being a perception of the similarity between the self and ideal self, and the ideal self and the same sex parent. The male subjects are threatened by their perception that ideally, they should be like their fathers. The female subjects, on the other hand, are more comfortable with the perception that they should, ideally, be like their mothers. This also may affect the level of intensity. The male subjects, characterized by lower intensity, and therfore looser construing, might be thinking about the various alternative plans for fitting into the scheme of things. In Kelly's (1955) terms, loose construing involves an element's being classified at one

pole of a construct at one time, and at the other pole at another time. Thus, the male subjects may be more ambivalent in their perceptions of their ideal self, their father, their identity, and in general, their notion of who they are in terms of coping with the identity crisis. The female subjects, on the other hand, may be more constant in their perceptions of who they are and what they perceive as being their place in the world. In summary, it seems that the adolescent male subjects spend more of their time wondering about the various possible outcomes of their adolescent experience, vacillating back and forth, trying to decide which alternative is the one they want to select. This arouses a sense of mistrust, and perhaps a sense of insecurity in the face of so many decisions to make. Adolescent females seem to be more sure of their ideas, and of their place in society. Thus, they develop a more secure, trusting feeling that they know who they are and where they are going. Perhaps this is because the variety of opportunities open to females is, or is perceived to be, more limited than that for males.

Grade Level. The MANOVA showed a significant difference among the grade levels. The univariate analyses showed that the significance involved the variables V1(reserved vs. warmhearted), V2(dull bs. bright), V4(obedient vs. assertive), V5(sober vs. enthusiastic), V6(disregards rules vs.

conscientious), and V9(self-assured vs. apprehensive). An examination of the cell means showed that the high school freshmen scored high on V4 (7.24), and V6 (5.86), and they scored low on V2 (5.26). The high school juniors scored high on V2 (6.77), and V5 (6.74), and scored low on V1 (5.17), V6 (4.20), and V9 (4.46). The college students scored high on V1 (6.68), and V9 (6.39), and scored low on V5 (5.61), and V4 (5.87).

The high school freshmen, then, may be described as being assertive, aggressive, stubborn, rebellious, but at the same time, determined, conscientious, concerned about moral standards, and unable to handle abstract problems.

The high school juniors may be described as being insightful, adaptable, alert, cheerful, but at the same time, critical, distrustful, aloof, frivolous, undependable, disregarding obligations to people, self confident, uncaring, and insensitive to other people's approval or disapproval.

The college students may be described as being more easygoing, attentive to people, trustful, warmhearted, but at the same time, apprehensive, insecure, sensitive to people's approval or disapproval, introspective, cautious, reflective, conventional, diplomatic, and submissive.

These descriptions support what the literature has suggested about adolescent development. The high school freshmen seem to be characterized by a stage of rebellious-

ness, during which there is a stubborn, but conscientious attitude, and a concern about one's relationships with others. Perhaps the lower ability to handle abstract problems may be attributed to the younger adolescent's not having achieved formal operational thought, as Piaget (Rohwer, Ammon, & Cramer, 1974) has suggested. Perhaps the younger adolescent is facing a situation in which the constructs used to view the world are being threatened. According to Kelly (1955), a threat is experienced when one faces an impending upheaval in one's core structure, or the constructs which are used to maintain the personal construct system. That is, the younger adolescent is faced with a rapid biological and social change. This change causes the adolescent to examine and restructure the perceptions which one has about oneself, others, and the relationship between oneself and others. This involves a restructuring of the construct system. It is this restructuring which may be the cause of a perceived threat. In an attempt to halt, or slow down this change in construct structure, the younger adolescent may be reacting with an aggressive attempt to resist the change. This results in what may be perceived by others as a rebellion.

To take one example, the physical change in adolescence is one which is readily seen. The adolescent, faced with this change in appearance, must restructure the

constructs with which one's body image is perceived. The rapidity of the change produces a threat to the construct system, because the adolescent does not have enough time to adjust to the new, or altered constructs needed to perceive oneself. As a result of this, the threat is reacted to with hostility, and the adolescent may exhibit behavior which may be construed by others as a rebellion. It is as if the adolescent were asking that the changes slow down, so that the adjustment may be made at a pace which is not so threatening.

The high school juniors are more self confident, but still are suspicious. It is as if they had restructured their construct system to accept the biological changes which took place, but are still working on their social relationships. Perhaps they have made an adjustment to their self image as they perceive themselves, but still need to incorporate the views of others within their own systems. The biological reaction is over, but other people may still pose a threat to the core system. They react by showing unconcern for other people's opinions. Perhaps at this stage in development, the adolescents are looking to others for their views, but are not ready to incorporate them into their own construct system. By this time, biological change has slowed down, and the adolescent has more time to devote to social relationships. One's constructs must now be adjusted to include the perceptions of others, and other's

perceptions of oneself within a social context.

The college students were more introspective, and more concerned with other's opinions. Perhaps at this stage of development, the construct system of the social perception of oneself has become consolidated, and one is ready to include others in the structure. A sense of who and what one is has been developed, and it is now necessary to try one's perceptions of oneself on others. It could be that prior to this stage, adjustment to one's perceptions, and experimentation with one's behavior, have taken place on a trial-and-error basis. At this stage, it is possible to be more systematic about one's behavior, and to think about, or reflect on the implications of one's behavior. Development seems to have slowed down to a pace at which one is able to reflect on one's construct system with respect to oneself, others, and the relationship between oneself and others. With development at this level, it becomes possible to proceed into the Eriksonian stage of intimacy. With the consolidation of the constructs about the self, it becomes possible to construe another person's system, which makes it possible to establish an intimate relationship.

Egor

The classifications produced by Marcia's interview for identity status were broken down into the three component parts. In this section, an examination will be made

of those variables which were significant, using the component of identity status for religion as the criterion component. Therefore, the following discussion will be related to religious ideology.

Discussion of the Main Grid Indices

Identity Status. The MANOVA (see MANOVA Table C in Appendix B for a summary of the results) revealed a significant difference among the identity statuses ($F = 1.8151$, d.f. effect = 24, d.f. error = 244.23, $p < .0135$). The univariate analyses showed that the variable which accounted for the significance was EXTOT ($F = 3.35$, $p < .05$). An examination of the cell means showed that the moratorium group was highest (1.22), followed by the achievement group (1.17), the diffusion group (.88), and finally the foreclosure group (.82). This indicates that the extremity of the self as perceived by others is most influential for the moratorium, next for the achievement, then the diffusion, and finally the foreclosure subjects.

Being in the midst of the identity crisis, the moratorium subject would be looking for alternatives, deciding which to take. Erikson (1968) said that during adolescence, one forms an identity through the process of judging oneself in the light of one's perception of how others judge one. The subject in the moratorium status is doing just that. Thus, the Eriksonian notion of identity formation seems to

be supported. The identity achieved subject, having gone through a crisis and come to terms with a commitment, is characterized by a less well defined idea of the self as perceived by others. The difference between the two means, however, is not great. Perhaps after having gone through the identity crisis, the adolescent begins to concentrate on a definition of the self which is not so strongly influenced by how one is perceived by others. The self is defined more in terms of how one perceives oneself, regardless of the perceptions of others. During the moratorium, the adolescent would be searching around, experimenting with different behaviors, and noting the reactions that the new behaviors evoke from others. This could account for the more defined self as perceived by others among the moratorium subjects. That is, the person in the moratorium status is making an active attempt to define the self in light of the perceptions of others. The identity achieved subject is able to concentrate on the self in terms of how one perceives the self, after having taken the perceptions of others into account.

The diffusion group was marked by a lower EXTOT. This would be expected, because the person in a state of identity diffusion would be unconcerned with how others react to, or perceive him or her. The identity diffusion individual demonstrates no sense of active struggle, nor is

there any concern about establishing an identity. It would therefore be expected that the identity diffusion person would not have a clear notion of how others perceive him or her.

The foreclosure group was lowest on EXTOT. Perhaps this is because persons in this group classification have not experienced a crisis period. They have accepted what their parents have told them, or what they have always known to be true. Because they have not thought about alternatives, they would not have developed an idea of how others perceive them. Because they have not looked to others for help in defining the self, the self as others perceive it is out of the range of convenience of the identity foreclosure person's construct system.

Sex. The results of the MANOVA showed that there was a significant difference between the sexes ($F = 2.4055$, d.f. effect = 8, d.f. error = 84, $p < .0218$). The univariate analyses showed that the difference is similar to that found for the sex difference for the global identity status. The exception was that SF3, which was significant for Ego, was not significant for Egor. Perhaps this is due to a feeling that where religious ideology is concerned, there is a personal decision to make, which is not influenced by the views of others. Possibly these adolescents are relying more on the religious convictions of their parents than on

those of others in their environment, in order to establish a religious ideology.

Grade Level by Identity Status Interaction. The MANOVA showed a significant difference for the interaction of the effects of grade level and identity status ($F = 1.6970$, d.f. effect = 48, d.f. error = 417.3775, $p < .0037$). The univariate analyses showed that the variables which accounted for the significance were SSXID ($p < .01$), and CST ($p < .05$). An examination of the means showed that for SSXID, the achievement (HSFR = .75, HSJR = .37, COLL = .30) and diffusion (HSFR = .74, HSJR = .53, COLL = .16) groups declined steadily with age. The moratorium (HSFR = .69, HSJR = .55, COLL = .76) and foreclosure (HSFR = .64, HSJR = .59, COLL = .82) groups decreased by the junior year in high school, and then increased to a level higher than that begun with by college age. For CST, the achievement (HSFR = .99, HSJR = .98, COLL = 1.0) group decreased and then increased with age. For the moratorium (HSFR = 1.0, HSJR = 1.0, COLL = .99) group the high school juniors were the same as the freshmen, but the college students were lower. The foreclosure (HSFR = .99, HSJR = .99, COLL = 1.0) subjects increased in consistency from the junior year in high school to college. The diffusion (HSFR = 1.0, HSJR = 1.0, COLL = 1.0) group remained the same throughout.

This indicates that for both the identity achievement

and diffusion subjects, the similarity between the ideal self and the same sex parent were perceived as decreasing with age. This is a reasonable finding, because as one grows older during adolescence, one attains a sense of independence from parental demands. For the identity achievement subject, this results in a solidifying of the identity. One gains a better understanding of who one is, and therefore is able to become independent of the parents. In the case of the diffusion subjects, the nature of the diffusion pulls one farther away from the perceived model. The diffusion subject's moving away from the perceived similarity between the ideal self and the same sex parent is even stronger then that of the achievement subject's, as is witnessed by the means of the high school freshmen (Ach = .75, Dif = .74), and the college students (Ach = .30, Dif = .16). They are both moving away from the parent as a perceived identity figure, but for different reasons. The identity achieved subject has established an identity which becomes solidified. The diffusion subject moves farther away from the ideal perceived identity figure and becomes more diffused.

The moratorium and foreclosure subjects show a drop and subsequent increase in SSXID, with the stronger change in the moratorium group. This indicates that those who

begin the identity crisis period in high school in one of these two groups deemphasize the perceived similarity between the ideal self and the same sex parent, but gradually come to strengthen it. For the moratorium group, this should be expected. As identity becomes established, one gradually accepts the same sex parent as the perceived identity figure. This reaction is unexpected, however, among the foreclosure subjects. One would expect them to remain constant throughout. They do end up with the strongest perceived similarity between the ideal self and the same sex parent. Perhaps this can be explained as an outward appearance of deemphasizing the parent which, because no real crisis was experienced, was not internalized. That is, the foreclosure subject may give the impression of having deemphasized the same sex parent as a perceived identity figure for the ideal self, but knows, in the back of his or her mind, that the rejection will not last. Or perhaps, the early foreclosure person has had more reinforcement from the perceived similarity to the same sex parent.

Consistency increased among the age groups for the identity achievement subjects after a slight decrease in the junior year of high school. This indicates that their construct systems become more solidified with age. Perhaps this is a result of the decreased perceived similarity to the same sex parent, which would imply an increased use of

one's own self as a source of identity. The moratorium subjects became less consistent between the junior year in high school, and college. Perhaps the change from the protected environment of high school to the uncertain environment of college contributed to a decrease in the consistency with which the subjects used their constructs to view the world. The foreclosure subjects, on the other hand, became more consistent between the junior year in high school and college. Perhaps this is because they see themselves as becoming more like the persons their parents wanted them to be. The increased consistency, accompanied by the increased perceived similarity between the same sex parent and the ideal self may be resulting from the foreclosure subject's perception of the self becoming more like it, "Should," be (i.e., like the same sex parent). The result is that the constructs in the system become more solidified and consistent. The diffusion subjects remained equally consistent throughout the age levels. This indicates that even though the diffusion subject is not aware of his or her place in the world, the constructs used to perceive the environment remain consistent through adolescent development. It is as if the diffusion subject's lack of committment does not affect the consistency of the perception of the environment. This may be related to the diffusion person's lack of desire or interest to change, or to take any over action

to establish an identity.

Discussion of the Main Grid Indices and V1 to V12

Identity Status. The MANOVA (see MANOVA Table D in Appendix B for a summary of the results) showed a significant difference among the identity statuses for religious ideology ($F = 1.6257$, d.f. effect = 60, d.f. error = 215.6431, $p < .0064$). The univariate analyses showed that the variables which influenced the difference were EXTOT ($F = 3.35$, $p < .05$), V3 (affected by feelings vs. emotionally stable, $F = 3.54$, $p < .05$), and V8 (tough minded vs. tender minded $F = 4.77$, $p < .01$). An examination of the cell means shows that for EXTOT, the moratorium subjects scored highest (1.22), followed by the achievement subjects (1.17), the diffusion subjects (.88), and finally the foreclosure subjects (.82). For V3, the foreclosure subjects scored highest (6.86), followed by the achievement subjects (6.56), the moratorium subjects (6.55), and finally the diffusion subjects (5.22). For V8, the moratorium subjects scored highest (6.06), followed by the achievement subjects (6.00), and then the foreclosure (4.91) and diffusion (4.91) subjects.

This indicates that for religious ideology, the extremity or definition of the self as perceived by others influences the personality. Also, the personality traits which are affected are those which deal with emotionality.

That is, religion seems to be an emotionally involved experience which is defined in terms of how one perceives oneself when compared to how others perceive one.

The moratorium subjects, who is the most well defined in terms of the perceptions of others, is more sensitive and more easily upset. For this person, religion involves a strong commitment, accompanied by an emotional charge. Because this person is in the midst of coming to terms with religious convictions, the moratorium subject shows a total involvement. Religion is not a perfunctory activity. It is an activity which involves one entirely. One is involved both physically and emotionally.

The identity achieved subject is similar to the moratorium subject in personality, but is slightly less well defined in the extremity of the self as perceived by others. Perhaps achieving identity involves a relaxing of one's emphasis on other's perceptions, and a stronger involvement with one's own perception of oneself. The focus changes from watching other's reactions to using one's own reactions as a guide.

The foreclosure and diffusion subjects were low on EXTOT and characterized as being tough minded. The diffusion subjects are more affected by feelings than the foreclosure subjects, who are more emotionally stable. Perhaps they are reacting differently to the absence of meaningful

crisis period. The foreclosure subjects, having accepted their religious convictions without question, may be more constant and stable in viewing those convictions. The diffusion subjects, because of the confused state of their identity, may become easily frustrated, and may tend to give up, or evade responsibilities. This could be due to the diffusion subject's not being committed to anything in particular. It is easy to become frustrated when one does not know in which direction to travel.

Sex. The MANOVA showed that there was a significant difference between the sexes for religious ideology ($F = 3.3360$, d.f. effect = 20, d.f. error = 72, $p < .0001$). The univariate analyses showed that the variables for Egor which accounted for the difference were almost the same as those for Ego. The exception was that for Egor, the variable SF3 was not significant, and V5 (sober vs. enthusiastic, $F = 4.06$, $p < .05$) was added. This indicates that achieving a religious identity does not involve the perceived similarity between the self and the self as perceived by others. Perhaps religion is viewed as a personal decision, and one does not need to feel that one is similar to how others perceive one. While politics and occupation are more socially oriented components, religion relies more on one's personal convictions, as judged by one's own standards.

On V5, the male subjects may be described as being

more sober and serious, while the female subjects were more enthusiastic and happy-go-lucky. Perhaps this is because the female subjects may tend to discuss religious matters more than the male subjects. This is not to say that religion is less important to the male subjects, but that the female subjects tend to be more actively involved in expressing their views on religious matters.

Grade Level. The MANOVA showed a significant difference among the grade levels ($F = 3.2310$, d.f. effect = 40, d.f. error = 144, $p < .0001$). The univariate analyses showed that the variables which accounted for the difference were the same as those for Ego. Thus, there would be no difference between the descriptions of the grade levels on the global ego identity status and the religious component.

Discussion of the Derived Variables: A Clinical Analysis. For each multivariate analysis of variance, a canonical correlation and discriminant analysis were performed. This according to Kerlinger and Pedhazur (1973), adds to the interpretability of the results. For each instance in which there was a significant canonical, a variable was defined as the linear combination of the discriminant function coefficients times the original variables. A pearson correlation was then performed, correlating the derived variables with the original variables. The

following is a discussion of the results of this procedure. The interpretations were based on the standardized means of the variables (see tables 8, 9, 10, pp. 97-102 for a description of the variables, the correlations and significance levels of the derived variables, and the standardized cell means for the derived variables. See Table 11, p. 130 for a description of the results of the canonical correlations analyses for the derived variables. See Figure 1, p. 107-108 for the relationships between the MANOVAS and the derived variables.)

DISEX. This variable was derived from the MANOVA for the Main Grid Indices, for the effect of sex, on Ego. This variable correlated negatively with INT, SF3, and SSXID. The male subjects were higher on DISEX than were the female subjects. Persons who are high on DISEX are characterized as having low intensity, low congruency between the self and the self as perceived by others, and low congruency between the ideal self and same sex parent. What DISEX is describing is a person for whom the perceived similarity between the self and the self as perceived by others, and the similarity between the ideal self and the same sex parent are most influential in establishing identity. This person is establishing an identity which is ideally not similar to the same sex parent, and is not similar to the self as perceived by others. This could indicate a search to free oneself from the expectations which others have for

TABLE 11

RESULTS OF THE CANONICAL CORRELATIONS ANALYSES

FOR THE DERIVED VARIABLES

Variable	Chi-square	D.F.	p
DISEX	21.2936	8	.0065
DEGOR	41.8896	24	.0133
DSXOR	17.9465	8	.0217
DGLEGOR	78.5123	48	.0036
DSXQ	57.0233	20	.0001
DGLQ	101.3560	40	.0001
DGLQ2	44.3084	19	.0009
EGQOR	91.2932	60	.0057
SXQOR	53.1187	20	.0001
GLQOR	104.4077	40	.0001
GLQOR2	41.4390	19	.0022

one, in order to find out what one is really like. This reaction may demonstrate an instance in which the adolescent is trying to find the self by being different. It could explain the adolescent's esoteric use of language (Schwartz & Merton, 1975), tast in music, and mode of dress. This reaction could be explaining an active moratorium. If one would not go through this type of reaction, the result could be identity foreclosure or diffusion, rather than achievement.

DEGOR. This variable was derived from the MANOVA for the Main Grid Indices, for the identity status effect on Egor. The variable was correlated positively with SSXID, and negatively with SF3 and CST. The moratorium and foreclosure subjects were high on DEGOR, while the achievement and diffusion subjects were low, with the foreclosure subjects being the highest and the diffusion subjects the lowest. Subjects who were high on DEGOR may be characterized as perceiving much similarity between the ideal self and same sex parent, but dissimilarity between the self and self as perceived by others. Also, they have a less consistent construct system.

This variable is describing persons for whom establishing an identity involves being similar to the same sex parent, but unlike one's perceptions of how others perceive one. A high level of DEGOR is describing what would be

expected from a person in identity foreclosure. Parental views have never been questioned, and take precedence over the perceptions of others. It is this person's perceived ideal to be like the same sex parent. This is accompanied by lower consistency. Because no crisis has been encountered, the construct system would not be used similarly in different situations. This is because the commitments arrived at are not one's own.

For the identity diffused subject, the converse would be the case. This person would like to be unlike the same sex parent, and perceives the self as being like the self as perceived by others. The identity diffused person is low on DEGOR, therefore higher on consistency. The confusion and contradictions which one faces in the situation of not having one's hypotheses about the world validated lead to a consistent system, but one which is not instrumental in helping one to establish an identity. The constructs in the system are rigidly applied. This reflects the identity diffused subject's being committed to a lack of commitment. Perhaps there is some dissatisfaction with viewing one's ideal self as being different from the same sex parent, but at the same time, similar to the way that others perceive one, which contributes to the state of identity diffusion. This may be particularly true in the case of the person who perceives him or herself as being

different from the same sex parent, but who is told by others, "You are exactly like your mother/father."

DSXOR. This variable was derived from the MANOVA for the Main Grid Indices, for the effect of sex on Egor. This variable correlated negatively with SSXID, SF3, and INT, and correlated positively with EXTOT. The male subjects were higher on DSXOR than the female subjects. Persons who were high on DSXOR may be described as being low in intensity, having lower perceived similarity between the ideal self and the same sex parent, low perceived similarity between the self and the self as perceived by others, and a well defined self in terms of the perceptions of others.

This variable is describing a person with a loosely construed system (i.e., one who is not sure of the results of interacting with persons in the environment). This person also perceives the ideal self as being unlike the same sex parent, and unlike how others perceive him or her. Also, this person has a well defined notion of how he or she is perceived by others. This person seems to be depending on others for the establishment of religious ideology. There There is certainty of how one is perceived by others, and there appears to be discontent with those perceptions. It is as if this person wants to change the way in which others perceive him or her. Intensity is lower, indicating that the predictions made by the use of constructs within the

system vary. Perhaps this variable is useful in describing a person who is in a moratorium (i.e., one who is trying to actively search for an identity).

DGLEGOR. This variable was derived from the MANOVA for the Main Grid Indices, for the interaction of the effects of grade level and identity status, for Egor. This variable correlated negatively with SSXID and CST. The high school junior subjects scored highest, followed by the high school freshmen, and finally the college students. Among the high school freshmen, the moratorium subjects scored highest, followed by the foreclosure, diffusion, and finally the achievement subjects. Among the high school juniors, the foreclosure subjects scored highest, followed by the diffusion, moratorium, and achievement subjects. Among the college subjects, the diffusion subjects scored highest, followed by the achievement, moratorium, and foreclosure subjects.

This variable is describing a person who perceives the ideal self as being unlike the same sex parent. Also, the construct system is low in consistency (i.e., there would be different rank orderings of the constructs within the system on successive occasions). It seems reasonable for high school juniors to be highest on this variable. This age group, as a whole, is more likely to be searching for an identity, resulting in lower consistency. The high

school juniors seem to be rejecting the same sex parent as a perceptual identity figure. By college, the subjects seem to have resolved some of the identity question, resulting in a more consistent system, and a reestablishment of the same sex parent to the ideal self congruency. Perhaps this indicates that in order for the adolescent to establish an identity, it is necessary initially to reject the same sex parent as a perceptual identity figure, and subsequently, as one's own identity becomes established, to accept more of the parental identity figure. One finding of interest is that the high school junior foreclosure subjects were highest on DGLEGOR, while the college foreclosure subjects were lowest. Perhaps this indicates that while the parents have inculcated an unquestionable set of values, the foreclosure subject reacts, nevertheless. This person may be thinking, "My parent is right, but I don't want to admit it." Then, by college, this question is resolved, with the person being convinced more strongly than before that the parent was right all along.

DSXQ. This variable was derived from the MANOVA for the Main Grid Indices and V1 to V12, for the effect of sex on Ego. The variable correlated positively with V1, V7, and V2. The female subjects scored higher than the male subjects.

This variable is describing someone who may be

characterized as warmhearted, adventurous, and bright. It seems to be describing an extravert vs. introvert dimension. Persons scoring high on DSXQ tend to be more outgoing, and would probably be good group leaders. They express themselves more and tend to be less sensitive to criticism. Also, they are more likely to adapt to the decisions made by the group members, as well as to express their own views.

DGLQ. This variable was derived from the MANOVA for the Main Grid Indices and V1 to V12, for the effect of grade level on Ego. This variable correlated positively with V9 and V1. The high school juniors scored lowest, followed by the high school freshmen, and finally the college students.

This variable is describing a person characterized as apprehensive, but at the same time, warmhearted, as opposed to being self assured, but reserved. It is a person who is good natured, but anxious. It is as if a person high on DGLQ gives an outward appearance of being trustful and warmhearted, but is given to moodiness. This is a person who likes to appear to be calm, but who, on the inside, is worried and anxious.

The high school freshmen are characterized by a moderate level of DGLQ. Perhaps the experience of entering high school is a contributing factor. There is an

uncertainty about what will transpire during the next four years. By the junior year, a settling down seems to have taken place, with the subjects' becoming more self confident, but at the same time, distrustful. The experience of college brings even more uncertainty than was present at the beginning of high school. Perhaps the college student is more aware that the end of the sheltered life previously enjoyed is near. The college student, if living in a dorm, is already encountering some of the experiences of living independently, and having to accept the responsibility for his or her actions. One must take responsibility for going to class on time, and doing one's assignments. Mother is no longer around to wake up the oversleeping student. Perhaps college brings the student, in addition to a new sense of freedom, a frightening area of responsibility.

DGLQ2. This variable was derived from the second significant canonical from the MANOVA for the Main Grid Indices and V1 to V12, for the effect of grade level on Ego. This variable correlated positively with V2. The high school freshmen scored lowest, followed by the college students, and finally the high school juniors. Because none of the loadings were very high, and because the loadings for this factor in Cattell's work (Cattell, Eber, & Tatsuoka, 1970) were also low, it would not be appropriate to base any discussion on this variable. The results of this

study agree with Cattell's finding that by itself, this scale has limited utility.

EGQOR. This variable was derived from the MANOVA for the Main Grid Indices and V1 to V12, for the effect of identity status on Egor. The variable correlated negatively with SSXID and V3. The identity diffusion subjects scored highest, followed by the achievement, moratorium, and finally the foreclosure subjects.

This variable is measuring a relationship between the perceived similarity between the ideal self and same sex parent, and emotional maturity. Through this viewpoint, the emotionally mature person is one who perceives similarity between the ideal self and the same sex parent. Furthermore, the identity diffusion subjects show the greatest amount of negative correlation. This is followed by the achievement, moratorium, foreclosure subjects. That is, the identity diffusion subject is the lowest in emotional maturity, and perceives the ideal self to be unlike the same sex parent. This would be expected. One would expect the person in identity diffusion to be easily frustrated and changeable in attitudes and interests because of the confused state of identity. The foreclosure subject, having never questioned, or searched among alternatives, would be expected to be more calm and stable. The effects of the same sex parent and ideal self have been previously discussed (see p. 122).

The achievement subjects scored lower than the moratorium subjects on EGQOR. This indicates that in terms of religious ideology, the achievement subjects demonstrated a lower level of emotional maturity, and perceived themselves as being more unlike the same sex parents than the moratorium subjects did. The lower SSXID would be expected of the identity achieved subject, who has gone through a crisis and come to a commitment. Perhaps it is because the identity achieved individual has come to terms with an ideological identity, that this person is more prone to be frustrated when faced with evidence which is contrary to the person's convictions. Emotional maturity for the identity achieved person would be measured as compared to the individual's own perception of the self, rather than that of the same sex parent.

The emotional maturity of the moratorium status person may be explained by the presence of a crisis. That is, the person in a moratorium may be prone to incorporate ideas which are discrepant with previously formulated concepts. Therefore, a more mature emotional stability may be seen in a moratorium individual than that demonstrated by the identity achieved person, who is convinced of the values which have become part of the ideological construct system.

SXQOR. This variable was derived from the MANOVA for the Main Grid Indices and V1 to V12, for the effect of sex

on Egor. The variable correlated positively with V7, V1, and V2. The female subjects scored higher than the male subjects. These variables are the same as those which were evident for the derived variable DSXQ, so the description would be the same. There is little reason to expect that the component part for religion will yield any insights other than those found for the global identity status.

GLQOR. This variable was derived from the MANOVA for the Main Grid Indices and V1 to V12, for the effect of grade level on Egor. This variable correlated positively with V5, and negatively with V6 and V9. The high school juniors scored lowest, followed by the high school freshmen, and finally the college students. This variable is describing a person who is enthusiastic, and who disregards rules and is self assured. This person seems to be, "Acting out," the dissatisfaction which accompanies the identity crisis by disregarding rules, and showing insensitivity to others. At the same time, the person high on GLQOR is trying to disguise the effects of the identity crisis with an enthusiastic, talkative attitude. The person high on GLQOR is similar to the person high on DGLQ, who is less prone to feel guilty. Both are hiding their true feelings. The high DGLQ person is more reserved. The difference among the grade levels is similar, possibly for the same reasons. It appears though, that where religion is concerned, one tries

to show more enthusiasm. Perhaps establishing a religious identity alleviates the guilt feelings which may accompany the doubting which occurs during the identity crisis. Possibly, the college students are becoming more self assured (i.e., aware of identity). Therefore, the impulse to disregard rules is met with feelings of guilt, which are covered up with an enthusiastic attitude.

GLQOR2. This variable was derived from the MANOVA for the Main Grid Indices and V1 to V12 for the effect of grade level on Egor. The variable correlated negatively with V4. The college students scored highest, followed by the high school juniors, and finally the high school freshmen. This variable is describing a person who is dominant, assertive, and independent as opposed to being submissive. There is a developmental movement from rebelliousness to submissiveness. This may be taken as an indication that adolescence ends with the development of a personality which can be described as being easygoing, trustful, and reflective. It is as if the development of an ideology gives one the feeling that one can trust the environment. The older adolescent develops a system of values which helps one to view the world as a safe place to be.

CHAPTER VI

SUMMARY

The purpose of this study was to combine the theory and methodology of personal construct theory with the theory of Eriksonian psychoanalytic psychology in order to study the influence of development on self definition and ego identity during adolescence. Overall, the results indicated that to some degree, the Repertory Grid is a useful measure for this purpose.

Subjects were high school (n = 77) and college (n = 38) students who were administered Marcia's (1968) identity status interview, the High School Personality Questionnaire, or Sixteen Personality Factor Questionnaire, and a specially constructed Repertory Grid. The subjects were classified into the appropriate identity status category (Achievement, Moratorium, Foreclosure, Diffusion) according to the criteria set forth in Marcia's manual. The responses to the "Repgrid" were systematically analyzed using a principal components factor analysis. Further manipulations of the factor scores and correlation matrices resulted in the Main Grid Indices, which were used to assess cognitive intensity, consistency, perceived similarity between the self and ideal self, perceived similarity between

the self and the self as perceived by others, perceived similarity between the ideal self and the same sex parent, and the extremities of the self, ideal self, and the self as perceived by others. The scores from the scales used on the HSPQ and 16PF were converted to sten scores, and were used to analyze the difference among the personalities of the subjects. Also, the first ten constructs on the "Rep-grid", which were taken from the Bieri (1955) measure, were used in defining the constellatoriness of the constructs in the subject's system.

Multivariate analyses of variance were used to determine the relationships among the Main Grid Indices, personality variables, and constellatoriness. The results showed that of the Main Grid Indices, the congruency between the self and the self as perceived by others, the congruency between the ideal self and the same sex parent, and intensity were the most useful in discriminating among the independent variables sex, grade level, and identity status. Identity status was also divided into its three component parts: occupation, religion, and politics, and a multivariate analysis similar to the one performed for the global ego identity status was done for each component.

Overall, the results indicated a significant difference between the sexes for the Main Grid Indices, a sex and grade level difference for the Main Grid Indices and

personality variables, and a sex difference and a three way interaction for constellatoriness, on the global measure of identity status. For the identity component of religion, there was a difference among the identity statuses, a sex difference, and a grade level by identity status interaction for the Main Grid Indices. For the Main Grid Indices and the personality variables, there was a difference among the identity statuses, between the sexes, and among the grade levels. Because the component for religion was the only one which yielded a significant difference among the identity statuses, it was decided that the components for occupation and politics need not be included in the discussion, because they would not add any novel insights into identity status. Also, because there was no significant difference among the identity statuses on constellatoriness, it was decided that it need not be included in the discussion, for the same reason. Other congruencies were also obtained but not discussed because of their limited utility in looking at identity status.

For each multivariate effect, a canonical correlation and discriminant analysis were performed. Where there was a multivariate significance, a variable was defined, using a linear combination of the raw discriminant function coefficient times the original variable. This variable was then correlated with the original variables and a clinical

interpretation of the meaning of the variables thus derived was made.

Weaknesses of This Study. The major drawback of this study is in the nature of the subject selection. Subjects were taken from private, non co-ed high schools with a religious orientation, and a private university with a religious orientation. Also, the subjects were requested to volunteer, rather than being selected randomly. This could account for the lack of significance among the identity statuses when taken globally, as well as the significance which was found for the religious component. If the subjects had a stronger political orientation, or had been selected from a working class public school, the results may have been different. Also, it is difficult to draw longitudinal conclusions, such as age differences, from a cross sectional study. However, perhaps the fact that significant differences were found among the identity statuses on the religious component means that the three components (occupation, religion, and politics) are distinct aspects of personality development which are affected by different aspects of one's environment. Perhaps as the individual becomes more involved with voting for political issues, and comes closer to the age at which an occupation must be selected, the other segments of identity status will become more influential. It is possible that the three aspects of identity status

develop independently, at different rates for different individuals.

Strengths of the Study. This study's strength lies in the method which was used. One goal of science (Holt, 1973) is to understand behavior. According to Kerlinger and Pedhazur (1973), multivariate methods are maximally useful for understanding behavior, as opposed to strict prediction and control. This study has helped to understand what Erikson has described as the adaptive side of behavior (Roazen, 1976). It has provided an explanation of behavior, from a developmental point of view, using the theories and methods of cognitive psychology and psychoanalysis. That is, personality development during adolescence was explored through the framework of Erikson's psychoanalytic viewpoint. It was explained with the help of Kelly's personal construct theory, and the methodology which was developed out of it. This adds to the general knowledge of personality development through the combination of two theories which could have otherwise remained distinct. It has explained ego development with the help of a perceptual interpretation.

Suggestions for Future Research. Thus far, identity status has been studied using college students or college oriented high school students as subjects. It would increase the external validity of knowledge related to identity status if subjects who were not college oriented were included in

future investigations. Working class and lower class persons might respond differently to the identity status interview. Future researchers might be making a significant contribution by exploring the effect of social class differences on identity status.

Self perception might also change with a social class and ethnic difference. Perhaps differences in socialization would cause one to perceive oneself differently with respect to others than was the case in this study. If so, then perception of the environment and the self could change with geographical, social, or cultural differences. It would be beneficial to explore the perceptual differences among different cultural groups. Immigrants could be helped more adequately if their perceptions of the environment were better understood. The "Repgrid" could be used to explore the responses of immigrants and foreign students. Programs could then be established to help them to understand the differences between the cultures, and to integrate their perceptions into a new construct system which would enable them to adjust to their new situation.

Implications for Education. Just as multivariate methods are useful for exploring and understanding behavior, so is this study useful for exploring and understanding adolescent development. In order to be able to work effectively with people, it is necessary to understand the characteristic

descriptions and changes which take place during each stage of development. Teachers, counselors, school psychologists, and anyone who works with people at any age level would benefit from knowing what is happening to the people with whom they are working. Adolescence is a stage marked by exaggerated biological, social, and cognitive change.

An understanding of how the adolescent reacts to others in the environment would aid the professional in helping the adolescent cope with these reactions. If an individual were in a stage of psychosocial moratorium, one would do well to allow room to experiment with behavior. If the adolescent were in a state of identity diffusion, it would be helpful to provide more guidance and suggestions for the adolescent to find himself or herself. If one were working with an adolescent in a state of identity achievement, support would be all that one would need give. In the case of foreclosure, some suggestions for alternative choices may be made.

Knowledge of the individual's perceptions of the environment could also be useful in helping the adolescent. If the adolescent perceives the world as being a threatening place, it would be necessary to aid that person in establishing a greater level of trust. It would not be helpful to confront that person with situations which would pose

a threat to the construct system. Therefore, knowing how the person perceives the world would help the professional know how to react to the individual.

REFERENCE NOTE 1

In addition to the Main Grid Indices, several other variables were tested for significance using MANOVAs. Because the multivariate tests did not reveal any significant findings for identity status, it was felt that a discussion of these variables would not add any new insights into the study, therefore, they were eliminated from the discussion. These variables include: EXTMO (extremity, or definition of the mother element), EXTFA (extremity, or definition of the father element), OSXID (congruency between the ideal self and the opposite sex parent), SSXSF (congruency between the self and the same sex parent), OSXSF (congruency between the self and the opposite sex parent), TWOF (the sum of the first two eigenvalues), UNIDIM (the first eigenvalue divided by the second eigenvalue). In addition to these, the variable constellatoriness, and the congruencies between the self and each role title, and between the ideal self and each role title were eliminated in order to eliminate the possibility of unnecessary redundancies.

REFERENCE NOTE 2

In the analysis and discussion, the following abbreviations were used: Ach = Identity Achievement, Mor = Moratorium, For = Foreclosure, Dif = Diffusion, GLV = Grade Level, Ego = global ego identity status, Egor = Identity status component for religion, HSFR = High school freshman, HSJR = High school junior, COLL = College student. An examination of the cell means (see MANOVA Table A, in Appendix A) shows that for ego identity status, the means for the variable SF2 were .77 (Ach), .74 (Mor), .78 (For), and .72 (Dif). For the variable SF3, the means were .74 (Ach), .69 (Mor), .77 (For), and .83 (Dif). For the variable SSXID, the means were .65 (Ach), .59 (Mor), .71 (For), and .59 (Dif). For the variable INT, the means were 37.63 (Ach), 36.47 (Mor), 40.11 (For), and 35.35 (Dif). For the variable CST, the means were 1.0 (Ach), .99 (Mor), .99 (For), and 1.0 (Dif). For the variable EXTSF, the means were .95 (Ach), .97 (Mor), .90 (For), and 1.02 (Dif). For the variable EXTID, the means were 1.41 (Ach), 1.31 (Mor), 1.43 (For), and 1.27 (Dif). For the variable EXTOT, the means were .94 (Ach), 1.14 (Mor), .86 (For), and .96 (Dif). The differences in each case were not great enough to distinguish between the means (MANOVA $F = 1.1082$, d.f. effect = 24, d.f. error = 244.23, $p < .335$).

One can see from the cell means that for sex, the significant variables were SF3, with means .68 (male) and .81 (female) ($F = 4.7187$, $p < .05$), and INT with means 32.44 (male), and 41.01 (female) ($F = 5.4124$, $p < .05$). For the following variables, the differences were not great enough to distinguish between the means: SF2, with means .74 (male) and .76 (female), CST, with means .99 (male) and 1.0 (female), EXTSF, with means 1.06 (male) and .89 (female), EXTID, with means 1.29 (male) and 1.39 (female), and EXTOT, with means 1.10 (male) and .91 (female) (MANOVA $F = 2.9117$, d.f. effect = 8, d.f. error = 84, $p < .0065$).

An examination of the cell means shows that for grade level, the means for the variable SF2 were .73 (HSFR and HSJR) and .80 (COLL). For the variable SF3, the means were .71 (HSFR and HSJR) and .83 (COLL). For the variable SSXID, the means were .69 (HSFR), .53 (HSJR) and .65 (COLL). For the variable INT, the means were 34.07 (HSFR), 34.33 (HSJR) and 43.54 (COLL). For the variable CST, the means were .99 (HSJR) and 1.0 (HSFR and COLL). For the variable EXTSF, the means were 1.07 (HSFR), .98 (HSJR) and .82 (COLL). For the variable EXTID, the means were 1.23 (HSFR), 1.44 (HSJR) and 1.39 (COLL). For the variable EXTOT, the means were 1.12 (HSFR), 1.08 (HSJR) and .78 (COLL). The differences in each case were not great enough to distinguish between the means (MANOVA $F = 1.6324$, d.f. effect = 16,

d.f. error = 168, $p < .0653$).

For the interaction of the effects Sex X Ego, one can see that for the variable SF2, the means for the male subjects were .78 (Ach), .71 (Mor), .75 (For), and .73 (Dif). The means for the female subjects were .76 (Ach and Mor), .82 (For), and .73 (Dif). For the variable SF3, the means for the male subjects were .67 (Ach), .55 (Mor), .71 (For), and .88 (Dif). For the female subjects the means were .79 (Ach), .80 (Mor and Dif), and .85 (For). For the variable SSXID, the means for the male subjects were .62 (Ach), .42 (Mor), .67 (For), and .58 (Dif). For the female subjects the means were .67 (Ach), .73 (Mor), .77 (For), and .60 (Dif). For the variable INT, the means for the male subjects were 39.07 (Ach), 29.23 (Mor), 35.62 (For) and 27.48 (Dif). For the female subjects, the means were 36.77 (Ach), 42.06 (Mor), 45.35 (For) and 40.27 (Dif). For the variable CST, the means for the male subjects were 1.0 (Ach and Dif), and .99 (Mor and For). For the female subjects, the means were 1.0 (Ach, Mor, For and Dif). For the variable EXTSF, the means for the male subjects were 1.24 (Ach), 1.04 (Mor), 1.00 (For) and 1.01 (Dif). For the female subjects, the means were .77 (Ach), .91 (Mor), .79 (For) and 1.03 (Dif). For the variable EXTID, the means for the male subjects were 1.22 (Ach), 1.25 (Mor), 1.49 (For), and 1.13 (Dif). For the female subjects, the means were 1.53 (Ach), 1.35

(Mor and Dif), and 1.36 (For). For the variable EXTOT, the means for the male subjects were 1.01 (Ach), 1.30 (Mor), .90 (For), and 1.12 (Dif). For the female subjects the means were .89 (Ach), 1.02 (Mor), .81 (For) and .87 (Dif). The differences in these cases were not great enough to distinguish between the means (MANOVA F = 1.0850, d.f. effect = 24, d.f. error = 244.2268, $p < .3615$.

For the interaction of the effects of Glv and Ego, univariate significance was found for the variables CST ($F = 2.2401$, $p. < 05$), for which the means were, for HSFR, 1.0 (Ach and Dif), and .99 (Mor and For), for HSJR, .99 (Ach), and 1.0 (Mor, For, and Dif), and for COLL, .99 (Mor), and 1.0 (Ach, For, and Dif). A univariate significance was also found for the variable EXTSF ($F = 2.2509$, $p < .05$), for which the means were for HSFR, 1.03 (Ach), .87 (Mor), 1.04 (For), and 1.35 (Dif). For HSJR, the means were 1.11 (Ach), 1.18 (Mor), .73 (For), and .70 (Dif). For COLL, the means were .83 (Ach), .72 (Mor), .83 (For), and .86 (Dif). For the remainder of the variables, the differences were not great enough to distinguish between the means (MANOVA F = 1.2293, d.f. effect = 48, d.f. error = 417.3775, $p < .1493$). For the variable SF2, for HSFR, the means were .72 (Ach), .71 (Mor), .74 (For), and .75 (Dif). For HSJR, the means were .77 (Ach), .70 (Mor), .77 (For) and .73 (Dif). For COLL, the means were .80 (Ach), .85 (Mor), .83 (For) and

.66 (Dif). For the variable SF3, for HSFR, the means were .71 (Ach), .58 (Mor), .69 (For) and .88 (Dif). For HSJR, the means were .73 (Ach), .66 (Mor), .72 (For), and .82 (Dif). For COLL, the means were .77 (Ach), .92 (Mor), .89 (For), and .75 (Dif). For the variable SSXID, for HSFR, the means were .75 (Ach), .63 (Mor), .65 (For) and .77 (Dif). For HSJR, the means were .71 (Ach), .47 (Mor), .60 (For), and .53 (Dif). For COLL, the means were .57 (Ach), .78 (Mor), .85 (For) and .37 (Dif). For the variable INT, for HSFR, the means were 35.78 (Ach), 29.89 (Mor), 35.26 (For) and 36.69 (Dif). For HSJR, the means were 36.39 (Ach), 36.94 (Mor), 28.31 (For) and 32.28 (Dif). For COLL, the means were 39.28 (Ach), 45.06 (Mor), 52.03 (For) and 36.76 (Dif). For the variable EXTID, for HSFR, the means were 1.55 (Ach), 1.22 (Mor), 1.37 (For) and 1.40 (Dif). For HSJR, the means were 1.64 (Ach), 1.55 (Mor and For), and 1.01 (Dif). For COLL, the means were 1.49 (Ach), 1.26 (Mor and For), and 1.64 (Dif). For the variable EXTOT, for HSFR, the means were 1.03 (Ach), 1.25 (Mor), .97 (For) and 1.15 (Dif). For HSJR, the means were 1.06 (Ach), 1.27 (Mor), .90 (For) and .84 (Dif). For the variable EXTOT, for HSFR, the means were 1.03 (Ach), 1.25 (Mor), .97 (For) and 1.15 (Dif). For HSJR the means were 1.06 (Ach), 1.27 (Mor), .90 (For) and .84 (Dif). For COLL, the means were .83 (Ach), .74 (Mor), .73 (For) and .81 (Dif).

For the interaction of the effects of Glv and Sex, univariate significance was found for the variable SF3 ($F = 3.4687$, $p < .05$), for which the male subjects had a mean of .58 (HSFR), .66 (HSJR) and .89 (COLL), and the mean for the female subjects were .83 (HSFR), .78 (HSJR) and .81 (COLL). For the remainder of the variables, the differences were not great enough to distinguish between the means (MANOVA $F = 1.3871$, d.f. effect = 16, d.f. error = 168, $p < .1533$). For the variable SF2, for the male subjects, the means were .67 (HSFR), .77 (HSJR), and .81 (COLL). for the female subjects the means were .78 (HSFR), .68 (HSJR) and .79 (COLL). For the variable SSXID, the means for the male subjects were .57 (HSFR), .46 (HSJR) and .67 (COLL). For the female subjects the means were .80 (HSFR), .61 (HSJR) and .65 (COLL). For the variable INT the means for the male subjects were 26.22 (HSFR), 29.95 (HSJR) and 46.53 (COLL). For the female subjects the means were 41.21 (HSFR), 38.97 (HSJR) and 42.16 (COLL). For the variable CST, the means for the male subjects were .99 (HSFR and HSJR) and 1.00 (COLL). For the female subjects the means were 1.00 (HSFR, HSJR and COLL). For the variable EXTSF, the means for the male subjects were 1.10 (HSFR), 1.09 (HSJR) and .94 (COLL). For the female subjects the means were 1.04 (HSFR), .87 (HSJR) and .77 (COLL). For the variable EXTID the means for the male subjects were 1.08 (HSFR),

1.48 (HSJR) and 1.33 (COLL). For the female subjects the means were 1.37 (HSFR), 1.40 (HSJR) and 1.41 (COLL). For the variable EXTOT the means for the male subjects were 1.20 (HSFR), 1.17 (HSJR), .99 (COLL). For the female subjects the means were 1.04 (HSFR), .99 (HSJR) and .76 (COLL).

For the three way interaction of the effects Glv, Sex, and Ego, a univariate significance was found for the variable CST ($F = 3.0167$, $p. < 01$). For the male subjects, the means for HSFR were 1.0 (Ach) and Dif), and .99 (Mor and For). For HSJR, the means were .99 (Ach and Mor) and 1.0 (For and Dif). For COLL, the means were .99 (Ach) and 1.0 (Mor, For and Dif). For the female subjects, age means for HSFR were .99 (Ach) and 1.0 (Mor, For and Dif). For HSJR the means were 1.0 (Mor) and .99 (Ach, For and Dif). For COLL, the means were .99 (Mor) and 1.0 (Ach, For and Dif). For the remainder of the variable, the difference is not great enough to distinguish between the means (MANOVA $F = 1.3803$, d.f. effect = 48, d.f. error = 417.3775, $p < .0533$). For the variable SF2, for the male subjects, the means for HSFR were .65 (Ach), .68 (Mor), .61 (For) and .74 (Dif). For HSJR, the means were .85 (Ach), .68 (Mor), .85 (For) and .86 (Dif). For COLL, the means were .91 (Ach), .96 (Mor), .81 (For) and .53 (Dif). For the female subjects the means for HSFR were .79 (Ach), .74 (Mor), .88 (For) and .75 (Dif). For HSJR the means were .68 (Ach), .72 (Mor),

.61 (For) and .66 (Dif). For COLL the means were .77 (Ach), .82 (Mor), .86 (For) and .71 (Dif). For the variable SF3, for the male subjects the means for HSFR were .57 (Ach), .42 (Mor), .47 (For) and .88 (Dif). For HSJR, the means were .52 (Ach), .54 (Mor), .77 (For) and .93 (Dif). For COLL, the means were .90 (Ach), .95 (Mor), .89 (For) and .79 (Dif). For the female subjects, for HSFR, the means were .85 (Ach), .73 (Mor), .90 (For) and .89 (Dif). For the female subjects, for HSFR the means were .85 (Ach), .73 (Mor), .90 (For) and .89 (Dif). For HSJR the means were .94 (Ach), .78 (Mor), .63 (For) and .76 (Dif). For COLL the means were .73 (Ach), .91 (Mor), .89 (For) and .73 (Dif). For the variable SSXID, for the male subjects for HSFR the means were .65 (Ach), .51 (Mor and For) and .66 (Dif). For HSJR the means were .68 (Ach), .26 (Mor), .61 (For) and .71 (Dif). For COLL the means were .56 (Ach), .85 (Mor), .86 (For) and .18 (Dif). For the female subjects, for HSFR the means were .85 (Ach), .73 (Mor), .79 (For) and .87 (Dif). For HSJR the means were .73 (Ach), .71 (Mor), .60 (For) and .42 (Dif). For COLL the means were .57 (Ach), .76 (Mor), .83 (For) and .44 (Dif). For the variable INT, for the male subjects, for HSFR the means were 39.75 (Ach), 18.70 (Mor), 21.59 (For) and 29.04 (Dif). For HSJR the means were 17.53 (Ach), 36.33 (Mor), 29.45 (For and 19.78 (Dif). The means for COLL were 52.52 (Ach), 28.86 (Mor), 54.57

(For) and 35.13 (Dif). For the female subjects the means for HSFR were 31.80 (Ach), 39.48 (Mor), 48.94 (For) and 43.07 (Dif). The means for HSJR were 55.25 (Ach), 37.63 (Mor), 26.03 (For) and 39.78 (Dif). The means for COLL were 34.87 (Ach), 49.70 (Mor), 49.50 (For) and 37.41 (Dif). For the variable EXTSF, for the male subjects, for HSFR the means were 1.34 (Ach), .91 (Mor), 1.24 (For) and .99 (Dif). For HSJR the means were 1.49 (Ach), 1.16 (Mor), .84 (For) and .98 (Dif). The means for COLL were .93 (Ach), .90 (Mor and For) and 1.09 (Dif). For the female subjects, the means for HSFR were .72 (Ach), .83 (Mor), .85 (For) and 1.65 (Dif). The means for HSJR were .73 (Ach), 1.20 (Mor), .50 (For) and .53 (Dif). The means for COLL were .80 (Ach), .67 (Mor), .84 (For) and .77 (Dif). For the variable EXTID, the means for HSFR were 1.05 (Ach), .89 (Mor), 1.59 (For) and .84 (Dif). The means for HSJR were 1.36 (Ach), 1.48 (Mor), 1.59 (For) and 1.44 (Dif). The means for COLL were 1.34 (Ach), 1.28 (Mor), 1.32 (For) and 1.41 (Dif). For the female subjects, the means for HSFR were 1.55 (Ach), 1.22 (Mor), 1.37 (For) and 1.40 (Dif). The means for HSJR were 1.64 (Ach), 1.55 (Mor and For) and 1.0 (Dif). The means for COLL were 1.49 (Ach), 1.26 (Mor and For) and 1.64 (Dif). For the variable EXTOT, for the male subjects the means for HSFR were 1.19 (Ach), 1.38 (Mor), 1.08 (For) and 1.11 (Dif). The means for HSJR were 1.20 (Ach), 1.35 (Mor), .85 (For) and

1.07 (Dif). The means for COLL were .64 (Ach), .90 (Mor), .74 (For) and 1.21 (Dif). For the female subjects, the means for HSFR were .87 (Ach), 1.14 (Mor), .85 (For) and 1.18 (Dif). The means for HSJR were .92 (Ach), 1.19 (Mor), .99 (For) and .70 (Dif). The means for COLL were .90 (Ach), .70 (Mor), .71 (For) and .65 (Dif).

REFERENCE NOTE 3

An examination of the cell means (see MANOVA Table B, in Appendix A) shows that for ego identity status, the cell means for variable V1 were 5.83 (Ach), 5.92 (Mor), 5.85 (For) and 5.62 (Dif). The means for variable V2 were 5.67 (Ach), 6.08 (Mor), 5.62 (For) and 5.92 (Dif). The means for variable V3 were 6.67 (Ach), 6.26 (Mor), 6.92 (For) and 5.85 (Dif). The means for variable V4 were 6.88 (Ach), 6.69 (Mor), 6.81 (For) and 5.96 (Dif). The means for variable V5 were 6.21 (Ach), 6.05 (Mor) and 5.96 (For and Dif). The means for variable V6 were 5.38 (Ach), 5.03 (Mor), 5.81 (For) and 5.31 (Dif). The means for variable V7 were 6.46 (Ach), 5.74 (Mor), 6.42 (For) and 5.31 (Dif). The means for variable V8 were 5.79 (Ach), 5.62 (Mor), 4.96 (For) and 5.15 (Dif). The means for variable V9 were 6.00 (Ach), 4.92 (Mor), 5.54 (For) and 5.19 (Dif). The means for variable V10 were 5.88 (Ach), 5.69 (Mor), 5.46 (For) and 5.50 (Dif). The means for variable V11 were 5.88 (Ach), 5.26 (Mor), 6.42 (For) and 5.08 (Dif). The means for variable V12 were 5.83 (Ach), 5.15 (Mor), 5.31 (For) and 5.12 (Dif). The differences in each case were not great enough to distinguish between the means (MANOVA $F = 0.9745$, d.f. effect = 60, d.f. error = 215.6431, $p < .5341$).

For the main effect of sex, the significant variables were V1 ($F = 11.3311$, $p < .01$), V2 ($F = 8.9113$, $p < .01$) and

V7 ($F = 13.1606$, $p < .001$). An examination of the cell means shows that for V1, the means were 5.06 (male) and 6.40 (female). For variable V2, the means were 5.32 (male) and 6.26 (female), and for variable V3, the means were 5.18 (male) and 6.54 (female). The univariate analysis showed no other significant differences. The cell means for variable V3 were 6.68 (male) and 6.72 (female). The cell means for variable V4 were 6.42 (male) and 6.72 (female). The means for variable V5 were 5.72 (male) and 6.29 (female). For variable V6 the means were 5.46 (male) and 5.25 (female). For variable V8 the means were 5.54 (male) and 5.26 (female). For variable V9 the means were 5.46 (male) and 5.52 (female). For variable V10 the means were 5.78 (male) and 5.52 (female). For variable V11 the means were 5.86 (male) and 5.42 (female), and for variable V12 the means were 5.12 (male) and 5.48 (female). The differences between the means were not great enough to distinguish between them (MANOVA $F = 3.6785$, d.f. effect = 20, d.f. error = 72, $p < .0001$).

For the main effect of grade level (MANOV $F = 3.1043$, d.f. effect = 40, d.f. error = 144, $p < .0001$), the univariate analysis showed the following variables to be significant: V1 ($F = 5.2790$, $p < .01$) with the means 5.57 (HSFR), 5.17 (HSJR) and 6.68 (COLL), variable V2 ($F = 7.1482$, $p < .01$) with cell means 5.26 (HSFR), 6.77 (HSJR) and 5.66 (COLL), variable V4 ($F = 6.1961$, $p < .01$) with cell

means 7.24 (HSFR), 6.60 HSJR) and 5.87 (COLL), variable V5 ($F = 4.3623$, p .05) with cell means 5.86 (HSFR), 6.74 (HSJR) and 5.61 (COLL), variable V6 ($F = 9.2672$, $p < .001$) with cell means 5.86 (HSFR), 4.20 (HSJR) and 5.82 (COLL), variable V9 ($F = 7.6616$, $p < .001$) with cell means 5.17 (HSFR), 5.34 (HSJR) and 5.47 (CCLL). One can see that for the remainder of the variables, the difference was not great enough to distinguish between the means. For variable V3 the cell means were 6.90 (HSFR), 5.97 (HSJR) and 6.24 (COLL). For variable V7 the means were 5.95 (HSFR), 5.54 (HSJR) and 6.32 (COLL). For variable V8 the means were 5.43 (HSFR), 5.20 (HSJR) and 5.55 (COLL). For variable V10 the means were 5.88 (HSFR), 5.89 (HSJR) and 5.13 (COLL). For variable V11 the means were 6.05 (HSFR), 5.06 (HSJR) and 5.63 (COLL). For variable V12 the means were 5.17 (HSFR), 5.34 (SHJR) and 5.47 (COLL).

For the interaction of the effects of Sex and Ego, one can see that neither the multivariate test (MANOVA $F = 1.1532$, d.f. effect = 60, d.f. error = 215.6431, $p < .2305$) nor any of the univariate tests were significant. For variable V1 the cell means for the male subjects were 4.89 (Ach), 5.06 (Mor), 5.71 (For) and 4.30 (Dif). For the female subjects the cell means were 6.40 (Ach), 6.59 (Mor), 6.00 (For) and 6.44 (Dif). For variable V2 the cell means for the male subjects were 5.33 (Ach), 5.53 (Mor), 4.93 (For)

and 5.50 (Dif). For the female subjects the cell means were 5.87 (Ach), 6.50 (Mor), 6.42 (For) and 6.19 (Dif). For variable V3 the cell means for the male subjects were 7.67 (Ach), 6.29 (Mor), 6.64 (For) and 6.50 (Dif). For the female subjects the cell means were 6.07 (Ach), 6.23 (Mor), 7.25 (For) and 5.44 (Dif). For variable V4 the cell means for the male subjects were 7.44 (Ach), 5.94 (Mor), 6.79 (For) and 5.80 (Dif). For the female subjects the cell means were 6.53 (Ach), 7.27 (Mor), 6.83 (For) and 6.06 (Dif). For variable V5 the cell means for the male subjects were 7.11 (Ach), 5.41 (Mor), 5.21 (For) and 5.70 (Dif). The means for the female subjects were 5.67 (Ach), 6.55 (Mor), 6.83 (For) and 6.13 (Dif). For variable V6 the cell means for the male subjects were 4.89 (Ach), 5.06 (Mor), 5.71 (For) and 6.30 (Dif). The cell means for the female subjects were 5.67 (Ach), 5.00 (Mor), 5.92 (For) and 4.69 (Dif). For variable V7 the cell means for the male subjects were 6.00 (Ach), 4.47 (Mor), 5.79 (For) and 4.80 (Dif). For the female subjects the cell means were 6.73 (Ach), 6.73 (Mor), 7.17 (For) and 5.63 (Dif). For variable V8 the cell means for the male subjects were 5.11 (Ach), 6.18 (Mor), 5.50 (For) and 4.90 (Dif). For the female subjects the cell means were 6.20 (Ach), 5.18 (Mor), 4.33 (For) and 5.31 (Dif). For variable V9 the cell means for the male subjects were 6.00 (Ach), 5.29 (Mor), 5.43 (For) and 5.30 (Dif). For the female

subjects the cell means were 6.00 (Ach), 4.64 (Mor), 5.67 (For) and 5.13 (Dif). For variable V10 the cell means for the male subjects were 5.78 (Ach), 6.41 (Mor), 5.43 (For) and 5.20 (Dif). For the female subjects the cell means were 5.93 (Ach), 5.14 (Mor), 5.50 (For) and 5.69 (Dif). For variable V11 the cell means for the male subjects were 5.89 (Ach), 5.53 (Mor), 6.43 (For) and 5.60 (Dif). For the female subjects the cell means were 5.87 (Ach), 5.05 (Mor), 6.42 (For) and 4.75 (Dif), and for the variable V12 the cell means were, for the male subjects, 5.89 (Ach), 4.59 (Mor), 5.00 (For) and 5.50 (Dif). For the female subjects the cell means were 5.80 (Ach), 5.59 (Mor), 5.67 (For) and 4.88 (Dif).

For the interaction of the effects of Ego and grade level, neither the multivariate test (MANOVA F = 1.2165, d.f. effect = 120, d.f. error = 432.5794, $p < .0823$) nor any of the univariate tests for the variable V1 to V12 were significant. One can see from an examination of the cell means that the means were not significantly distinguishable. For variable V1 the cell means for HSFR were 5.13 (Ach), 6.38 (Mor), 4.90 (For) and 5.55 (Dif). For HSJR the cell means were 5.75 (Ach), 5.47 (Mor), 4.83 (For) and 4.50 (Dif). For COLL the cell means were 6.33 (Ach), 6.11 (Mor), 7.40 (For) and 7.00 (Dif). For variable V2 the cell means for HSFR were 4.75 (Ach), 5.00 (Mor), 5.90 (For) and 5.36 (Dif). For

HSJR the cell means were 5.50 (Ach), 7.12 (Mor), 5.83 (For) and 7.38 (Dif). For COLL the cell means were 6.33 (Ach), 5.67 (Mor), 5.20 (For) and 5.14 (Dif). For variable V3 the cell means for HSFR were 6.88 (Ach), 6.54 (Mor), 7.70 (For) and 6.64 (Dif). For HSJR the cell means were 6.25 (Ach), 5.94 (Mor), 6.67 (For) and 5.38 (Dif). For COLL the cell means were 6.67 (Ach), 6.44 (Mor), 6.30 (For) and 5.14 (Dif). For variable V4 the cell means for HSFR were 7.75 (Ach), 7.29 (Mor), 8.00 (For) and 6.17 (Dif). For HSJR the cell means were 5.50 (Ach), 7.75 (Mor), 7.00 (For) and 7.00 (Dif). For COLL the means were 6.22 (Ach), 6.71 (Mor), 5.60 (For) and 5.00 (Dif). For variable V5 the cell means were 7.50 (Ach), 5.23 (Mor), 6.00 (For) and 5.27 (Dif). For HSJR the cell means were 7.00 (Ach), 6.47 (Mor), 6.50 (For) and 7.38 (Dif). For COLL the cell means were 5.08 (Ach), 6.44 (Mor), 5.60 (For) and 5.43 (Dif). For variable V6 the cell means for HSFR were 4.75 (Ach), 5.92 (Mor), 6.20 (For) and 6.27 (Dif). For HSJR the cell means were 4.00 (Ach), 4.47 (Mor), 4.50 (For) and 3.50 (Dif). For COLL the cell means were 6.25 (Ach), 4.78 (Mor), 6.20 (For) and 5.86 (Dif). For variable V7 the cell means were, for HSFR, 6.38 (Ach), 5.46 (Mor), 6.80 (For) and 5.45 (Dif). For HSJR the means were 5.75 (Ach), 5.12 (Mor), 6.33 (For) and 5.75 (Dif). For COLL the cell means were 6.75 (Ach), 7.33 (Mor), 6.10 (For) and 4.57 (Dif). For variable V8 the cell means for HSFR were

5.63 (Ach), 5.38 (Mor), 4.80 (For) and 5.91 (Dif). For HSJR the cell means were 4.50 (Ach), 5.35 (Mor), 5.50 (For) and 5.00 (Dif). For COLL the cell means were 6.33 (Ach), 6.44 (Mor), 4.80 (For) and 4.14 (Dif). For variable V9 the cell means for HSFR were 5.25 (Ach), 5.31 (Mor), 4.70 (For) and 5.27 (Dif). The cell means for HSJR were 4.75 (Ach), 4.35 (Mor), 4.17 (For) and 4.75 (Dif). The cell means for COLL were 6.92 (Ach), 5.44 (Mor), 7.20 (For) and 5.57 (Dif). For variable V10 the cell means for HSFR were 6.38 (Ach), 5.77 (Mor), 6.30 (For) and 5.27 (Dif). For HSJR the cell means were 4.75 (Ach), 6.06 (Mor), 6.00 (For) and 6.00 (Dif). For COLL the means were 5.92 (Ach), 4.89 (Mor), 4.30 (For) and 5.29 (Dif). For variable V11 the cell means for HSFR were 5.88 (Ach), 5.85 (Mor), 6.50 (For) and 6.00 (Dif). For HSJR the cell means were 5.75 (Ach), 5.05 (Mor), 5.67 (For) and 4.25 (Dif). For COLL the cell means were 5.92 (Ach), 4.78 (Mor), 6.80 (For) and 4.57 (Dif). For variable V12 the cell means for HSFR were 5.63 (Ach), 5.54 (Mor), 4.70 (For) and 4.82 (Dif). For HSJR the cell means were 4.50 (Ach), 5.29 (Mor), 5.83 (For) and 5.50 (Dif). For COLL the cell means were 6.42 (Ach), 4.33 (Mor), 5.60 (For) and 5.14 (Dif).

For the interaction of the effects of grade level and sex, although the multivariate test (MANOVA $F = 1.2633$, d.f. effect = 40, d.f. error = 144, $p < .1613$) was not significant,

the variables which were significant on a univariate test were V1 ($F = 4.1973$, $p < .05$) with cell means for the male subjects of 4.30 (HSFR), 4.61 (HSJR) and 7.00 (COLL), and for the female subjects of 6.73 (HSFR), and 5.76 (HSJR) and 6.54 (COLL), and V2 ($F = 3.9918$, $p < .05$) with the cell means for the male subjects of 4.20 (HSFR), 6.22 (HSJR) and 5.83 (COLL), and for the female subjects of 6.23 (HSFR), 7.35 (HSJR) and 5.58 (COLL). For the remainder of the variables, it can be seen that the differences were not great enough to distinguish between the means. For variable V3 the means for the male subjects were 6.90 (HSFR), 6.22 (HSJR) and 7.00 (COLL) and for the female subjects were 6.91 (HSFR), 5.71 (HSJR) and 5.88 (COLL). For variable V4 the cell means for the male subjects were 7.25 (HSFR), 6.06 (HSJR) and 5.58 (COLL). For the female subjects the cell means were 7.23 (HSFR), 7.18 (HSJR) and 6.00 (COLL). For variable V5 the cell means were 5.50 (HSFR), 6.33 (HSJR) and 5.17 (COLL). For the female subjects the cell means were 6.18 (HSFR), 7.18 (HSJR) and 5.81 (COLL). For variable V6 the cell means for the male subjects were 5.90 (HSFR), 4.39 (HSJR) and 6.33 (COLL). For the female subjects the cell means were 5.82 (HSFR), 4.00 (HSJR) and 5.58 (COLL). For variable V7 the cell means for the male subjects were 5.00 (HSFR), 5.06 (HSJR) and 5.67 (COLL). For the female subjects the cell means were 6.82 (HSFR), 6.06 (HSJR) and 6.62 (COLL). For

variable V8 the cell means for the male subjects were 5.95 (HSFR), 5.39 (HSJR) and 5.08 (COLL). For the female subjects the cell means were 4.95 (HSFR), 5.00 (HSJR) and 5.77 (COLL). For variable V9 the cell means for the male subjects were 5.30 (HSFR), 4.72 (HSJR) and 6.83 (COLL). For the female subjects the means were 5.00 (HSFR), 4.18 (HSJR) and 6.19 (COLL). For variable V10 the cell means for the male subjects were 5.95 (HSFR), 6.11 (HSJR) and 5.00 (COLL). For the female subjects the cell means were 5.82 (HSFR), 5.65 (HSJR) and 5.19 (COLL). For variable V11 the cell means for the male subjects were 5.85 (HSFR), 5.61 (HSJR) and 6.25 (COLL). For the female subjects the means were 6.23 (HSFR), 4.47 (HSJR) and 5.35 (COLL). For variable V12 the cell means for the male subjects were 4.85 (HSFR), 4.89 (HSJR) and 5.92 (COLL). The cell means for the female subjects were 5.45 (HSFR), 5.82 (HSJR) and 5.17 (COLL).

For the three way interaction of grade level, sex and identity status, neither the multivariate test (MANOVA F = 1.1257, d.f. effect = 120, d.f. error = 423.5794, $p < .1191$) nor any of the univariate tests for the personality variables was significant. From an examination of the cell means, it can be seen that the differences were not great enough to distinguish between the cell means. For variable V1 the cell means for the male subjects for HSFR were 4.00

(Ach), 5.00 (Mor), 4.00 (For) and 4.00 (Dif). For HSJR the cell means were 4.00 (Ach), 4.89 (Mor), 4.75 (For) and 4.00 (Dif). For COLL the means were 6.67 (Ach), 6.00 (Mor), 8.20 (For) and 5.50 (Dif). For the female subjects, the cell means for HSFR were 6.25 (Ach), 7.57 (Mor), 5.80 (For) and 6.83 (Dif). For HSJR the cell means were 7.50 (Ach), 6.13 (Mor), 5.00 (For) and 4.80 (Dif). For COLL the cell means were 6.22 (Ach), 6.14 (Mor), 6.60 (For) and 7.60 (Dif). For variable V2 for the male subjects the cell means for HSFR were 3.25 (Ach), 3.83 (Mor), 4.80 (For) and 4.80 (Dif). For HSJR the cell means were 6.00 (Ach), 6.56 (Mor), 4.75 (For) and 7.33 (Dif). For COLL the cell means were 7.67 (Ach), 6.00 (Mor), 5.20 (For) and 4.50 (Dif). For the female subjects the cell means for HSFR were 6.25 (Ach), 6.00 (Mor), 7.00 (For) and 5.83 (Dif). The cell means for HSJR were 5.00 (Ach), 7.75 (Mor), 8.00 (For) and 7.40 (Dif). For COLL the cell means were 5.89 (Ach), 5.57 (Mor), 5.20 (For) and 5.40 (Dif). For variable V3, for the male subjects, the cell means for HSFR were 7.25 (Ach), 6.33 (Mor), 8.00 (For) and 6.20 (Dif). For HSJR the cell means were 7.00 (Ach), 5.89 (Mor), 6.00 (For) and 7.00 (Dif). For COLL the cell means were 8.67 (Ach), 8.00 (Mor), 5.80 (For) and 6.50 (Dif). For the female subjects the cell means for HSFR were 6.50 (Ach), 6.71 (Mor), 7.40 (For) and 7.00 (Dif). For HSJR the

cell means were 5.50 (Ach), 6.00 (Mor), 8.00 (For) and 4.40 (Dif). For COLL the cell means were 6.00 (Ach and Mor), 6.80 (For) and 4.60 (Dif). For variable V4, for the male subjects the cell means for HSFR were 7.25 (Ach), 6.67 (Mor), 9.00 (For) and 6.20 (Dif). For HSJR the cell means were 8.50 (Ach), 5.33 (Mor), 6.40 (For) and 6.00 (Dif). For COLL the cell means were 7.00 (Ach), 6.50 (Mor), 4.80 (For) and 4.50 (Dif). For the female subjects the cell means for HSFR were 7.75 (Ach), 7.29 (Mor), 8.00 (For) and 6.17 (Dif). For HSJR the cell means were 5.50 (Ach), 7.75 (Mor), and 7.00 (For and Dif). For COLL the cell means were 6.22 (Ach), 6.71 (Mor), 5.60 (For) and 5.00 (Dif). For variable V5, for the male subjects, the cell means for HSFR were 7.25 (Ach), 5.00 (Mor and Dif) and 5.20 (For). For HSJR the cell means were 7.50 (Ach), 6.00 (Mor), 6.25 (For) and 6.67 (Dif). For COLL the cell means were 6.67 (Ach), 4.00 (Mor), 4.40 (For) and 6.00 (Dif). For the female subjects, the cell means for HSFR were 7.75 (Ach), 5.43 (Mor), 6.80 (For) and 5.50 (Dif). The cell means for HSJR were 6.50 (Ach), 7.00 (Mor and For) and 7.80 (Dif). For COLL the cell means were 4.56 (Ach), 7.14 (Mor), 6.80 (For) and 5.20 (Dif). For variable V6, for the male subjects, the cell means for HSFR were 5.25 (Ach), 5.33 (Mor), 6.20 (For) and 6.80 (Dif). For HSJR the cell means were 3.50 (Ach), 4.78 (Mor), 3.75 (For) and 4.67 (Dif). For COLL the cell means were 5.33 (Ach), 5.50 (Mor), 6.80

(For) and 7.50 (Dif). For the female subjects, the cell means for HSFR were 4.25 (Ach), 6.43 (Mor), 6.20 (For) and 5.83 (Dif). For HSJR the cell means were 4.50 (Ach), 4.13 (Mor), 6.00 (For) and 2.80 (Dif). The cell means for COLL were 6.56 (Ach), 4.57 (Mor), 5.60 (For) and 5.20 (Dif). For variable V7, for the male subjects, the cell means for HSFR were 5.00 (Ach), 4.33 (Mor), 6.40 (For) and 4.40 (Dif). For HSJR the cell means were 6.00 (Ach), 4.44 (Mor), 5.50 (For) and 5.69 (Dif). For COLL the cell means were 7.33 (Ach), 5.00 (Mor), 5.40 (For) and 4.50 (Dif). For the female subjects, the cell means for HSFR were 7.75 (Ach), 6.43 (Mor), 7.20 (For) and 6.33 (Dif). The cell means for HSJR were 5.50 (Ach), 5.88 (Mor), 8.00 (For) and 5.80 (Dif). For COLL the cell means were 6.56 (Ach), 8.00 (Mor), 6.80 (For) and 4.60 (Dif). For variable V8, for the male subjects, the cell means for HSFR were 6.00 (Ach and Mor), 6.40 (For) and 5.40 (Dif). The cell means for HSJR were 3.50 (Ach), 6.44 (Mor), 4.75 (For) and 4.33 (Dif). For COLL the cell means were 5.50 (Ach), 5.50 (Mor), 5.20 (For) and 4.50 (Dif). For the female subjects the cell means for HSFR were 5.25 (Ach), 4.86 (Mor), 3.20 (For) and 6.33 (Dif). For HSJR the cell means were 5.50 (Ach), 4.13 (Mor), 7.00 (For) and 5.40 (Dif). The means for COLL were 6.78 (Ach), 6.71 (Mor), 4.40 (For) and 4.00 (Dif). For variable V9, for the male subjects, the cell means for HSFR were 5.50 (Ach),

5.17 (Mor), 4.60 (For) and 6.00 (Dif). The cell means for HSJR were 3.50 (Ach), 5.22 (Mor), 4.50 (For) and 4.33 (Dif). For COLL the cell means were 8.33 (Ach), 6.00 (Mor), 7.00 (For) and 5.00 (Dif). For the female subjects the cell means for HSFR were 5.00 (Ach), 5.43 (Mor), 4.80 (For) and 4.67 (Dif). For HSJR the cell means were 6.00 (Ach), 3.38 (Mor), 3.50 (For) and 5.00 (Dif). The cell means for COLL were 6.44 (Ach), 5.29 (Mor), and 7.40 (For) and 5.80 (Dif). For variable V10, for the male subjects, the cell means for HSFR were 6.50 (Ach), 6.17 (Mor), 6.20 (For) and 5.00 (Dif). The cell means for HSJR were 4.50 (Ach), 7.22 (Mor), 5.25 (For) and 5.00 (Dif). For COLL the cell means were 5.67 (Ach), 3.50 (Mor), 4.80 (For) and 6.00 (Dif). For the female subjects the cell means for HSFR were 6.25 (Ach), 5.43 (Mor), 6.40 (For) and 5.50 (Dif). For HSJR the cell means were 5.00 (Ach), 4.75 (Mor), 7.50 (For) and 6.60 (Dif). The cell means for COLL were 6.00 (Ach), 5.29 (Mor), 3.80 (For) and 5.00 (Dif). For variable V11, for the male subjects, the cell means for HSFR were 5.75 (Ach), 5.33 (Mor), 6.60 (For) and 5.80 (Dif). For HSJR the cell means were 6.50 (Ach), 5.67 (Mor), 5.50 (For) and 5.00 (Dif). The cell means for COLL were 5.67 (Ach), 5.50 (Mor), 7.00 (For) and 6.00 (Dif). For the female subjects the cell means for HSFR were 6.00 (Ach), 6.29 (Mor), 6.40 (For) and 6.17 (Dif). For HSJR the cell means were 5.00 (Ach), 4.38 (Mor), 6.00

(For) and 3.80 (Dif). For COLL the cell means were 6.00 (Ach), 4.57 (Mor), 6.60 (For) and 4.00 (Dif). For variable V12, for the male subjects, the cell means for HSFR were 5.50 (Ach), 4.67 (Mor), 3.60 (For) and 5.80 (Dif). The cell means for HSJR were 4.50 (Ach), 4.67 (Mor), 5.75 (For) and 4.67 (Dif). For COLL the cell means were 7.33 (Ach), 4.00 (Mor), 5.80 (For) and 6.00 (Dif). For the female subjects the cell means for HSFR were 5.75 (Ach), 6.29 (Mor), 5.80 (For) and 4.00 (Dif). For HSJR the cell means were 4.50 (Ach), and 6.00 (Mor, For and Dif). The cell means for COLL were 6.11 (Ach), 4.43 (Mor), 5.40 (For) and 4.80 (Dif).

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APPENDIX A

1 Myself	1.
2 Myself as I would like to be.	2.
3 Myself as others see me.	3.
4 My Mother	4.
5 My Father	5.
6	6.
7	7.
8	8.
9	9.
10	10.
11	11.
12	12.
13	13.
14	14.
15	15.
16	16.
17	17.
18	18.
19	19.
20	20.

7	6	5	4	3	2	1
A. Outgoing						Shy
B. Adjusted						Maladjusted
C. Decisive						Indecisive
D. Calm						Excitable
E. Interested in Others						Self Absorbed
F. Cheerful						Ill-humored
G. Responsible						Irresponsible
H. Considerate						Inconsiderate
I. Independent						Dependent
J. Interesting						Dull
K.						
L.						
M.						
N.						
O.						
P.						
Q.						
R.						
S.						
T.						

Identity Status Interview

Introduction:

What year are you in? How old are you? (College students only: Did you attend a public or private high school? Was it co-ed? Was there a religious affiliation? Where are you from? Are you still living at home?)
How did you happen to come to (name of school)?
Did your father go to college? Where? What does he do now? Did your mother go to college? Where? What does she do now?

Occupation:

(High school students: What do you plan to do when you finish high school?)
(College students: You said you were majoring in _____; what do you plan to do with it?)
When did you come to decide on_____? Did you ever consider anything else?
What seems attractive about_____?
Most parents have plans for their children, things they'd like them to 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'd be to change this if something better came along?

Religion:

Do you have any particular religious affiliation or preference? How about your folks?
Were you ever very active in church? How about now?
Do you get into many religious discussions?
How do your parents feel about your beliefs now?
Are yours any different from theirs?
Was there any time when you came to doubt any of your religious beliefs? When? How did you resolve your questions? How are things for you now?

Politics:

Do you have any particualr political preference?
How about your parents?
Ever take any kind of political action - join groups, write letters, participate in demonstrations - anything at all like that?
Are there any issues you feel pretty strongly about?
Was there any particular time when you decided on your political beliefs?
What did you think of the past election?

Subject #_____

Sex_____

Age_____

Identity Status Interview Rating Sheet

Occupation:_____

Religion:_____

Ideology:_____

Politics:_____

Identity Status:_____

_____

APPENDIX B

Manova Table A

Blocking for Main Effects for Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV	2.0311	16	168	.0138
SEX	2.6478	8	84	.0122

Effect	Variable	MS	Univariate F
GLV	SF2	605.1149	1.2591
	SF3	1884.6245	2.5961
	SSXID	2588.0141	2.1447
	INT	11129846.4588	3.6868 *
	CST	0.1978	0.7691
	ESTSF	6203.6121	2.5445
	EXTID	4732.4111	2.0584
	EXTOT	13291.9852	3.4765 *
SEX	SF2	33.9167	0.0706
	SF3	3437.8650	4.7358 *
	SSXID	4689.3061	3.8860
	INT	14587050.5637	4.8320 *
	CST	0.1988	0.7732
	EXTSF	5871.2233	2.4082
	EXTID	3024.7262	1.3156
	EXTOT	5343.7052	1.3156

*p .05
**p .01
***p .001

Manova Table A cont.

Effect	Manova F	Effect D. F.	Error D. F.	p
EGO	1.0859	24	244.2268	.3604
GLV	1.9303	16	168	.0208

Effect	Variable	MS	Univariate F
EGO	SF2	226.5485	0.4714
	SF3	1033.9800	1.4243
	SSXID	975.8530	0.8087
	INT	1112436.6528	0.3685
	CST	0.3614	1.4056
	EXTSF	595.1237	0.2441
	EXTID	1640.9352	0.7137
	EXTOT	4815.4680	1.2595
GLV	SF2	484.0829	1.0072
	SF3	1865.4288	2.5697
	SSXID	2190.6595	1.8154
	INT	10587082.4265	3.5070 *
	CST	0.2190	0.8518
	EXTSF	5901.1064	2.4204
	EXTID	5142.5826	2.2368
	EXTOT	11217.5377	2.9339

Manova Table A cont.

Effect	Manova F	Effect D. F.	Error D. F.	p
SEX	3.3721	8	84	.0022
EGO	1.0984	16	168	.3603

Effect	Variable	MS	Univariate F
SEX	SF2	135.1423	0.2812
	SF3	4632.4872	6.3814 *
	SSXID	5246.0693	4.3474 *
	INT	20743329.2814	6.8713 *
	CST	0.2994	1.1643
	EXTSF	8465.1622	3.4721
	EXTID	3154.5299	1.3721
	EXTOT	9798.3135	2.5628
EGO	SF2	170.7060	0.3552
	SF3	1414.4909	1.9485
	SSXID	367.3414	0.3044
	INT	331110.0414	0.1097
	CST	0.4551	1.7699
	EXTSF	355.6436	0.1459
	EXTID	1377.0301	0.5990
	EXTOT	4439.5142	1.1612

Manova Table A cont.

Main Effects for Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
EGO	1.1082	24	244.23	.3350
SEX	2.9117	8	84	.0065
GLV	1.6324	16	168	.0653

Effect	Variable	MS	Univariate F
EGO	SF2	157.8963	0.3285
	SF3	1017.0446	1.4010
	SSXID	1020.2719	0.8455
	INT	1334630.1785	0.4421
	CST	0.3552	1.3813
	EXTSF	654.9574	0.2686
	EXTID	2226.3182	0.9684
	EXTOT	3840.6217	1.0045
SEX	SF2	70.0241	0.1457
	SF3	3425.4502	4.7187 *
	SSXID	5617.2720	4.6550 *
	INT	16339159.2055	5.4124 *
	CST	0.1375	0.5348
	EXTSF	6655.7358	2.7300

Manova Table A cont.

Effect	Variable	MS	Univariate F
	EXTID	3960.5321	1.7227
	EXTOT	6568.0613	1.7179
GLV	SF2	463.7781	0.9650
	SF3	1314.5327	1.8108
	SSXID	2164.5180	1.7937
	INT	7885818.0223	2.6122
	CST	0.1573	0.6118
	EXTSF	4719.1001	1.9356
	EXTID	4972.8526	2.1630
	EXTOT	9643.0227	2.5221

Manova Table A cont.

Cell Means for the Main Effects for Main Grid Indices

Effect	Level	Variable							
		SF2	SF3	SSXID	INT	CST	EXTSF	EXTID	EXTOT
EGO	ACH	.77	.74	.65	37.63	1.0	.95	1.41	.94
	MOR	.74	.69	.59	36.47	.99	.97	1.31	1.14
	FOR	.78	.77	.71	40.11	.99	.90	1.43	.86
	DIF	.72	.83	.59	35.35	1.0	1.02	1.27	.96
SEX	Male	.74	.68	.56	32.44	.99	1.06	1.29	1.10
	Female	.76	.81	.69	41.01	1.0	.89	1.39	.91
GLV	HSFR	.73	.71	.69	34.07	1.0	1.07	1.23	1.12
	HSJR	.73	.71	.53	34.33	.99	.98	1.44	1.08
	COLL	.80	.83	.65	43.54	1.0	.82	1.39	.78

Manova Table A cont.

Blocking for Two Way Interactions

Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV X SEX	1.5093	16	168	.1014
GLV X EGO	1.2131	48	417.38	.1649
SEX X EGO	1.0922	24	244.2268	.3531
GLV X SEX	1.4999	16	168	.1244
GLV X EGO	1.3083	48	417.38	.0891
SEX X EGO	1.292	24	244.2268	.3121

Effect	Variable	MS	Univariate F
GLV X SEX	SF2	895.3029	1.8629
	SF3	2404.1070	3.3118 *
	SSXID	1330.7662	1.1028
	INT	8202013.7441	2.7189
	CST	0.1725	0.2821
	EXTSF	831.2259	0.3409
	EXTID	2974.4739	1.2938
	EXTOT	174.9789	0.0458

Manova Table A cont.

Effect	Variable	MS	Univariate F
GLV X EGO	SF2	298.1524	0.6204
	SF3	960.9288	1.3237
	SSXID	2185.6427	1.8112
	INT	2685319.9433	0.8895
	CST	0.5359	2.0840
	EXTSF	5028.4545	2.0625
	EXTID	3005.9716	1.3075
	EXTOT	1338.3054	0.3500
SEX X EGO	SF2	169.9362	0.3536
	SF3	1417.3637	1.9525
	SSXID	1340.6372	1.1110
	INT	3592783.1638	1.1901
	CST	0.1711	0.6655
	EXTSF	2268.5293	0.9305
	EXTID	1961.8119	0.8533
	EXTOT	677.1547	0.1771
GLV X SEX	SF2	954.1755	1.9854
	SF3	2526.4429	3.4803 *
	SSXID	1115.7160	0.9246
	INT	6737633.2037	2.2319
	CST	0.0725	0.2818

Manova Table cont.

Effect	Variable	MS	Univariate F
	EXTSF	1965.4809	0.4370
	EXTID	3028.1221	1.3171
	EXTOT	35.0764	0.0092
GLV X EGO	SF2	292.2391	0.6081
	SF3	987.9422	1.3609
	SSXID	2409.8917	1.9971
	INT	3488573.3449	1.1556
	CST	0.5676	2.2075 *
	EXTSF	5052.9890	2.0726
	EXTID	3076.1388	1.3380
	EXTOT	1467.5408	0.3838
SEX S EGO	SF2	138.1202	0.2874
	SF3	989.1392	1.3624
	SSXID	792.7196	0.6569
	INT	3200794.9667	1.0603
	CST	0.2588	1.0066
	EXTSF	3020.5678	1.2389
	EXTID	1969.6437	0.8567
	EXTOT	399.0509	0.1044

Manova Table A cont.

Two Way Interactions for Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
SEX X EGO	1.0850	24	244.2268	.3615
GLV X EGO	1.2293	48	417.3775	.1493
GLV X SEX	1.3871	16	168	.1533

Effect	Variable	MS	Univariate F
SEX X EGO	SF2	158.5557	0.3299
	SF3	1066.9477	1.4698
	SSXID	638.6997	0.5293
	INT	2330738.8224	0.7721
	CST	0.2513	0.9775
	EXTSF	3343.2071	1.3713
	EXTID	1971.1050	0.8574
	EXTOT	238.2019	0.0741
GLV X EGO	SF2	272.8379	0.5677
	SF3	744.9422	1.0262
	SSXID	1906.3573	1.5798
	INT	2544424.6194	0.8428
	CST	0.5760	2.2401 *
	EXTSF	5487.7056	2.2509 *

Manova Table A cont.

Effect	Variable	MS	Univariate F
	EXTID	2992.7354	1.3017
	EXTOT	1187.9631	0.3107
GLV X SEX	SF2	1004.1090	2.0893
	SF3	2518.0172	3.4687 *
	SSXID	977.5290	0.8101
	INT	5724183.2914	1.8962
	CST	0.0337	0.1312
	EXTSF	963.4097	0.3952
	EXTID	3168.1815	1.3780
	EXTOT	203.4553	0.0532

Manova Table A cont.

Cell Means for Two Way Interactions

Main Grid Indices

Effect	Variable	Sex	Ach	Mor	For	Dif
SEX X EGO	SF2	Male	.78	.71	.75	.73
		Female	.76	.76	.82	.71
	SF3	Male	.67	.55	.71	.88
		Female	.79	.80	.85	.80
	SSXID	Male	.62	.42	.67	.58
		Female	.67	.73	.77	.60
	INT	Male	39.07	29.23	35.62	27.48
		Female	36.77	42.06	45.35	40.27
	CST	Male	1.00	.99	.99	1.00
		Female	1.00	1.00	1.00	1.00
	EXTSF	Male	1.24	1.04	1.00	1.01
		Female	.77	.91	.79	1.03

Manova Table A cont.

Effect	Variable	Sex	Ach	Mor	For	Dif
	EXTID	Male	1.22	1.25	1.49	1.13
		Female	1.53	1.35	1.36	1.35
	EXTOT	Male	1.01	1.30	.90	1.12
		Female	.89	1.02	.81	.87

Manova Table A cont.

Effect	Variable	GLV	Ach	Mor	For	Dif
EGO X GLV	SF2	HSFR	.72	.71	.74	.75
		HSJR	.77	.70	.77	.73
		COLL	.80	.85	.83	.66
	SF3	HSFR	.71	.58	.69	.88
		HSJR	.73	.66	.72	.82
		COLL	.77	.92	.89	.75
	SSXID	HSFR	.75	.63	.65	.77
		HSJR	.71	.47	.60	.53
		COLL	.57	.78	.85	.37
	INT	HSFR	35.78	29.89	35.26	36.69
		HSJR	36.39	36.94	28.31	32.28
		COLL	39.28	45.06	52.03	36.76
	CST	HSFR	1.00	.99	.99	1.00
		HSJR	.99	1.00	1.00	1.00
		COLL	1.00	.99	1.00	1.00

Manova Table A cont.

Effect	Variable	Glv	Ach	Mor	For	Dif
	EXTSF	HSFR	1.03	.87	1.04	
		HSJR	1.11	1.18	.73	
		COLL	.83	.72	.83	
	EXTID	HSFR	1.55	1.22	1.37	
		HSJR	1.64	1.55	1.55	
		COLL	1.49	1.26	1.26	
	EXTOT	HSFR	1.03	1.25	1.15	
		HSJR	1.06	1.27	.84	
		COLL	.83	.74	.81	

Manova Table A cont.

Effect	Variable	Sex	HSFR	HSJR	COLL
GLV X SEX	SF2	Male	.67	.77	.81
		Female	.78	.68	.79
	SF3	Male	.58	.66	.89
		Female	.83	.78	.81
	SSXID	Male	.57	.46	.67
		Female	.80	.61	.65
	INT	Male	26.22	29.95	46.53
		Female	41.21	38.97	42.16
	CST	Male	.99	.99	1.00
		Female	1.00	1.00	1.00
	EXTSF	Male	1.10	1.09	.94
		Female	1.04	.87	.77
	EXTID	Male	1.08	1.48	1.33
		Female	1.37	1.40	1.41
	EXTOT	Male	1.20	1.17	.82
		Female	1.04	.99	.76

Manova Table A cont.

Three Way Interactions for Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV X SEX X EGO	1.3803	48	417.3775	.0533

Effect	Variable	MS	Univariate F
GLV X SEX X EGO	SF2	510.6613	1.0625
	SF3	611.5144	0.8424
	SSXID	1209.7669	1.0025
	INT	6277403.4268	2.0794
	CST	0.7757	3.0167 **
	EXTSF	3547.7955	1.4552
	EXTID	1472.7342	0.6406
	EXTOT	1619.2543	0.4235

Manova Table A cont.

Cell Means for Three Way Interaction for Main Grid Indices

Variable	Sex	Glv	Ach	Mor	For	Dif
SF2	Male	HSFR	.65	.68	.61	.74
		HSJR	.85	.68	.85	.86
		COLL	.91	.96	.81	.53
	Female	HSFR	.79	.74	.88	.75
		HSJR	.68	.72	.61	.66
		COLL	.77	.82	.86	.71
SF3	Male	HSFR	.57	.42	.47	.88
		HSJR	.52	.54	.77	.93
		COLL	.90	.95	.89	.79
	Female	HSFR	.85	.73	.90	.89
		HSJR	.94	.78	.63	.76
		COLL	.73	.91	.89	.73
SSXID	Male	HSFR	.65	.51	.51	.66
		HSJR	.68	.26	.61	.71
		CCLL	.56	.85	.86	.18
	Female	HSFR	.85	.73	.79	.87
		HSJR	.73	.71	.60	.42
		COLL	.57	.76	.83	.44

Manova Table A cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
INT	Male	HSFR	39.75	18.70	21.59	29.04
		HSJR	17.53	36.33	29.45	19.78
		COLL	52.52	28.86	54.57	35.13
	Female	HSFR	31.80	39.48	48.94	43.07
		HSJR	55.25	37.63	26.03	39.78
		COLL	34.87	49.70	49.50	37.41
CST	Male	HSFR	1.00	.99	.99	1.00
		HSJR	.99	.99	1.00	1.00
		COLL	.99	1.00	1.00	1.00
	Female	HSFR	.99	1.00	1.00	1.00
		HSJR	.99	1.00	.99	.99
		COLL	1.00	.99	1.00	1.00
EXTSF	Male	HSFR	1.34	.91	1.24	.99
		HSJR	1.49	1.16	.84	.98
		COLL	.93	.90	.90	1.09
	Female	HSFR	.72	.83	.85	1.65
		HSJR	.73	1.20	.50	.53
		COLL	.80	.67	.84	.77

Manova Table A cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
EXTID	Male	HSFR	1.05	.89	1.59	.84
		HSJR	1.36	1.48	1.59	1.44
		COLL	1.34	1.28	1.32	1.41
	Female	HSFR	1.55	1.22	1.37	1.40
		HSJR	1.64	1.55	1.55	1.01
		COLL	1.49	1.26	1.26	1.64
EXTOT	Male	HSFR	1.19	1.38	1.08	1.11
		HSJR	1.20	1.35	.85	1.07
		COLL	.64	.90	.74	1.21
	Female	HSFR	.87	1.14	.85	1.18
		HSJR	.92	1.19	.99	.70
		COLL	.90	.70	.71	.65

Manova Table B

Blocking for Main Effects

Main Grid Indices and V1 to V12

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV	3.4270	40	144	.0001
SEX	3.6089	20	72	.0001

Effect	Variable	MS	Univariate F
GLV	SF2	0.0605	1.2591
	SF3	0.1885	2.5961
	SSXID	0.2588	2.1447
	INT	1112.9846	3.6868 *
	CST	0.0000	0.7691
	EXTSF	0.6204	2.5445
	EXTID	0.4732	2.0584 *
	EXTOT	1.3292	3.4765 **
	V1	22.8488	6.9612 **
	V2	22.8219	6.7941 **
	V3	9.0706	2.5549
	V4	18.7151	4.9597 **
	V5	12.9375	3.3064 *
	V6	32.6603	9.2927 ***

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V7	5.4430	1.3571
	V8	1.1598	0.3679
	V9	35.5897	8.6759
	V10	7.1856	1.9008
	V11	9.3794	2.0045
	V12	0.9515	0.2795
SEX	SF2	0.0034	0.0706
	SF3	0.3438	4.7358 *
	SSXID	0.4689	3.8860
	INT	1458.7051	4.8320 *
	CST	0.0000	0.7732
	EXTSF	0.5871	2.4082
	EXTID	0.3025	1.3156
	EXTOT	0.5344	1.3976
	V1	36.6926	11.1789 **
	V2	30.6996	9.1393 **
	V3	6.7202	1.8929
	V4	6.1451	1.6285
	V5	14.2601	3.6443
	V6	3.9947	1.1366
	V7	46.2263	11.5254 **

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V8	2.4496	0.771
	V9	6.3306	1.5432
	V10	0.5430	0.1436
	V11	6.5855	1.4074
	V12	3.0783	0.9042

Manova Table B cont.

Effect	Manova F	Effect D. F.	Error D. F.	p
EGO	1.0674	60	215.6431	.3609
GLV	3.2616	40	144	.0001

Effect	Variable	MS	Univariate F
EGO	SF2	0.0227	0.4717
	SF3	0.1034	1.4243
	SSXID	0.0976	0.8087
	INT	111.2437	0.3685
	CST	0.0000	1.4056
	EXTSF	0.0595	0.2441
	EXTID	0.1641	0.7137
	EXTOT	0.4815	1.2595
	V1	0.5081	0.1548
	V2	1.4615	0.4351
	V3	5.8667	1.6525
	V4	4.6195	1.2242
	V5	0.3346	0.0855
	V6	3.1992	0.9103
	V7	8.1360	2.0285
	V8	4.0216	1.2759

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V8	4.0216	1.2759
	V9	6.2726	1.5291
	V10	0.9222	0.2440
	V11	10.3794	2.2182
	V12	2.8310	0.8316
GLV	SF2	0.0484	1.0072
	SF3	0.1865	2.5697
	SSXID	0.2191	1.8154
	INT	1058.7082	3.5070 *
	CST	0.0000	0.8518
	EXTSF	0.5901	2.4204
	EXTID	0.5143	2.2368
	EXTOT	1.1218	2.9339
	V1	24.5262	7.4722 **
	V2	21.1429	6.2943 **
	V3	9.0682	2.5543
	V4	21.5765	5.7181 **
	V5	14.3251	3.6610 *
	V6	30.0668	8.5548 ***
	V7	2.9453	0.7343
	V8	1.3472	0.4274

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V9	28.7855	7.0172 **
	V10	8.1457	2.1548
	V11	7.6182	1.6281
	V12	0.6869	0.2018

Manova Table B cont.

Effect	Manova F	Effect D. F.	Error D. F.	p
SEX	4.0344	20	72	.0001
EGO	1.1817	40	144	.2370

Effect	Variable	MS	Univariate F
SEX	SF2	0.0135	0.2812
	SF3	0.4632	6.3814 *
	SSXID	0.5246	4.3474 *
	INT	2074.3329	6.8713 *
	CST	0.0000	1.1643
	EXTSF	0.8465	3.4721
	EXTID	0.3155	1.3721
	EXTOT	0.9798	2.5628
	V1	50.7452	15.4602 ***
	V2	25.0531	7.4583 **
	V3	6.9354	1.9535
	V4	2.5959	0.6880
	V5	9.2565	2.3656
	V6	1.2924	0.3677
	V7	52.1531	13.0031 ***
	V8	1.7338	0.5501

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V9	1.1131	0.2713
	V10	1.8655	0.4935
	V11	5.5867	1.1940
	V12	3.6003	1.0575
EGO	SF2	0.0171	0.3552
	SF3	0.1414	1.9485
	SSXID	0.0367	0.3044
	INT	33.1110	0.1097
	CST	0.0000	1.7699
	EXTSF	0.0356	0.1459
	EXTID	0.1377	0.5990
	EXTOT	0.4440	1.1612
	V1	0.9937	0.3027
	V2	1.7570	0.5231
	V3	4.4365	1.2497
	V4	6.0990	1.6163
	V5	0.3618	0.0925
	V6	1.6247	0.4623
	V7	8.4633	2.1101
	V8	2.8894	0.9167
	V9	9.2913	2.2626

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V10	0.8688	0.2298
	V11	5.3663	1.1469
	V12	4.0929	1.2022

Manova Table B cont.

Main Effects for Main Grid Indices and V1 to V12

Effect	Manova F	Effect D. F.	Error D. F.	p
EGO	0.9745	60	215.6431	.5341
SEX	3.6785	20	72	.0001
GLV	3.1043	40	144	.0001

Effect	Variable	MS	Univariate F
EGO	SF2	0.0158	0.3285
	SF3	0.1017	1.4010
	SSXID	0.1020	0.8455
	INT	133.4630	0.4421
	CST	0.000	1.3813
	EXTSF	0.0655	0.2686
	EXTID	0.2226	0.9684
	EXTOT	0.3841	1.0045
	V1	1.7929	0.5462
	V2	0.0868	0.0258
	V3	5.1888	1.4616
	V4	7.0922	1.8795
	V5	1.3731	0.3509
	V6	1.1796	0.3356

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V7	8.6570	2.1584
	V8	4.4789	1.4209
	V9	1.6754	0.4084
	V10	1.5976	0.4226
	V11	8.1877	1.7712
	V12	2.6918	0.7907
SEX	SF2	0.0070	0.1457
	SF3	0.3425	4.7187 *
	SSXID	0.5617	4.6550 *
	INT	1633.9159	5.4124 *
	CST	0.0000	0.5348
	EXTSF	0.6656	2.7300
	EXTID	0.3961	1.7227
	EXTOT	0.6568	1.7179
	V1	37.1923	11.3311 **
	V2	29.0337	8.9913 **
	V3	4.6915	1.3215
	V4	7.8402	2.0778
	V5	14.6006	3.7314
	V6	3.1227	0.8885
	V7	52.7845	13.1606 ***

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V8	3.4467	1.0935
	V9	6.1475	1.4986
	V10	0.6490	0.1717
	V11	3.8328	0.8191
	V12	3.1898	0.9370
GLV	SF2	0.0464	0.9650
	SF3	0.1315	1.8108
	SSXID	0.2165	1.7937
	INT	788.5818	2.6122
	CST	0.0000	0.6118
	EXTSF	0.4719	1.9356
	EXTID	0.4973	2.1630
	EXTOT	0.9643	2.5221
	V1	17.3274	5.2790 **
	V2	24.0113	7.1482 **
	V3	9.0454	2.5479
	V4	23.3805	6.1961 **
	V5	17.0692	4.3623 *
	V6	32.5709	9.2672 ***
	V7	1.3512	0.3369
	V8	1.3703	0.4347

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V9	31.4291	7.6616 ***
	V10	7.6310	2.0187
	V11	8.5956	1.8370
	V12	0.6353	0.1866

Manova Table B cont.

Cell Means for the Main Grid Indices for V1 to V12

Effect	Level	Variables					
		V1	V2	V3	V4	V5	V6
EGO	Ach	5.83	5.67	6.67	6.88	6.21	5.38
	Mor	5.92	6.08	6.26	6.69	6.05	5.03
	For	5.85	5.62	6.92	6.81	5.96	5.81
	Dif	5.62	5.92	5.85	5.96	5.96	5.31
SEX	Male	5.06	5.32	6.68	6.42	5.72	5.46
	Female	6.40	6.26	6.18	6.72	6.29	5.25
GLV	HSFR	5.57	5.26	6.90	7.24	5.86	5.86
	HSJR	5.17	6.77	5.97	6.60	6.74	4.20
	COLL	6.68	5.66	6.24	5.87	5.61	5.82

Manova Table B cont.

Effect	Level	Variables					
		V7	V8	V9	V10	V11	V12
EGO	Ach	6.46	5.79	6.00	5.88	5.88	5.83
	Mor	5.74	5.62	4.92	5.69	5.26	5.15
	For	6.42	4.96	5.54	5.46	6.42	5.31
	Dif	5.31	5.15	5.19	5.50	5.08	5.12
SEX	Male	5.18	5.54	5.46	5.78	5.86	5.12
	Female	6.54	5.26	5.52	5.52	5.42	5.48
GLV	HSFR	5.95	5.43	5.14	5.88	6.05	5.17
	HSJR	5.54	5.20	4.46	5.89	5.06	5.34
	COLL	6.32	5.55	6.39	5.13	5.63	5.47

Manova Table B cont.

Blocking for Two Way Interactions

Main Grid Indices and V1 to V12

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV X SEX	1.3753	40	144	.0900
GLV X EGO	1.2329	120	423.5794	.0689
SEX X EGO	1.2408	60	215.6431	.1351
GLV X SEX	1.2956	40	144	.1372
GLV X EGO	1.2757	120	423.5794	.0421
SEX X EGO	1.2390	60	215.6431	.1367

Effect	Variable	MS	Univariate F
GLV X SEX	SF2	0.0895	1.8629
	SF3	0.2404	3.3118 *
	SSXID	0.1331	1.1028
	INT	820.8014	2.7189
	CST	0.0000	0.2821
	EXTSF	0.0831	0.3409
	EXTID	0.2974	1.2938
	EXTOT	0.0175	0.0458 *
	V1	19.0990	5.8188 **
	V2	12.1773	3.6252 *

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V3	2.5985	0.7319
	V4	3.7014	0.9809
	V5	0.1115	0.0285
	V6	0.7949	0.2262
	V7	1.8055	0.4502
	V8	5.3760	1.7055
	V9	0.3319	0.0809
	V10	0.7494	0.1982
	V11	5.5301	1.1819
	V12	6.2782	1.8442
GLV X EGO	SF2	0.0298	0.6204
	SF3	0.0961	1.3237
	SSXID	0.2186	1.8112
	INT	268.5320	0.8895
	CST	0.0001	2.0840
	EXTSF	0.5028	2.0625
	EXTID	0.3006	1.3075
	EXTOT	0.1338	0.3500
	V1	4.2353	1.2903
	V2	5.2519	1.5635
	V3	1.8301	0.5155

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V4	4.6896	1.2428
	V5	6.7852	1.7340
	V6	4.5095	1.2831
	V7	5.2209	1.3017
	V8	5.0899	1.6148
	V9	3.4589	0.8432
	V10	3.9922	1.0561
	V11	1.9465	0.4160
	V12	4.4031	1.2934
SEX X EGO	SF2	0.0170	0.3536
	SF3	0.1417	1.9525
	SSXID	0.1341	1.1110
	INT	359.2783	1.1901
	CST	0.0000	0.6655
	EXTSF	0.2269	0.9305
	EXTID	0.1962	0.8533
	EXTOT	0.0677	0.1771
	V1	3.7048	1.1287
	V2	1.5688	0.4670
	V3	5.1970	1.4639
	V4	5.9581	1.5790

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V5	11.1556	2.8509 *
	V6	5.2465	1.4928
	V7	3.6846	0.9187
	V8	8.0132	2.5422
	V9	1.6912	0.4123
	V10	4.7333	1.2521
	V11	0.9025	0.1929
	V12	4.1041	1.2055
GLV X SEX	SF2	0.0954	1.9854
	SF3	0.2526	3.4803 *
	SSXID	0.1116	0.9246
	INT	673.7633	2.2319
	CST	0.0000	0.2818
	EXTSF	0.1065	0.4370
	EXTID	0.3028	1.3171
	EXTOT	0.0035	0.0092
	V1	17.6967	5.3915 **
	V2	12.6019	3.7516 *
	V3	2.5023	0.7048
	V4	2.2885	0.6065
	V5	0.0645	0.0165

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V6	1.5610	0.4442
	V7	2.3201	0.5785
	V8	4.9188	1.5605
	V9	0.4889	0.1192
	V10	0.1223	0.0323
	V11	5.5708	1.1906
	V12	5.6898	1.6713
GLV X EGO	SF2	0.0292	0.6081
	SF3	0.0988	1.3609
	SSXID	0.2410	1.9971
	INT	348.8573	1.1556
	CST	0.0001	2.2075 *
	EXTSF	0.5053	2.0726
	EXTID	0.3076	1.3380
	EXTOT	0.1468	0.3838
	V1	5.5271	1.6839
	V2	4.7715	1.4205
	V3	1.4965	0.4215
	V4	5.0356	1.3345
	V5	6.8268	1.7447
	V7	4.9668	1.2384

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V8	6.1062	1.9372
	V9	3.4855	0.8497
	V10	4.2086	1.1133
	V11	2.2958	0.4907
	V12	4.4527	1.3079
SEX X EGO	SF2	0.0138	0.2874
	SF3	0.0989	1.3624
	SSXID	0.0793	0.6569
	INT	320.2795	1.0603
	CST	0.0000	1.0066
	EXTSF	0.3021	1.2389
	EXTID	0.1970	0.8567
	EXTOT	0.0399	0.1044
	V1	4.1185	1.2548
	V2	2.1783	0.6485
	V3	5.5978	1.5768
	V4	5.5219	1.4634
	V5	7.6248	1.9486
	V6	4.3118	1.2268
	V7	2.4393	0.6082
	V8	8.3968	2.6639

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V9	1.2066	0.2941
	V10	3.9800	1.0529
	V11	0.4826	0.1031
	V12	6.2022	1.8218

Manova Table B cont.

Two Way Interactions

Main Grid Indices and V1 to V12

Effect	Manova F	Effect D. F.	Error D. F.	p
SEX X EGO	1.1532	60	215.6431	.2305
GLV X EGO	1.2165	120	432.5794	.0823
GLV X SEX	1.2633	40	144	.1613

Effect	Variable	MS	Univariate F
SEX X EGO	SF2	0.0159	0.3299
	SF3	0.1067	1.4698
	SSXID	0.0639	0.5293
	INT	233.0739	0.7721
	CST	0.0000	0.9775
	EXTSF	0.3343	1.3713
	EXTID	0.1971	0.8574
	EXTOT	0.0283	0.0741
	V1	3.0291	0.9229
	V2	2.0984	0.6247
	V3	5.5917	1.5750
	V4	4.2952	1.1383
	V5	7.6307	1.9501

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V6	4.5857	1.3048
	V7	2.4306	0.6060
	V8	8.2631	2.6215
	V9	1.1104	0.2707
	V10	3.6758	0.9724
	V11	0.5004	0.1070
	V12	5.3185	1.5623
GLV X EGO	SF2	0.0273	0.5677
	SF3	0.0745	1.0262
	SSXID	0.1906	1.5798
	INT	254.4425	0.8428
	CST	0.0001	2.2401 *
	EXTSF	0.5488	2.2509
	EXTID	0.2993	1.3017
	EXTOT	0.1188	0.3107
	V1	4.3649	1.3298
	V2	5.3752	1.6002
	V3	2.0594	0.5801
	V4	4.3291	1.1473
	V5	5.0384	1.2876
	V6	3.9237	1.1164

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V7	4.4224	1.1026
	V8	5.3672	1.7028
	V9	3.1162	0.7596
	V10	3.6724	0.9715
	V11	1.7319	0.3701
	V12	5.2064	1.5293
GLV X SEX	SF2	0.1004	2.0893
	SF3	0.2518	3.4687 *
	SSXID	0.0978	0.8101
	INT	572.4183	1.8962
	CST	0.0000	0.1312
	EXTST	0.0963	0.3952
	EXTID	0.3168	1.3780
	EXTOT	0.0203	0.0532
	V1	13.7770	4.1973 *
	V2	13.4087	3.9918 *
	V3	3.9070	1.1005
	V4	1.4409	0.3819
	V5	0.0456	0.0117
	V6	1.4164	0.4030
	V7	3.5701	0.8901

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V8	4.9057	1.5563
	V9	0.1090	0.0266
	V10	0.0275	0.0073
	V11	6.0441	1.2917
	V12	4.6187	1.3567

Manova Table 3 cont.

Cell Means for Two Way Interactions for V1 to V12

Effect	Variable	Sex	Ach	Mor	For	Dif
SEX X EGO	V1	Male	4.89	5.06	5.71	4.30
		Female	6.40	6.59	6.00	6.44
	V2	Male	5.33	5.53	4.93	5.50
		Female	5.87	6.50	6.42	6.19
	V3	Male	7.67	6.29	6.64	6.50
		Female	6.07	6.23	7.25	5.44
	V4	Male	7.44	5.94	6.79	5.80
		Female	6.53	7.27	6.83	6.06
	V5	Male	7.11	5.41	5.21	5.70
		Female	5.67	6.55	6.83	6.13
	V6	Male	4.89	5.06	5.71	6.30
		Female	5.67	5.00	5.92	4.69
	V7	Male	6.00	4.47	5.79	4.80
		Female	6.73	6.73	7.17	5.63

Manova Table B cont.

Effect	Variable	Sex	Ach	Mor	For	Dif
	V8	Male	5.11	6.18	5.50	4.90
		Female	6.20	5.18	4.33	5.31
	V9	Male	6.00	5.29	5.43	5.30
		Female	6.00	4.64	5.67	5.13
	V10	Male	5.78	6.41	5.43	5.20
		Female	5.93	5.14	5.50	5.69
	V11	Male	5.89	5.53	6.43	5.60
		Female	5.87	5.05	6.42	4.75
	V12	Male	5.89	4.59	5.00	5.50
		Female	5.80	5.59	5.67	4.88

Effect	Variable	Glv	Ach	Mor	For	Dif
EGO X GLV	V1	HSFR	5.13	6.38	4.90	5.55
		HSJR	5.75	5.47	4.83	4.50
		COLL	6.33	6.11	7.40	7.00

Manova Table B cont.

Effect	Variable	Glv	Ach	Mor	For	Dif
	V2	HSFR	4.75	5.00	5.90	5.36
		HSJR	5.50	7.12	5.83	7.38
		COLL	6.33	5.67	5.20	5.14
	V3	HSFR	6.88	6.54	7.70	6.64
		HSJR	6.25	5.94	6.67	5.38
		COLL	6.67	6.44	6.30	5.14
	V4	HSFR	7.75	7.29	8.00	6.17
		HSJR	5.50	7.75	7.00	7.00
		COLL	6.22	6.71	5.60	5.00
	V5	HSFR	7.50	5.23	6.00	5.27
		HSJR	7.00	6.47	6.50	7.38
		COLL	5.08	6.44	5.60	5.43
	V6	HSFR	4.75	5.92	6.20	6.27
		HSJR	4.00	4.47	4.50	3.50
		COLL	6.25	4.78	6.20	5.86

Manova Table B cont.

Effect	Variable	Glv	Ach	Mor	For	Dif
	V7	HSFR	6.38	5.46	6.80	5.45
		HSJR	5.75	5.12	6.33	5.75
		COLL	6.75	7.33	6.10	4.57
	V8	HSFR	5.63	5.38	4.80	5.91
		HSJR	4.50	5.35	5.50	5.00
		COLL	6.33	6.44	4.80	4.14
	V9	HSFR	5.25	5.31	4.70	5.27
		HSJR	4.75	4.35	4.17	4.75
		COLL	6.92	5.44	7.20	5.57
	V10	HSFR	6.38	5.77	6.30	5.27
		HSJR	4.75	6.06	6.00	6.00
		COLL	5.92	4.89	4.30	5.29
	V11	HSFR	5.88	5.85	6.50	6.00
		HSJR	5.75	5.06	5.67	4.25
		COLL	5.92	4.78	6.80	4.57

Manova Table B cont.

Effect	Variable	Glv	Ach	Mor	For	Dif
	V12	HSFR	5.63	5.54	4.70	4.82
		HSJR	4.50	5.29	5.83	5.50
		COLL	6.42	4.33	5.60	5.14

Manova Table B cont.

Effect	Variable	Sex	HSFR	HSJR	COLL
GLV X SEX	V1	Male	4.30	4.61	7.00
		Female	6.73	5.76	6.54
	V2	Male	4.20	6.22	5.83
		Female	6.23	7.35	5.58
	V3	Male	6.90	6.22	7.00
		Female	6.91	5.71	5.88
	V4	Male	7.25	6.06	5.58
		Female	7.23	7.18	6.00
	V5	Male	5.50	6.33	5.17
		Female	6.18	7.18	5.81
	V6	Male	5.90	4.39	6.33
		Female	5.82	4.00	5.58
	V7	Male	5.00	5.06	5.67
		Female	6.82	6.06	6.62

Manova Table B cont.

Effect	Variable	Sex	HSFR	HSJR	COLL
	V8	Male	5.95	5.39	5.08
		Female	4.95	5.00	5.77
	V9	Male	5.30	4.72	6.83
		Female	5.00	4.18	6.19
	V10	Male	5.95	6.11	5.00
		Female	5.82	5.65	5.19
	V11	Male	5.85	5.61	6.25
		Female	6.23	4.47	5.35
	V12	Male	4.85	4.89	5.92
		Female	5.45	5.82	5.27

Manova Table B cont.

Three Way Interaction for Main Grid Indices and V1 to V12

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV X EGO X SEX	1.1257	120	423.5794	.1991

Effect	Variable	MS	Univariate F
GLV X EGO X SEX	SF2	0.0511	1.0625
	SF3	0.0612	0.8424
	SSXID	0.1210	1.0025
	INT	627.7403	2.0794
	CST	0.0001	3.0167 **
	EXTSF	0.3548	1.4552
	EXTID	0.1473	0.6406
	EXTOT	6.1619	0.4235
	V1	2.0014	0.6097
	V2	3.0077	0.8954
	V3	4.1921	1.1808
	V4	3.1890	0.8451
	V5	3.4375	0.8785
	V6	3.7808	1.0757
	V7	3.2319	0.8058

Manova Table B cont.

Effect	Variable	MS	Univariate F
	V8	7.0792	2.2459
	V9	4.9177	1.1988
	V10	6.0794	1.6082
	V11	1.5237	0.3256
	V12	2.5517	0.7495

Manova Table B cont.

Cell Means

Three Way Interaction for V1 to V12

Variable	Sex	Glv	Ach	Mor	For	Dif
V1	Male	HSFR	4.00	5.00	4.00	4.00
		HSJR	4.00	4.89	4.75	4.00
		COLL	6.67	6.00	8.20	5.50
	Female	HSFR	6.25	7.57	5.80	6.83
		HSJR	7.50	6.13	5.00	4.80
		COLL	6.22	6.14	6.60	7.60
V2	Male	HSFR	3.25	3.83	4.80	4.80
		HSJR	6.00	6.56	4.75	7.33
		COLL	7.67	6.00	5.20	4.50
	Female	HSFR	6.25	6.00	7.00	5.83
		HSJR	5.00	7.75	8.00	7.40
		COLL	5.89	5.57	5.20	5.40
V3	Male	HSFR	7.25	6.33	8.00	6.20
		HSJR	7.00	5.89	6.00	7.00
		COLL	8.67	8.00	5.80	6.50
	Female	HSFR	6.50	6.71	7.40	7.00
		HSJR	5.50	6.00	8.00	4.40

Manova Table B cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
		COLL	6.00	6.00	6.80	4.60
V4	Male	HSFR	7.25	6.67	9.00	6.20
		HSJR	8.50	5.33	6.50	6.00
		COLL	7.00	6.50	4.80	4.50
	Female	HSFR	7.75	7.29	8.00	6.17
		HSJR	5.50	7.75	7.00	7.00
		COLL	6.22	6.71	5.60	5.00
V5	Male	HSFR	7.25	5.00	5.20	5.00
		HSJR	7.50	6.00	6.25	6.67
		COLL	6.67	4.00	4.40	6.00
	Female	HSFR	7.75	5.43	6.80	5.50
		HSJR	6.50	7.00	7.00	7.80
		COLL	4.56	7.14	6.80	5.20
V6	Male	HSFR	5.25	5.33	6.20	6.80
		HSJR	3.50	4.78	3.75	4.67
		COLL	5.33	5.50	6.80	7.50

Manova Table B cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
	Female	HSFR	4.25	6.43	6.20	5.83
		HSJR	4.50	4.13	6.00	2.80
		COLL	6.56	4.57	5.60	5.20
V7	Male	HSFR	5.00	4.33	6.40	4.40
		HSJR	6.00	4.44	5.50	5.67
		COLL	7.33	5.00	5.40	4.50
	Female	HSFR	7.75	6.43	7.20	6.33
		HSJR	5.50	5.88	8.00	5.80
		COLL	6.56	8.00	6.80	4.60
V8	Male	HSFR	6.00	6.00	6.40	5.40
		HSJR	3.50	6.44	4.75	4.33
		COLL	5.00	5.50	5.20	4.50
	Female	HSFR	5.25	4.86	3.20	6.33
		HSJR	5.50	4.13	7.00	5.40
		COLL	6.78	6.71	4.40	4.00
V9	Male	HSFR	5.50	5.17	4.60	6.00
		HSJR	3.50	5.22	4.50	4.33
		COLL	8.33	6.00	7.00	5.00

Manova Table B cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
	Female	HSFR	5.00	5.43	4.80	4.67
		HSJR	6.00	3.38	3.50	5.00
		COLL	6.44	5.29	7.40	5.80
V10	Male	HSFR	6.50	6.17	6.20	5.00
		HSJR	4.50	7.22	5.25	5.00
		COLL	5.67	3.50	4.80	6.00
	Female	HSFR	6.25	5.43	6.40	5.50
		HSJR	5.00	4.75	7.50	6.60
		COLL	6.00	5.29	3.80	5.00
V11	Male	HSFR	5.75	5.33	6.60	5.80
		HSJR	6.50	5.67	5.50	5.00
		COLL	5.67	5.50	7.00	6.00
	Female	HSFR	6.00	6.29	6.40	6.17
		HSJR	5.00	4.38	6.00	3.80
		COLL	6.00	4.57	6.60	4.00
V12	Male	HSFR	5.50	4.67	3.60	5.80
		HSJR	4.50	4.67	5.75	4.67
		COLL	7.33	4.00	5.80	6.00

Manova Table B cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
	Female	HSFR	5.75	6.29	5.80	4.00
		HSJR	4.50	6.00	6.00	6.00
		COLL	6.11	4.43	5.40	4.80

Manova Table C

Blocking for Main Effects for Main Grid Indices - EGOR

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV	1.9786	16	168	.0171
SEX	2.4545	8	84	.0194

Effect	Variable	MS	Univariate F
GLV	SF2	0.0605	1.3850
	SF3	0.1885	2.5184
	SSXID	0.2588	2.5105
	INT	1112.0946	3.6230 *
	CST	0.0000	0.7748
	EXTSF	0.6204	2.2840
	EXTID	0.4732	1.9859
	EXTOT	1.3292	3.8540 *
SEX	SF2	0.0034	0.0776
	SF3	0.3438	4.5940 *
	SSXID	0.4689	4.5489 *
	INT	1458.7051	4.7484 *
	CST	0.0000	0.7789
	EXTSF	0.5871	2.1617
	EXTID	0.3025	1.2693
	EXTOT	0.5344	1.5494

Manova Table C cont.

Blocking for Main Effects for Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
EGOR	1.8332	24	244.2268	.0122
GLV	1.9801	16	168	.0170

Effect	Variable	MS	Univariate F
EGOR	SF2	0.0288	0.6595
	SF3	0.1038	1.3875
	SSXID	0.2634	2.5548
	INT	156.0963	0.5049
	CST	0.0000	1.1503
	EXTSF	0.1209	0.4450
	EXTID	0.0430	0.1803
	EXTOT	1.2763	3.7006 *
GLV	SF2	0.0484	1.1087
	SF3	0.2285	3.0530
	SSXID	0.2202	2.1365
	INT	1189.6449	3.8726 *
	CST	0.0000	1.1442
	EXTSF	0.5653	2.0813
	EXTID	0.4998	2.0973
	EXTOT	0.9526	2.7620

Manova Table C cont.

Blocking for Main Effects for Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
SEX	3.0816	8	84	.0043
EGOR	1.5627	16	168	.0840

Effect	Variable	MS	Univariate F
SEX	SF2	0.0135	0.3093
	SF3	0.4632	6.1904 *
	SSXID	0.5246	5.0890 *
	INT	2074.3329	6.7525 *
	CST	0.0000	1.1729
	EXTSF	0.8465	3.1167
	EXTID	0.3155	1.3237
	EXTOT	0.9798	2.8410
EGOR	SF2	0.0158	1.0475
	SF3	0.1510	2.0178
	SSXID	0.0682	0.6619
	INT	284.2810	0.9254
	CST	0.0000	1.5594
	EXTSF	0.0459	0.1689
	EXTID	0.0626	0.2625
	EXTOT	1.0581	3.0680

Manova Table C cont.

Main Effects for Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
EGOR	1.8151	24	244.2268	.0135
SEX	2.4055	8	84	.0218
GLV	1.6283	16	168	.0663

Effect	Variable	MS	Univariate F
EGOR	SF2	0.0240	0.5505
	SF3	0.1135	1.5173
	SSXID	0.2569	2.4922
	INT	185.7739	0.6047
	CST	0.0000	1.3252
	EXTSF	0.0825	0.3038
	EXTID	0.0656	0.2754
	EXTOT	1.1556	3.3507 *
SEX	SF2	0.0133	0.3033
	SF3	0.2929	3.9141
	SSXID	0.5267	5.1.91 *
	INT	1397.4177	4.5489 *
	CST	0.0000	0.5649
	EXTSF	0.5822	2.1435
	EXTID	0.3174	1.3318

Manova Table C cont.

Main Effects for Main Grid Indices

Effect	Variable	MS	Univariate F
	EXTOT	0.9256	2.6837
GLV	SF2	0.0447	1.0226
	SF3	0.1376	1.8386
	SSXID	0.2290	2.2215
	INT	735.9327	2.3956
	CST	0.0000	0.6527
	EXTSF	0.5001	1.8411
	EXTID	0.5006	2.1006
	EXTOT	1.0677	3.0958

Manova Table C cont.

Cell Means

Main Effects for Main Grid Indices

Effect	Level	Variable							
		SF2	SF3	SSXID	INT	CST	EXTSF	EXTID	EXTOT
EGOR	Ach	.80	.70	.52	40.58	1.00	1.08	1.39	1.17
	Mor	.72	.72	.65	38.69	.99	.98	1.38	1.22
	For	.77	.74	.72	36.57	1.00	.91	1.33	.82
	Dif	.73	.85	.53	34.31	1.00	.94	1.30	.88
SEX	Male	.74	.68	.56	32.44	.99	1.06	1.29	1.10
	Female	.76	.81	.69	41.01	1.00	.89	1.39	.91
GLV	HSFR	.73	.71	.69	34.07	1.00	1.07	1.23	1.12
	HSJR	.73	.71	.53	34.33	.99	.98	1.44	1.08
	COLL	.80	.83	.65	43.54	1.00	.82	1.39	.78

Manova Table C cont.

Blocking for Two Way Interactions for Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV X SEX	1.4867	16	168	.1097
GLV X EGOR	1.6673	48	417.3775	.0049
SEX X EGOR	1.2047	24	244.2268	.2382
GLV X SEX	1.4724	16	168	.1152
GLV X EGOR	1.6084	48	417.3775	.0082
SEX X EGOR	1.2916	24	244.2268	.1696

Effect	Variable	MS	Univariate F
GLV X SEX	SF2	0.0913	2.0894
	SF3	0.3011	4.0235 *
	SSXID	0.1273	1.2346
	INT	881.7217	2.8702
	CST	0.0000	0.4472
	EXTSF	0.0711	0.2617
	EXTID	0.2854	1.1977
	EXTOT	0.0275	0.0798
GLV X EGOR	SF2	0.0736	1.6848
	SF3	0.0676	0.9038
	SSXID	0.3475	3.3707 **

Manova Table C cont.

Effect	Variable	MS	Univariate F
	INT	655.8666	2.1350
	CST	0.0001	2.8205 *
	EXTSF	0.2153	0.7926
	EXTID	0.3616	1.5176
	EXTOT	0.2610	0.7568
SEX X EGOR	SF2	0.0223	0.1094
	SF3	0.1194	1.5949
	SSXID	0.0569	0.5517
	INT	570.7139	1.8578
	CST	0.0000	1.4799
	EXTSF	0.2478	0.9125
	EXTID	0.1531	0.6424
	EXTOT	0.2083	0.6039
GLV X SEX	SF2	0.0863	1.9763
	SF3	0.3161	4.2238 *
	SSXID	0.1037	1.0055
	INT	733.9825	2.3893
	CST	0.0000	0.2484
	EXTSF	0.0934	0.3437
	EXTID	0.3233	1.3568
	EXTOT	0.0029	0.0084

Manova Table C cont.

Effect	Variable	MS	Univariate F
GLV X EGOR	SF2	0.0789	1.8056
	SF3	0.0535	0.7145
	SSXID	0.3398	3.2967 **
	INT	644.8163	2.0990
	CST	0.0001	3.0021 *
	EXTSF	0.1766	0.6503
	EXTID	0.3493	1.4656
	EXTOT	0.2400	0.6960
SEX X EGOR	SF2	0.0164	0.3756
	SF3	0.0889	1.1881
	SSXID	0.0653	0.6339
	INT	542.1528	1.7648
	CST	0.0001	2.2607
	EXTSF	0.3300	1.2149
	EXTID	0.0526	0.2206
	EXTOT	0.1616	0.4685

Manova Table C Cont.

Two Way Interactions for Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
SEX X EGOR	1.2596	24	244.2268	.1929
GLV X EGOR	1.6970	48	417.3775	.0037
GLV X SEX	1.5222	16	168	.0970

Effect	Variable	MS	Univariate F
SEX X EGOR	SF2	0.0149	0.3409
	SF3	0.0831	1.1101
	SSXID	0.0333	0.3230
	INT	304.2376	0.9904
	CST	0.0001	2.2600
	EXTSF	0.3482	1.2818
	EXTID	0.0910	0.3818
	EXTOT	0.1161	0.3366
GLV X EGOR	SF2	0.0716	1.6381
	SF3	0.0445	0.5946
	SSXID	0.3436	3.3327 **
	INT	571.8748	1.8616
	CST	0.0001	3.2169 **
	EXTSF	0.2580	0.9499

Manova Table C cont.

Effect	Variable	MS	Univariate F
	EXTID	0.3180	1.3343
	EXTOT	0.2231	0.6470
GLV X SEX	SF2	0.0742	1.6990
	SF3	0.3191	4.2643 *
	SSXID	0.1207	1.1704
	INT	470.7980	1.5326
	CST	0.0000	0.2413
	EXTSF	0.2098	0.7723
	EXTID	0.3816	1.6013
	EXTOT	0.0642	0.1860

Manova Table C cont.

Cell Means

Two Way Interactions for Main Grid Indices

Effect	Variable	Sex	Ach	Mor	For	Dif
SEX X EGOR	SF2	Male	.74	.67	.77	.74
		Female	.86	.74	.77	.72
	SF3	Male	.59	.56	.68	.90
		Female	.83	.79	.81	.82
	SSXID	Male	.44	.46	.67	.50
		Female	.62	.74	.76	.54
	INT	Male	42.74	24.76	33.60	27.85
		Female	37.82	44.74	39.68	38.46
	CST	Male	1.00	.99	.99	1.00
		Female	.99	1.00	1.00	1.00
	EXTSF	Male	1.33	1.06	.96	1.03
		Female	.75	.95	.86	.88

Manova Table C cont.

Effect	Variable	Sex	Ach	Mor	For	Dif
	EXTID	Male	1.33	1.33	1.35	1.06
		Female	1.47	1.40	1.32	1.46
	EXTOT	Male	1.33	1.50	.84	1.06
		Female	.95	1.10	.79	.77
GLV X EGOR	Variable	Glv	Ach	Mor	For	Dif
	SF2	HSFR	.71	.76	.69	.77
		HSJR	.83	.62	.76	.78
		COLL	.88	.80	.83	.59
	SF3	HSFR	.70	.64	.67	.89
		HSJR	.57	.73	.62	.84
		COLL	.80	.84	.85	.80
	SSXID	HSFR	.75	.69	.64	.74
		HSJR	.37	.55	.59	.53
		COLL	.30	.76	.82	.16

Manova Table C cont.

Effect	Variable	Glv	Ach	Mor	For	Dif
	INT	HSFR	31.75	39.72	30.25	33.62
		HSJR	59.01	32.84	24.85	34.79
		COLL	38.22	45.78	46.26	34.43
	CST	HSFR	.99	1.00	.99	1.00
		HSJR	.98	1.00	.99	1.00
		COLL	1.00	.99	1.00	1.00
	EXTSF	HSFR	1.21	.94	1.03	1.22
		HSJR	1.08	1.17	.86	.82
		COLL	.90	.76	.85	.74
	EXTID	HSFR	1.49	1.38	1.37	1.19
		HSJR	.85	1.49	1.55	1.35
		COLL	1.66	1.34	1.25	1.85
	EXTOT	HSFR	1.28	1.38	.82	1.06
		HSJR	1.30	1.37	.96	.76
		COLL	.90	.74	.75	.82

Manova Table C cont.

Effect	Variable	Sex	HSFR	HSJR	COLL
GLV X SEX	SF2	Male	.67	.77	.81
		Female	.78	.68	.79
	SF3	Male	.58	.66	.89
		Female	.83	.78	.81
	SSXID	Male	.57	.46	.67
		Female	.80	.61	.65
	INT	Male	26.22	29.95	46.53
		Female	41.21	38.97	42.16
	CST	Male	.99	.99	1.00
		Female	1.00	1.00	1.00
	EXTSF	Male	1.10	1.09	.94
		Female	1.04	.87	.77
	EXTID	Male	1.08	1.48	1.33
		Female	1.37	1.40	1.41

Manova Table C cont.

Effect	Variable	Sex	HSFR	HSJR	COLL
	EXTOT	Male	1.20	1.17	.82
		Female	1.04	.99	.76

Manova Table C cont.

Three Way Interactions

Main Grid Indices

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV X SEX X EGOR	0.9135	48	417.3775	.6395

Effect	Variable	MS	Univariate F
GLV X SEX X EGOR	SF2	0.0693	1.5871
	SF3	0.0413	0.5518
	SSXID	0.1985	1.9260
	INT	77.7903	0.2532
	CST	0.0000	1.7707
	EXTSF	0.2093	0.7704
	EXTID	0.0944	0.3961
	EXTOT	0.1696	0.4917

Manova Table C cont.

Cell Means

Three Way Interactions for Main Grid Indices

Variable	Sex	Glv	Ach	Mor	For	Dif
SF2	Male	HSFR	.60	.72	.63	.74
		HSJR	.84	.57	.80	.94
		COLL	.88	.97	.85	.18
	Female	HSFR	.86	.78	.74	.81
		HSJR	.83	.66	.61	.71
		COLL	.88	.77	.81	.69
SF3	Male	HSFR	.57	.33	.51	.88
		HSJR	.45	.65	.61	.97
		COLL	.87	.98	.89	.78
	Female	HSFR	.88	.78	.84	.91
		HSJR	.94	.78	.63	.79
		COLL	.75	.82	.82	.81
SSXID	Male	HSFR	.66	.50	.51	.66
		HSJR	.17	.37	.59	.59
		COLL	.41	.79	.88	-.57
	Female	HSFR	.89	.77	.78	.88
		HSJR	.97	.67	.60	.51

Manova Table C cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
		COLL	.23	.76	.78	.35
INT	Male	HSFR	29.79	19.68	35.90	29.04
		HSJR	57.36	23.44	24.51	26.10
		COLL	46.68	51.69	48.28	37.11
	Female	HSFR	34.35	48.63	34.60	41.25
		HSJR	63.93	39.56	26.03	38.52
		COLL	32.58	44.93	44.91	36.26
CST	Male	HSFR	1.00	.99	.99	1.00
		HSJR	.99	.99	1.00	1.00
		COLL	.99	.99	1.00	1.00
	Female	HSFR	.99	1.00	.99	1.00
		HSJR	.98	1.00	.99	1.00
		COLL	1.00	.99	1.00	1.00
EXTSF	Male	HSFR	1.55	.92	1.02	.99
		HSJR	1.25	1.21	.96	1.05
		COLL	1.01	.84	.89	1.22
	Female	HSFR	.75	.95	1.04	1.59
		HSJR	.57	1.15	.50	.73

Manova Table C cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
		COLL	.82	.75	.81	.62
EXTID	Male	HSFR	1.41	.94	1.15	.84
		HSJR	1.24	1.67	1.51	1.38
		COLL	1.34	1.19	1.37	1.16
	Female	HSFR	1.49	1.38	1.37	1.19
		HSJR	.85	1.49	1.55	1.35
		COLL	1.66	1.34	1.25	1.85
EXTOT	Male	HSFR	1.51	1.74	.78	1.11
		HSJR	1.49	1.45	.95	.94
		COLL	.73	.77	.80	1.18
	Female	HSFR	.97	1.22	.86	.99
		HSJR	.74	1.32	.99	.69
		COLL	1.01	.74	.72	.73

Manova Table D

Blocking for Main Effects for

Main Grid Indices and V1 to V12 for EGOR

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV	3.4194	40	144	.0001
SEX	3.4081	20	72	.0001

Effect	Variable	MS	Univariate F
GLV	SF2	0.0605	1.3850
	SF3	0.1185	2.5184
	SSXID	0.2588	2.5105
	INT	1112.9846	3.6230 *
	CST	0.0000	0.7748
	EXTSF	0.6204	2.2840
	EXTID	0.4732	1.9859
	EXTOT	1.3292	3.8540 *
	V1	22.8488	6.7329 **
	V2	22.8219	7.0713 **
	V3	9.0706	2.5119
	V4	18.7151	4.9011 **
	V5	12.9375	3.2699 *
	V6	32.6603	10.9532 ***

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V7	5.4430	1.2824
	V8	1.1598	0.3835
	V9	35.5897	8.3176 ***
	V10	7.1856	1.8490
	V11	9.3794	2.1206
	V12	0.9515	0.2703
SEX	SF2	0.0034	0.0776
	SF3	0.3438	4.5940 *
	SSXID	0.4689	4.5489 *
	INT	1458.7051	4.7484 *
	CST	0.0000	0.7789
	EXTSF	0.5871	2.1617
	EXTID	0.3025	1.2693
	EXTOT	0.5344	1.5494
	V1	36.6929	10.8123 **
	V2	30.6996	9.5122 **
	V3	6.7202	1.8611
	V4	6.1451	1.6093
	V5	14.2601	3.6042
	V6	3.9947	1.3397
	V7	46.2263	10.8910 **

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V8	2.4496	0.8100
	V9	6.3306	1.4795
	V10	0.5430	0.1397
	V11	6.5855	1.4889
	V12	3.0783	0.8744

Manova Table D cont.

Effect	Manova F	Effect D. F.	Error D. F.	p
EGOR	1.8492	60	215.6431	.0008
GLV	3.1226	40	144	.0001

Effect	Variable	MS	Univariate F
EGOR	SF2	0.0288	0.6595
	SF3	0.1038	1.3876
	SSXID	0.2634	2.5548
	INT	155.0963	0.5049
	CST	0.0000	1.1503
	EXTSF	0.1209	0.4450
	EXTID	0.0430	0.1803
	EXTOT	1.2763	3.7006 *
	V1	1.3713	0.4041
	V2	1.8787	0.5821
	V3	14.1349	3.9144 *
	V4	6.3024	1.6506
	V5	11.6817	2.9525
	V6	6.7181	2.2530
	V7	6.7134	1.5817
	V8	12.4729	4.1246 **

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V9	6.4111	1.4983
	V10	4.4441	1.1436
	V11	7.2595	1.6413
	V12	3.9224	1.1142
GLV	SF2	0.0484	1.1087
	SF3	0.2285	3.0530
	SSXID	0.2202	2.1365
	INT	1189.6449	3.8726 *
	CST	0.0000	1.1442
	EXTSF	0.5653	2.0813
	EXTID	0.4998	2.0973
	EXTOT	0.9526	2.7620
	V1	24.2565	7.1477 **
	V2	21.4296	6.6399 **
	V3	8.4870	2.3503
	V4	16.3413	4.2795 *
	V5	10.2826	2.5989
	V6	27.9920	9.3876 ***
	V7	4.1998	0.9895
	V8	2.3695	0.7836
	V9	29.7857	6.9612 **

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V10	8.3273	2.1428
	V11	7.9384	1.7948
	V12	0.8007	0.2274

Manova Table D cont.

Effect	Manova F	Effect D. F.	Error D. F.	p
SEX	3.6613	20	72	.0001
EGOR	1.5091	40	144	.0417

Effect	Variable	MS	Univariate F
SEX	SF2	0.0135	0.3093
	SF3	0.4632	6.1904 *
	SSXID	0.5246	5.0890 *
	INT	1074.3329	6.7525 *
	CST	0.0000	1.1729
	EXTSF	0.8465	3.1167
	EXTID	0.3155	1.3237
	EXTOT	0.9798	2.8410
	V1	50.7452	14.9532 ***
	V2	25.0531	7.7627 **
	V3	6.9534	1.9206
	V4	2.5959	0.6798
	V5	9.2565	2.3395
	V6	1.2924	0.4334
	V7	52.1531	12.2874 ***
	V8	1.7338	0.5734

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V9	1.1131	0.2601
	V10	1.8655	0.4800
	V11	5.5867	1.2631
	V12	3.6003	1.0227
EGOR	SF2	0.0458	1.0475
	SF3	0.1510	2.0178
	SSXID	0.0682	0.6619
	INT	284.2810	0.9254
	CST	0.0000	1.5594
	EXTSF	0.0459	0.1689
	EXTID	0.0626	0.2625
	EXTOT	1.0581	3.0680
	V1	0.1563	0.0461
	V2	1.0983	0.3403
	V3	13.6585	3.7825 *
	V4	4.7660	1.2481
	V5	6.8089	1.7209
	V6	4.8762	1.6253
	V7	12.3830	2.9175
	V8	11.4956	3.8014 *
	V9	1.7567	0.4105

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V10	5.8217	1.4981
	V11	7.1342	1.6130
	V12	6.9040	1.9611

Manova Table D cont.

Main Effects

Main Grid Indices and V1 to V12

Effect	Manova F	Effect D. F.	Error D. F.	p
EGOR	1.6257	60	215.6431	.0064
SEX	3.3360	20	72	.0001
GLV	3.2310	40	144	.0001

Effect	Variable	MS	Univariate F
EGOR	SF2	0.0240	0.5505
	SF3	0.1135	1.5173
	SSXID	0.2569	2.4922
	INT	185.7739	0.6047
	CST	0.0000	1.3252
	EXTSF	0.0825	0.3083
	EXTID	0.0656	0.2754
	EXTOT	1.1556	3.3507 *
	V1	0.6483	0.1910
	V2	0.3693	0.1144
	V3	12.7901	3.5420 *
	V4	4.8575	1.2721
	V5	10.5092	2.6562

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V6	3.4194	1.1467
	V7	7.5611	1.7814
	V8	14.4307	4.7720 **
	V9	2.4762	0.5787
	V10	5.0251	1.2931
	V11	6.0726	1.3730
	V12	4.5290	1.2865
SEX	SF2	0.0133	0.3033
	SF3	0.2929	3.9141
	SSXID	0.5267	5.1091 *
	INT	1397.4177	4.5489 *
	CST	0.0000	0.5649
	EXTSF	0.5822	2.1435
	EXTID	0.3174	1.3318
	EXTOT	0.9256	2.6837
	V1	31.7080	9.3435 **
	V2	28.9560	8.9720 **
	V3	3.8527	1.0669
	V4	6.5579	1.7174
	V5	16.0526	4.0572 *
	V6	3.4350	1.1520

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V7	51.2556	12.0760 ***
	V8	5.9035	1.9522
	V9	6.1340	1.4336
	V10	0.0027	0.0007
	V11	5.9068	1.3355
	V12	5.1999	1.4770
GLV	SF2	0.0447	1.0226
	SF3	0.1376	1.8386
	SSXID	0.2290	2.2215
	INT	735.9327	2.3956
	CST	0.0000	0.6527
	EXTSF	0.5001	1.8411
	EXTID	0.5006	2.1006
	EXTOT	1.0677	3.0958
	V1	16.6293	4.9002 **
	V2	24.7243	7.6608 ***
	V3	7.5196	2.0824
	V4	21.3777	5.5984 **
	V5	18.0439	4.5605 *
	V6	32.5226	10.9070 ***
	V7	1.2131	0.2858

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V8	1.3117	0.4338
	V9	38.4600	8.9885 ***
	V10	8.3211	2.1180
	V11	9.1432	2.0672
	V12	0.5422	0.1540

Manova Table D cont.

Cell Means

Main Effects for V1 to V12

Effect	Level	Variables					
		V1	V2	V3	V4	V5	V6
EGOR	Ach	5.38	5.44	6.56	7.38	7.00	5.31
	Mor	5.97	6.09	6.55	6.85	5.88	5.39
	For	5.88	5.74	6.86	6.23	5.51	5.72
	Dif	5.78	6.00	5.22	6.35	6.61	4.57
SEX	Male	5.06	5.32	6.68	6.42	5.72	5.46
	Female	6.40	6.26	6.18	6.72	6.29	5.25
GLV	HSFR	5.57	5.26	6.90	7.24	5.86	5.86
	HSJR	5.17	6.77	5.97	6.60	6.74	4.20
	COLL	6.68	5.66	6.24	5.87	5.61	5.82

Manova Table D cont.

Effect	Level	Variables					
		V7	V8	V9	V10	V11	V12
EGOR	Ach	6.50	6.00	5.06	6.44	5.50	5.56
	Mor	6.15	6.09	5.30	5.52	5.82	4.85
	For	6.00	4.91	5.81	5.60	5.93	5.40
	Dif	5.17	4.91	4.74	5.30	4.78	5.70
SEX	Male	5.18	5.54	5.46	5.78	5.86	5.12
	Female	6.54	5.29	5.26	5.52	5.42	5.48
GLV	HSFR	5.95	5.43	5.14	5.88	6.05	5.17
	HSJR	5.54	5.20	4.46	5.89	5.06	5.34
	COLL	6.32	5.50	6.39	5.13	5.63	5.47

Manova Table D cont.

Blocking for Two Way Interactions

Main Grid Indices and V1 to V12

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV X SEX	1.3902	40	144	.0829
GLV X EGOR	1.3215	120	423.5794	.0239
SEX X EGOR	1.4337	60	215.6431	.0331
GLV X SEX	1.4581	40	144	.0564
GLV X EGOR	1.3251	120	423.5794	.0228
SEX X EGOR	1.3771	60	235.6431	.0515

Effect	Variable	MS	Univariate F
GLV X SEX	SF2	0.0913	2.0890
	SF3	0.3011	4.0235 *
	SSXID	0.1237	1.2346
	INT	881.7217	2.8701
	CST	0.0000	0.4472
	EXTSF	0.0711	0.2617
	EXTID	0.2854	1.1977
	EXTOT	0.0275	0.0798
	V1	19.5572	5.7630 **
	V2	11.8104	3.6594 *

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V3	2.0128	0.5574
	V4	4.0054	1.0489
	V5	0.0925	0.0234
	V6	0.7474	0.2507
	V7	1.2531	0.2952
	V8	6.4101	2.1197
	V9	0.1291	0.0302
	V10	0.6707	0.7126
	V11	4.3674	0.9874
	V12	5.8002	1.6476
GLV X EGOR	SF2	0.0736	1.6848
	SF3	0.0676	0.9038
	SSXID	0.3475	3.3707 **
	INT	655.8666	2.1350
	CST	0.0001	2.8205 *
	EXTSF	0.2153	0.7926
	EXTID	0.3616	1.5176
	EXTOT	0.2610	0.7568
	V1	1.4883	0.4386
	V2	5.5949	1.7336
	V3	0.5500	0.1523

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V4	5.2179	1.3665
	V5	5.9291	1.4986
	V6	3.7292	1.2507
	V7	2.7130	0.6392
	V8	6.0508	2.0009
	V9	2.6213	0.6126
	V10	3.1607	0.8133
	V11	1.9385	0.4384
	V12	3.8874	1.1042
SEX X EGOR	SF2	0.0223	0.5094
	SF3	0.1194	1.5949
	SSXID	0.0469	0.5517
	INT	570.7139	1.8578
	CST	0.0000	1.4799
	EXTSF	0.2478	0.9125
	EXTID	0.1531	0.6424
	EXTOT	0.2083	0.6039
	V1	5.0676	1.4933
	V2	7.8312	2.4265
	V3	2.8159	0.7798
	V4	0.8893	2.5898

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V5	1.7384	0.4394
	V6	9.3632	3.1401 *
	V7	1.6677	0.3929
	V8	3.3128	1.0955
	V9	3.3116	0.7740
	V10	0.9742	0.2507
	V11	4.1257	0.9328
	V12	1.9733	0.5605
GLV X SEX	SF2	0.0863	1.9763
	SF3	0.3161	4.2238 *
	SSXID	0.1037	1.0055
	INT	733.9825	2.3893
	CST	0.0000	0.4284
	EXTSF	0.0394	0.3437
	EXTID	0.3233	1.3568
	EXTOT	0.0019	0.0084
	V1	17.4706	5.1481 **
	V2	18.4591	5.7195 **
	V3	2.6340	0.7295
	V4	3.3468	0.8765
	V5	0.1348	0.0341

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V6	2.5373	0.8509
	V7	1.4663	0.3455
	V8	6.9668	2.3038
	V9	0.3762	0.0879
	V10	0.5619	0.1446
	V11	3.9158	0.8853
	V12	6.1506	1.7471
GLV X EGOR	SF2	0.0789	1.8056
	SF3	0.0535	0.7145
	SSXID	0.3398	3.2967 **
	INT	644.8163	2.0090
	CST	0.0001	3.0021 *
	EXTSF	0.1766	0.6503
	EXTID	0.3493	1.4656
	EXTOT	0.2400	0.6960
	V1	2.0018	0.5899
	V2	4.8854	1.5137
	V3	0.5585	0.1574
	V4	5.2362	1.3713
	V5	5.9277	1.4982
	V6	4.2296	1.4185

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V7	2.3249	0.5478
	V8	7.1426	2.3619 *
	V9	2.5730	0.6013
	V10	2.8909	0.7439
	V11	2.4884	0.5626
	V12	3.2954	0.9361
SEX X EGOR	SF2	0.0164	0.3756
	SF3	0.0889	1.1881
	SSXID	0.0653	0.6339
	INT	542.1528.	1.7648.
	CST	0.0001	2.2607
	EXTSF	0.3300	1.2149
	EXTID	0.0526	0.2206
	EXTOT	0.1616	0.4685
	V1	5.1628	1.5213
	V2	5.9828	1.8537
	V3	2.8685	0.7944
	V4	2.0376	2.1049
	V5	2.8470	0.7196
	V6	8.6200	2.8909 *
	V7	0.8784	0.2070

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V8	1.7465	0.5776
	V9	2.5566	0.5975
	V10	0.4585	0.1180
	V11	5.0336	1.1381
	V12	2.4906	0.7075

Manova Table D cont.

Two Way Interactions

Main Grid Indices and V1 to V12

Effect	Manova F	Effect D. F.	Error D. F.	p
SEX X EGOR	1.3795	60	215.6431	.0505
GLV X EGOR	1.2558	120	423.5794	.0532
GLV X SEX	1.4450	40	144	.0608

Effect	Variable	MS	Univariate F
SEX X EGOR	SF2	0.0149	0.3409
	SF3	0.0831	1.1101
	SSXID	0.0333	0.3230
	INT	304.2376	0.9904
	CST	0.0001	2.2600
	EXTSF	0.3483	1.2818
	EXTID	0.0910	0.3818
	EXTOT	0.1161	0.3366
	V1	3.7091	1.0930
	V2	9.8290	3.0455 *
	V3	3.7012	1.0250
	V4	5.9371	1.5548
	V5	2.6670	0.6741

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V6	9.0478	3.0344 *
	V7	1.1426	0.2692
	V8	2.7425	0.9009
	V9	2.3978	0.5604
	V10	0.3107	0.800
	V11	4.5088	1.0194
	V12	3.1090	0.8831
GLV X EGOR	SF2	0.0716	1.6381
	SF3	0.0445	0.5946
	SSXID	0.3436	3.3327 **
	INT	571.8748	1.8616
	CST	0.0001	3.2169 **
	EXTSF	0.2580	0.9499
	EXTID	0.3180	1.3343
	EXTOT	0.2231	0.6470
	V1	1.5046	0.4434
	V2	4.3776	1.3564
	V3	0.7856	0.2176
	V4	3.4613	0.9065
	V5	6.3793	1.6123
	V6	2.9749	0.9977

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V7	2.3794	0.5606
	V8	5.5711	1.8423
	V9	2.0821	0.4866
	V10	2.8652	0.7373
	V11	2.2806	0.5156
	V12	4.3385	1.2324
GLV X SEX	SF2	0.0742	1.6990
	SF3	0.3191	4.2643 *
	SSXID	0.1207	1.1704
	INT	470.7980	1.5326
	CST	0.0000	0.2413
	EXTSF	0.0298	0.7723
	EXTID	0.3816	1.6013
	EXTOT	0.0624	0.1860
	V1	15.5754	4.5896 *
	V2	20.0818	6.2223 **
	V3	2.3614	0.6540
	V4	2.3326	0.6108
	V5	0.9654	0.2440
	V6	1.2368	0.4148
	V7	2.7159	0.6399

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V8	7.4285	2.4565
	V9	0.3387	0.0792
	V10	1.2455	0.3205
	V11	3.0592	0.6917
	V12	8.1602	2.3179

Manova Table D cont.

Cell Means

Two Way Interactions for V1 to V12

Effect	Variable	Sex	Ach	Mor	For	Dif
SEX X EGOR	V1	Male	4.44	5.30	5.50	4.33
		Female	6.57	6.26	6.29	6.71
	V2	Male	5.44	6.00	4.82	5.67
		Female	5.43	6.13	6.71	6.21
	V3	Male	7.00	6.40	6.91	6.11
		Female	6.00	6.61	6.81	4.64
	V4	Male	7.33	5.80	6.64	5.67
		Female	7.43	7.30	5.81	6.79
	V5	Male	7.00	5.80	5.18	5.67
		Female	7.00	5.91	5.86	7.21
	V6	Male	4.89	5.40	5.45	6.11
		Female	5.86	5.39	6.00	3.57

Manova Table D cont.

Effect	Variable	Sex	Ach	Mor	For	Dif
	V7	Male	6.11	4.80	5.18	4.67
		Female	7.00	6.74	6.86	5.50
	V8	Male	5.56	6.30	5.18	5.56
		Female	6.57	6.00	4.62	4.50
	V9	Male	4.56	5.50	5.82	5.44
		Female	5.71	5.22	5.81	4.29
	V10	Male	6.33	6.00	5.68	5.22
		Female	6.57	5.30	5.52	5.36
	V11	Male	5.33	5.50	6.32	5.67
		Female	5.71	5.96	5.52	4.21
	V12	Male	5.67	4.10	5.14	5.67
		Female	5.43	5.17	5.67	5.71

Manova Table D cont.

Effect	Variable	Glv	Ach	Mor	For	Dif
EGOR X GLV	V1	HSFR	5.29	6.23	5.29	5.25
		HSJR	5.00	5.42	4.78	5.30
		COLL	5.80	6.38	6.80	7.60
	V2	HSFR	5.14	4.77	5.71	5.38
		HSJR	5.75	7.83	5.78	6.80
		COLL	5.60	5.63	5.75	5.40
	V3	HSFR	7.00	7.08	7.21	6.00
		HSJR	5.75	6.42	6.78	4.80
		COLL	6.60	5.88	6.65	4.80
	V4	HSFR	8.29	6.85	7.29	6.88
		HSJR	6.25	6.67	7.00	6.30
		COLL	7.00	7.13	5.15	5.60
	V5	HSFR	7.71	4.77	5.86	6.00
		HSJR	6.25	6.83	6.00	7.50
		COLL	6.60	6.25	5.05	5.80

Manova Table D cont.

Effect	Variable	Sex	Ach	Mor	For	Dif
	V6	HSFR	5.14	6.08	6.00	5.88
		HSJR	5.00	4.92	4.00	3.20
		COLL	5.80	5.00	6.30	5.20
	V7	HSFR	6.86	5.85	5.93	5.38
		HSJR	5.75	5.75	5.44	5.30
		COLL	6.60	7.25	6.30	4.60
	V8	HSFR	5.57	6.15	4.17	5.38
		HSJR	5.75	5.08	5.22	5.10
		COLL	6.80	7.50	4.90	3.80
	V9	HSFR	4.00	5.46	5.36	5.25
		HSJR	4.25	4.50	5.00	4.00
		COLL	7.20	6.25	6.50	5.40
	V10	HSFR	6.00	5.92	6.14	5.25
		HSJR	6.25	5.83	6.11	5.60
		COLL	7.20	4.38	5.00	4.80

Manova Table D cont.

Effect	Variable	Glv	Ach	Mor	For	Dif
	V11	HSFR	5.86	6.69	5.79	5.63
		HSJR	5.75	5.08	5.67	4.20
		COLL	4.80	5.50	6.15	4.60
	V12	HSFR	4.33	4.89	6.43	6.00
		HSJR	6.00	5.71	6.00	5.86
		COLL	6.33	5.00	5.17	5.25

Manova Table D cont.

Effect	Variable	Sex	HSFR	HSJR	COLL
GLV X SEX	V1	Male	4.30	4.61	7.00
		Female	6.73	5.76	6.54
	V2	Male	4.20	6.22	5.83
		Female	6.23	7.35	5.58
	V3	Male	6.90	6.22	7.00
		Female	6.91	5.71	5.88
	V4	Male	7.25	6.06	5.58
		Female	7.23	7.18	6.00
	V5	Male	5.50	6.33	5.17
		Female	6.18	7.18	5.81
	V6	Male	5.90	4.39	6.33
		Female	5.82	4.00	5.58
	V7	Male	5.00	5.06	5.67
		Female	6.82	6.06	6.62

Manova Table D cont.

Effect	Variable	Sex	HSFR	HSJR	COLL
	V8	Male	5.95	5.39	5.08
		Female	4.95	5.00	5.77
	V9	Male	5.30	4.72	6.83
		Female	5.00	4.18	6.19
	V10	Male	5.95	6.11	5.00
		Female	5.82	5.65	5.19
	V11	Male	5.85	5.61	6.25
		Female	6.23	4.47	5.35
	V12	Male	4.85	4.89	5.92
		Female	5.45	5.82	5.27

Manova Table D cont.

Three Way Interactions

Main Grid Indices and V1 to V12

Effect	Manova F	Effect D. F.	Error D. F.	p
GLV X SEX X EGOR	0.8530	120	423.5794	.8515

Effect	Variable	MS	Univariate F
GLV X SEX X EGOR	SF2	0.0693	1.5871
	SF3	0.0413	0.5518
	SSXID	0.1985	1.9260
	INT	77.7903	0.2532
	CST	0.0000	1.7707
	EXTSF	0.2093	0.7704
	EXTID	0.0944	0.3961
	EXTOT	0.1696	0.4917
	V1	3.1401	0.9253
	V2	0.7776	0.2409
	V3	1.8899	0.5234
	V4	2.1710	0.5685
	V5	1.5526	0.3924
	V6	9.3072	3.1213 **

Manova Table D cont.

Effect	Variable	MS	Univariate F
	V7	3.5726	0.8417
	V8	5.5087	1.8216
	V9	2.0992	0.4906
	V10	5.2985	1.3634
	V11	4.9081	1.1097
	V12	1.6517	0.4692

Manova Table D cont.

Cell Means

Three Way Interactions for V1 to V12

Variable	Sex	Glv	Ach	Mor	For	Dif
V1	Male	HSFR	4.25	4.50	4.43	4.00
		HSJR	3.67	5.20	4.71	4.33
		COLL	6.00	9.00	7.13	6.00
	Female	HSFR	6.67	7.00	6.14	7.33
		HSJR	9.00	5.57	5.00	5.71
		COLL	5.67	6.00	6.58	8.00
V2	Male	HSFR	4.25	4.00	3.86	4.80
		HSJR	6.00	7.40	5.14	7.00
		COLL	7.00	7.00	5.38	6.00
	Female	HSFR	6.33	5.11	7.57	6.33
		HSJR	5.00	8.14	8.00	6.71
		COLL	4.67	5.43	6.00	5.25
V3	Male	HSFR	7.50	6.50	7.29	6.20
		HSJR	5.67	6.20	6.43	6.33
		COLL	8.00	7.00	7.00	5.00
	Female	HSFR	6.33	7.33	7.14	5.67
		HSJR	6.00	6.57	8.00	4.14
		COLL	5.66	5.71	6.42	4.75

Manova Table D cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
V4	Male	HSFR	8.25	6.50	7.86	6.20
		HSJR	5.67	5.60	7.00	5.00
		COLL	8.00	4.00	5.25	5.00
	Female	HSFR	8.33	7.00	6.71	8.00
		HSJR	8.00	7.43	7.00	6.86
		COLL	6.33	7.57	5.08	5.75
V5	Male	HSFR	7.25	4.50	5.43	5.00
		HSJR	6.33	7.00	5.71	6.67
		COLL	7.50	5.00	4.50	6.00
	Female	HSFR	8.33	4.89	6.29	7.67
		HSJR	6.00	6.71	7.00	7.86
		COLL	6.00	6.43	5.42	5.75
V6	Male	HSFR	5.75	5.25	5.71	6.80
		HSJR	4.67	5.00	3.43	5.33
		COLL	3.50	8.00	4.00	5.00
	Female	HSFR	4.33	6.44	6.29	4.33
		HSJR	6.00	4.86	6.00	2.29
		COLL	7.33	4.57	5.83	5.25

Manova Table D cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
V7	Male	HSFR	6.00	4.25	5.29	4.40
		HSJR	5.33	5.00	4.71	5.67
		COLL	7.50	6.00	4.50	3.00
	Female	HSFR	8.00	6.56	6.57	7.00
		HSJR	7.00	6.29	8.00	5.14
		COLL	6.00	7.43	6.83	5.00
V8	Male	HSFR	5.75	6.50	6.14	5.40
		HSJR	5.33	6.00	4.71	6.00
		COLL	5.50	7.00	4.75	5.00
	Female	HSFR	5.33	6.00	3.29	5.33
		HSJR	7.00	4.43	7.00	4.71
		COLL	7.67	7.57	5.00	3.50
V9	Male	HSFR	3.75	6.00	5.29	6.00
		HSJR	3.67	4.80	5.43	4.00
		COLL	7.50	7.00	6.63	7.00
	Female	HSFR	4.33	5.22	5.43	4.00
		HSJR	6.00	4.29	3.50	4.00
		COLL	7.00	6.14	6.42	5.00

Manova Table D cont.

Variable	Sex	Glv	Ach	Mor	For	Dif
V10	Male	HSFR	5.75	6.25	6.57	5.00
		HSJR	7.33	6.40	5.71	5.33
		COLL	6.00	3.00	4.88	6.00
	Female	HSFR	6.33	5.78	5.71	5.67
		HSJR	3.00	5.43	7.50	5.71
		COLL	8.00	4.57	5.08	4.50
V11	Male	HSFR	5.75	4.75	6.57	5.80
		HSJR	5.67	5.80	5.57	5.33
		COLL	4.00	7.00	6.75	6.00
	Female	HSFR	6.00	7.56	5.00	5.33
		HSJR	6.00	4.57	6.00	3.71
		COLL	5.33	5.29	5.75	4.25
V12	Male	HSFR	4.75	4.50	4.43	5.80
		HSJR	5.33	3.60	5.71	4.67
		COLL	8.00	5.00	5.25	8.00
	Female	HSFR	4.33	4.89	6.43	6.00
		HSJR	6.00	5.71	6.00	5.86
		COLL	6.33	5.00	5.17	5.25

APPROVAL SHEET

The dissertation submitted by David Platt has been read and approved by the following committee:

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Ph. D. in Foundations of Education.

8/26/80
Date

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