STRUCTURAL ASPECTS OF LOEVINGER'S MODEL OF EGO DEVELOPMENT

THESIS

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The study reviews the structural and psychometric underpinnings of Loevinger's theory of ego development. It is noted that the current literature investigating the validity of Loevinger's model has not adequately addressed the structural assumptions of the theory. "Process" variables are hypothesized to vary depending on the process of structural change. Two such variables, cognitive complexity and the organization of cognitive constructs, were measured in 73 college students, staff, and faculty members in three North Texas institutions. Level of ego development, measured by the Washington University Sentence Completion Test, was assessed in each subject and the pattern of cognitive complexity and construct organization was evaluated across ego levels. Results offer only limited support for the stage model's structural assumptions. Discussion highlights several inadequacies in Loevinger's instrument and offers a direction for possible revision. Implications of the results are examined in terms of current theoretical issues.

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CHAPTER I

STRUCTURAL ASPECTS OF LOEVINGER'S MODEL OF EGO DEVELOPMENT

The notion of man as an organism who "constructs" his understanding of experience is an idea that is common to philosophy, theology, literature, and psychology (Fingarette, 1963). Kegan (1982) notes that this concept is a central axiom of the existential, phenomenological, Gestalt, perception, Piagetian, and personal construct psychologies.

The approaches undertaken to study the "meaning making" quality of human functioning, as well as what is meant by constructing meaning, have been quite varied. Fingarette (1963) describes two general categories that capture the various approaches to theorizing and describing this meaning constructive process. The first characterizes internal functioning as a "scientific process of developing logical, reliably interpretable, and systematically predictive theory." The second approach characterizes internal functioning as an "existential process of generating new vision which shall serve as the context of a new commitment" (pp. 62-63).

The first tradition is strongly represented in the cognitive developmental literature (Kohlberg, 1969; Piaget, 1948, 1952, 1968) as well as personal construct theory (Kelly, 1955). This "logico-scientific" approach is best

described by Kelly through his "man as scientist" metaphor. For Kelly (1955), the adaptive process of cognitive functioning lies in "his structured network of pathways [which] leads toward the future, so that he may anticipate it . . . man ultimately seeks to anticipate real events" (p. 49). Kegan (1982) notes that while these theories have made powerful methodological and conceptual contributions to the understanding of cognitive meaning construction, they ignore "participative" or phenomenological aspects of experience.

The second tradition has been largely espoused by the existential and phenomenological theorists (Binswanger, 1963; Maslow, 1954; May, 1958; Rogers, 1951; Yalom, 1980), as well as the neo-psychoanalytic ego psychologists and object relations theorists (Erikson, 1950; Fairbairn, 1952; Freud, 1936; Hartmann, 1939; Jacobsen, 1964; Kris, 1975; Mahler, 1968; Winnicott, 1965). These traditions have probably had the most influence on clinical and counseling psychology and tend to elevate the "ego" or "self" to a position higher than the limited role that the ego played within traditional psychoanalytic thought. These theories examine the development of self within the ongoing relations the person has with objects in the environment. Although these theories have examined more global aspects of meaning in relation to a person's entire experience, they have lacked the methodological and theoretical power to examine with any depth the internal structural aspects of meaning construction (Kegan, 1982).

Integration of these traditions would be a major step in theorizing about human functioning. In general, the cognitive developmental theorists bring forth a rich description of the process of development--how people grow. Psychoanalytic theory largely has been preoccupied with motivation, defense, and character styles--why people behave. Integration of a structural view of development with the phenomenological view of self in its relations within the environment would provide a more sophisticated understanding of the relationship between the psychological and social, the past and present, and between emotion and thought (Kegan, 1982).

Several theorists, most notably Loevinger (1976) and most recently Kegan (1982), have attempted to integrate the phenomenological experience of self with the cognitive structure of meaning making. Loevinger has postulated a model of ego development that has roots in psychoanalytic ego psychology yet incorporates a stage developmental view consistent with Piaget. Loevinger describes her conception of ego as similar to Adler's "style of life" or "schema of life" (Ansbacher & Ansbacher, 1956). She states that "the ego provides the frame of reference that structures one's world and within which one perceives the world" (Loevinger, 1976, pp. 9-10). In her model, she proposes an invariant sequence of stages, each of which incorporates and transcends the previous stages and is a qualititively different, internally consistent "world view" (Loevinger, 1976). This ego structure determines

character development, interpersonal style, cognitive style, moral thinking, and various other personal attributes. The ego is viewed as an all-encompassing "master trait" in one's personality.

The intention of this study is to examine Loevinger's (1976) theory of ego development and to determine whether it accomplishes this integration of diverse traditions. Specifically, the constructivist and organismic assumptions of neo-Piagetian psychology will be studied within Loevinger's framework to assess whether her theory actually represents a developmental progression of equilibrated structures similar to those offered by the cognitive developmental theorists. Following will be a discussion of the theoretical assumptions of Loevinger's theory, the stage model that she offers, a presentation of hypotheses and their implications, and finally, the method of study, results, and their implications.

Theory

Loevinger has offered a stage model that shares with several recent theorists (Damon, 1977; Gilligan, 1982; Kohlberg, 1969; Selman, 1976; Turiel, 1974) the structuralist assumptions outlined by Piaget (1968). Blasi (1976), writing with Loevinger, states that the theory concurs with "the Piagetian notion of stage: ego stages are conceptualized as equilibrated structures, related to each other in an invariant hierarchical sequence" (p. 41). With the theory described in such a manner, Loevinger has departed from the essentially

reductionistic and mechanistic psychoanalytic roots of her theory and taken an organismic position regarding development. Lerner (1976) notes several assumptions of the organismic position. First, it is an epigenetic viewpoint. Loevinger (1966a) offers a model whose stages represent higher levels of complexity in which a new characteristic is present that was not evident at lower organizational levels. Second, the theory is anti-reductionistic. Development is represented by the emergence of characteristics at each new stage that were not present, either in smaller or precursory form, previous to their emergence. Third, Loevinger's model takes a qualitative viewpoint. Because of the emergence of new characteristics at each stage, the stages are qualitatively different from one another and cannot be understood as mere quantitative extensions of previous stages. Finally, Loevinger (1976) views development as discontinuous.

> Describing ego development in terms of stages implies, firstly, that there is not a smooth transition from very low to very high ego levels: instead there are discontinuities. A second implication is that there are qualitative differences in the transition points along the way (p. 55).

Loevinger (1966a, 1966b, 1976, 1978) makes several methodological contributions to the study of developmental progressions. She makes the distinction between "polar variables" and "milestone variables." Polar variables are

those, typical of trait psychology, in which a characteristic varies along a single linear continuum. Milestone variables show a curvilinear variation with age and are typically present or absent in a predictable relation with age or other milestone variables. Hoppe (1972) found such a milestone variable in his investigation of conformity. He found conformist tendencies most prevalent in those persons rated at the Conformist ego level (in the middle of the stage sequence) and least prevalent in persons rated at the extreme ends of the stage sequence. Loevinger (1976) reports that complementary curves (high at the extreme ego levels, low in the middle) were found for such variables as spontaneity (Peck & Havighurst, 1960) and impulse expression (Sanford, Webster, & Freedman, 1957).

These milestone variables represent the emergent abilities and characteristics that make up the epigenesis of stages and indicate discontinuity in development. Loevinger (1976) describes a "milestone" pattern of empirical data that is representative of this discontinuous organismic position. Figure 1 is a simplified example of this pattern. Each curve represents a separate variable that emerges and recedes at different ages. Early variables show the highest probabilities of occurrence in that infancy and early childhood show the most commonalities in development. Later variables show lower probabilities of occurrence in that later developmental stages are not universally attained.

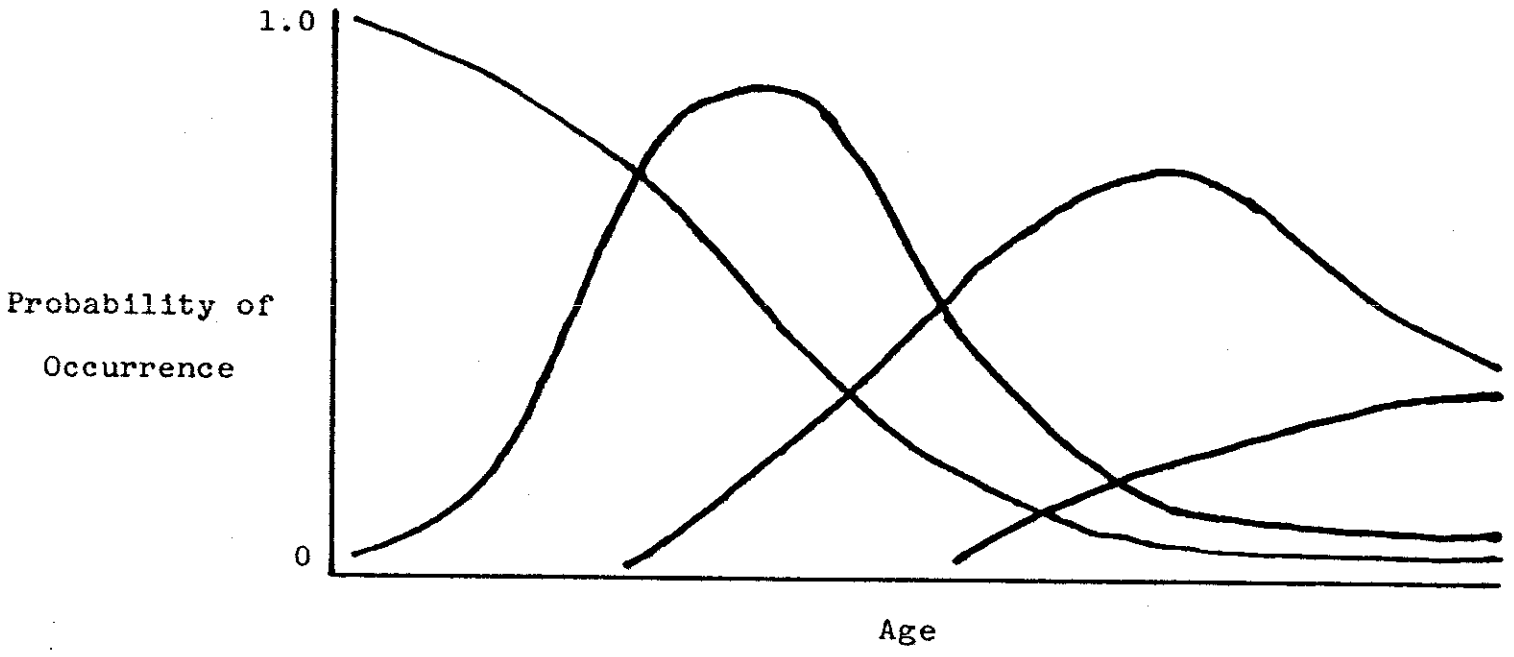


Figure 1. Model for a milestone sequence

(From Loevinger, J. Ego Development: Conceptions and Theories. San Francisco: Jossey-Bass, 1976, 167. Copyright 1976 by Jossey-Bass, Inc.)

Loevinger (1976) asserts that this milestone sequence differentiates continuous trait models from structural development. "In comparing the trait models with structural models, we must return to the distinction between polar variables, defined in terms of their extremes. The developmental progression of structures is a milestone sequence" (p. 256).

Additionally, Loevinger (1976) is skeptical about the utility of measuring single variables, especially readily observable behaviors, in attempts to study development. "If one sticks to observables, he will be forever concerned with the several stages, which are more obvious than the continuity that underlies them" (p. 207).

Both Lerner (1976) and Werner (1957) speak to the difficulty of measuring discontinuities through single variables, as well. Lerner presents examples showing how the same data can be used to argue for continuity or discontinuity depending upon how the data are presented. Werner asserts that whether one accepts the notion of discontinuity in development depends more on theoretical orientation than the strength of the evidence. Werner (1957) does offer some important distinctions for those attempting to study discontinuity.

> It seems that discontinuity in terms of qualitative changes can be best defined by two characteristics: "emergence," i.e., the irreducibility of a later stage

> to an earlier; and "gappiness" i.e., the lack of intermediate steps between earlier and intermediate stages. Quantitative discontinuity on the other hand, appears to be sufficiently defined by the second characteristic . . . To facilitate distinction and alleviate confusion, I would suggest substituting "abruptness" for quantitative discontinuity, reserving the term "discontinuity" only for the qualitative aspect to change (p. 133).

Abruptness in quantitative change is difficult to measure. In a sense, it needs to be "caught" by measurement immediately prior and subsequent to the abrupt change. Lacking a longitudinal design utilizing very frequent or constant measurement (which brings with it its own methodological problems), "abruptness" may be defined by the amount of discrepancy that a measure shows for a strict linear progression across stages and particularly across transitions.

We have viewed Loevinger's model as an organismic theory of development and have examined the methodological basis from which she justifies that position. The second major theoretical assumption that Loevinger (1966a, 1976) makes is that of a structuralist or constructivist view of stages and their development.

Loevinger (Loevinger & Wessler, 1978) is indebted to Sullivan (1953) for his description of the self system as a series of transformations with an implied lawfulness of

organization. Blasi (1976) identifies two aspects that a structure implies: "(1) that there are many elements and parts, and (2) that these elements are not simply an aggregate, an assemblage, as in a heap of stones, but are related to each other so as to form a well-defined order" (p. 37).

Loevinger (1976) states that "our conception of ego development is that of a transformation of structures. To that extent, it would appear to be a part of the cognitive developmental school of psychology, particularly in the Piagetian tradition" (p. 431). Loevinger's conception of ego structure does not differ significantly from the cognitive structures of Merleau-Ponty (1963) and Piaget (1968) or the structural aspects of Kuhnian paradigmatic progression.

Piaget (1968) describes two aspects common to all these varieties of structuralism. The first aspect is that structures have an "intrinsic intelligibility." They are self-sufficient and maintain a consistent logic throughout the system. Loevinger's separate stages represent an internally consistent organization. Her stages are distinctive in that they purport to represent a structure that encompasses a person's entire "world view." "According to this theory, each stage of ego development embodies a view of human motivation and interpersonal interaction consonant with its own mode of functioning" (Loevinger, 1976, p. 423).

Second, Piaget (1968) notes that "structures in general have, despite their diversity, certain common and perhaps necessary properties" (p. 5). He identifies three key ideas. Wholeness is a property defined by the laws or relations that hold together the separate elements of the structure. The stages are tied together by laws governing their relations and a change in one part of the structure affects other parts. It is the characteristics of the elements and their relations that differentiate between types of structures. Structures can be laterally or hierarchically organized, they can have few related elements or many.

A second commonality among structures is that of transformation (Piaget, 1968). The laws defining relations between elements are the structure of a system, but they are also structuring that system. Loevinger identifies some mechanisms of this structuring process. "The ego or self system screens out observations of interpersonal interactions that do not fit its frame of reference" (Loevinger, 1976, p. 423). While this exclusion of observations is defensive in nature, the system also transforms observations so that they make sense within the individual's structure. Just as "one plus one" is transformed to "two," and observation that "Angelique is smiling and staring at me," can be transformed by the ego structure to "Angelique is attracted to me." The third commonality among structures is that of self regulation. This characteristic describes the self maintenance and closure

of structures. Once a stable structure has been established, it is self maintaining and can become a closed system. This is retained even if it subsumed and becomes a part of a greater structural system. It retains its own structural integrity, while contributing to the larger whole.

Loevinger (1976) makes several observations regarding the dynamics of ego structures. The origins of internal structures lie in the external interpersonal experience of a person. She moves beyond a skeletal image of internal structures provided by Piaget and provides a process through which structures are derived. "Disavowing all spatial and mechanical connotations, I shall describe a form of the dialectical theory as the 'personification of inner forces'. This is the theory that the relations between people serve as a model for internal psychic differentiation" (p. 422). Loevinger agrees with Hartmann (1958) and other ego psychologists on this point. She rejects the notion, though, that structure can be assumed due to the stability and patterns of ego functions. Loevinger states that "structure for us is defined by organization; it is explicitly not spatial: stability and slow changes are consequences, not defining aspects" (p. 422).

While Loevinger provides innovative methodology in examining the organismic mechanisms of change, she offers little to those interested in the structural aspects of her model. Indeed, although there is strong evidence for

invariant sequentiality in Loevinger's model, there has been little or no study of the actual structural organization within each stage and during stage transition. Structure has remained a theoretical construct inferred from developmental emergence of various abilities and dispositions.

Piaget (1937) marks the predominance of concrete operations when a child is able to perform tasks that require classification, conservation, seriation, and an understanding of causality. Structural changes are inferred from qualitative differences in the child's thinking from a previous time. Kohlberg (1969) asserts that a new moral stage structure exists when an adolescent moves from a conventional moral decision based upon peer consensus to one based on the inviolateness of rules and laws. Structure, again, is inferred from the qualitative differences between the moral decisions of a person at two different periods of time.

Loevinger (1976) is consistent with the above theorists in inferring distinctly different stage structures from qualitatively different reasoning or abilities. A new ego level brings with it an entirely new "world view" or structure through which all experience derives its meaning. While qualitative descriptions of these stage structures are well articulated, quantitative descriptions of structures have been more elusive. Stage theorists have limited themselves to identification of stages, their content, and sequence.

Loevinger (1976) has offered the distinction between milestone variables and polar variables to help differentiate those attributes of a person that are clues to the internal structure (e.g., conformity). Both polar and milestone variables are content measures that describe personality characteristics. They can be used to describe personality, and the pattern of milestone variables is strongly suggestive of development, nut neither taps directly into the structural characteristics of stages.

Another type of variable can be distinguished to measure more directly the structural organization of a stage. These variables will be termed "process variables." These variables are unlike polar variables in that they are related in some systematic way to the progression of structural change throughout development. They differ from milestone variables in that they are not emergent characteristics but are present throughout development. There appear to be two types of process variables. The first type are those variables that measure the organizational characteristics of structures directly. Cognitive complexity and measures of hierarchical organization of belief or construct systems are assumed to be examples of a direct process measure. The second type of process variables are those characteristics that are correlated with structural change. An example of this type is anxiety. Fingarette (1963) describes anxiety as a failure in one's struggle for meaning. Defined as such, anxiety can be

seen as a manifestation of stage transition when a consistent stage structure loses its capacity to define meaning and is in the process of equilibration, forming a new structure. Nelson (1979) has identified changes in levels of anxiety, self esteem, and locus of control as consequences of stage transition.

It is the intention of this study to examine the inherent structural qualities of each of Loevinger's stages and the characteristics of stage "transition." Specifically, subjects found to manifest functioning at each of several of Loevinger's stages and transitional levels will be assessed to determine the complexity and degree of hierarchical organization represented in their interpersonal reasoning. Analysis of these findings will suggest the extent to which the stages and transitional levels represent "structured wholes" and whether the pattern of structural characteristics found in the sequence of ego levels is consistent with continuous or discontinuous change. Following will be a description of Loevinger's ego stages, research regarding the construct validity of her stage model, and a description of the hypotheses and methodology in the present study.

The Stage Model

Loevinger's (1976) model offers a seven stage model of ego development and identifies four transitional levels that mark movement between stages. Her stages begin with a pre-verbal Symbiotic (I-1) stage which is consistent with

Mahler's (1968) description of symbiosis. In the Impulsive (I-2) stage a person is governed by his/her impulses which serve to affirm his/her separate identity. Punishment is seen as imminent and retaliatory and these and other environmental constraints serve as the person's main source of control. Experience is often physical in nature and persons at this stage are often preoccupied with bodily impulses, especially aggressive and sexual ones. The person at the Self-Protective (Delta) stage can anticipate short term rewards and punishment and has learned to control his/her impulses in response. Vulnerability and guardedness accompany this early self-control. The self-protective person is aware of rules and uses them to his/her own advantage. A "situational morality" determines his/her immediate behavior. This person often subscribes to a lifestyle best termed as opportunistic hedonism. For the self-protective person, life is a "zero-sum game"; what one person wins, another person loses. The Conformist (I-3) stage arises when the person begins to identify his/her own welfare with that of the group, usually the family or peer group. Trust is an essential component of this stage. Otherwise, a self-protective stance is maintained. The conformist person follows rules because he/she fears disapproval. Disapproval is a potent sanction in that it represents rejection from the group but also threatens rejection of self due to the ego's identification with the group. Moral decisions are made in deference to

one's obligation to group rules. The person at the Conscientious (I-4) stage demonstrates an ability to classify action as right and wrong and shows guilt at violating rules. The major elements of a fully developed conscience are present in the conscientious person. Internalization of social rules and norms are complete by this stage. A conscientious person has internal standards and views himself/herself as the master of his/her own fate. Experience at this stage is rich and well differentiated. His/Her view of himself/herself is in terms of traits, motives, and patterns of behavior. A conscientious person has a strong ability to empathize with others. The person at the Autonomous (I-5) stage has developed an ability to experience and resolve inner conflicts. He/She has a tolerance for ambiguity and can view the world as complex and multifaceted. Conceptual complexity is very high. He/She recognizes a need for autonomy, to be separate, while acknowledging the joy in interdependence. The autonomous person can take a broad view of life and strives to see himself/herself and others objectively. The Integrated (I-6) stage rarely is found. Loevinger acknowledges the difficulty of describing this stage due to its rare occurrence and the developmental limitations of most researchers. She likens this stage to Maslow's self actualized person, a person with integrity and a well-organized identity.

Additionally, transitional levels are described between several of the stages. The Ritual-traditional (Δ/3) level

occurs between the Self-Protective and Conformist stages. The Self-Aware (I-3/4) level occurs between the Conformist and Conscientious stages. The Individualistic (I-4/5) level occurs between the Conscientious and Autonomous stages. These transitional levels describe the characteristics that arise as previous stages are destabilized by new experiences or emerging new abilities. Theoretically, transitions represent periods of confusion, anxiety, and disruption in the structural organization from which one derives meaning. Nelson (1979) characterizes this disequilibration as a "period of internal upheaval within which the individual is highly unpredictable" (p. 13).

The validity of Loevinger's theory has been examined from several perspectives. Sequentiality of stages has been the traditional primary focus for research confirming the validity of most stage developmental theories (Kohlberg, 1969).

Criterion validity has been rejected by Loevinger (1979a) as inappropriate for a construct as comprehensive as "ego," yet some research addressing the relation of ego development with other relevant variables will be presented. The "milestone" model of development presents a logical direction for examination of validity and there is a limited amount of research available addressing this concept.

Loevinger (1979a) cites a large number of studies to confirm the sequentiality of her stages. Loevinger and Wessler (1978), Coor (1970), and Hoppe (1972) have performed

cross-sectional studies that demonstrate that as age increases in their samples the distribution of individual ego levels increases to include successively higher stages. Additionally, the distribution of ratings for single items in individual subjects' test protocols has been shown to have a progression with age that is also consistent with Loevinger's stage sequence (Loevinger & Wessler, 1978). Several short-term (one and one-half to six year) longitudinal studies have demonstrated irreversibility of stages by finding only stability or increase in ego level over time (Loevinger & Wessler, 1978; Redmore & Loevinger, 1979). Other longitudinal designs have included what Mosher and Sprinthall (1971) have termed "deliberate psychological education" in an attempt to facilitate ego development in inner city black children (Blasi, 1976), high school students (Sullivan, 1975), college students (Exum, 1977; Whiteley, 1982), adults (Lasker, 1978), and women (Erickson, 1974, 1975). These studies show support for sequentiality but not unequivocably so. Overall, the group mean ego levels in these studies were stable or showed increases, with two exceptions. Exum (1977) and Whiteley (1982) found that their non-treatment control groups showed slight decreases in mean ego level, and examination of test protocols in Whiteley's (1982) study revealed individual ego levels decreasing over time in treatment, placebo control, and control groups (Nelson, 1979). Loevinger (1979b) and Hurt (1975) attribute some of this decline to pretest

contamination and hostility on the part of some subjects toward the Sentence Completion instrument. Others, such as Adams and Fitch (1982) attribute these declines to "regression in the service of the ego." This type of regression has also been implicated by Loevinger (1976) and Turiel (1977) as part of a destructuring process occurring as a precursor to stage transition, an implication not inconsistent with Adams and Fitch. In support of these latter hypotheses, some of those individuals studies by Nelson showed subsequent jumps in ego level on later testing as did the control group in Whiteley's study.

A final method for confirming sequentiality in Loevinger's model derives from the concept of "functional access to lower stages." Theoretically, as development occurs, higher stages subsume lower ones and the individual retains the capability to access lower stages if necessary. An example of this phenomenon is a person of moderate to high ego level who is placed in prison. He/She must conform to the impulsive or self-protective atmosphere in order to survive the experience. This ability to access lower stages is accounted for by Loevinger in her scoring of ego level. "Regression under stress probably takes place with respect of all facets (of ego development). Classifying a person at a given stage means, approximately, that that is the highest level at which he/she is capable of functioning consistently" (Loevinger, 1979b, p. 201). Because of the ability to access

lower stages, an individual subject can express himself/herself from a lower stage perspective of any stage he/she has not yet experienced. If the sequentiality of Loevinger's stages is to be confirmed, individual subjects ought to be able to "fake low" but not to "fake high." A set of studies by Redmore and Waldman (1975) confirmed this hypothesis. She found that subjects asked to make a bad impression on the test lowered their test score at least one stage, usually to the Self-Protective level. Those asked to make a good impression remained at the same level, decreased, or increased by, at most, a half stage. Blasi (1976) found that sixth grade children were unable to comprehend the characters in a role play experiment who were of a higher ego level. The children rejected, disclaimed, or refused to take the role of these characters or distorted the stories to eliminate the role althogether.

Loevinger (1979a) has found criterion validity to be of little use in confirming the construct of ego development. She asserts that any relation to objective behavior or easily identified groups of subjects would render the concept superfluous. Ego development encompasses too many facets of development to be measured by any single criterion. Despite Loevinger's discomfort with specific relations with other variables, her instrument is significantly correlated with several criterion measures that lend her model validity.

Lucas (1971), Farrell (1975), and Brinkerhoff (1971) have compared individuals' ratings on Loevinger's ego levels with global ratings derived from interviews. Subjects included psychology and engineering college students and high school girls, respectively. Correlations ranged from .32 to .61. Haan, Stroud, and Holstein (1973), in a study examining the behavioral correlates of stages, found that succeeding ego stages are "characterized by more extensive and intensive coping," (p. 603) and that successful coping increased with stage. Rock (1975) found that Heath's test of maturity had a correlation with ego stage of .44. Several studies address Loevinger's milestone view of development. Fisher (1973) adapted a Machiavellianism scale (Mach V) for sixth through eighth grade children to test whether it was related to ego development. Results showed a positive correlation for boys and a curvilinear relationship for girls with a peak at the Self Protective level. The pattern of scores was not clear for boys but the constricted range of stages in this study does not allow determination as to whether this finding is consistent with that predicted. As reported previously, Hoppe (1972), Hoppe and Loevinger (1977), and Harakal (1971) used measures of conformity to assess its relation to ego development. Peaks in conformity were found at the Conformist level and a drop in conformity at pre- and post-conformist levels.

Fisher (1973) found peaks in social desirability at conformist levels but these were not statistically significant. Redmore (1969) predicted more affiliative tendencies as rated by the Thematic Apperception Test (TAT) in those at the Conformist level than those rated at other levels. This hypothesis was not confirmed. Lasker (1978) in a cross-cultural study on the Curacao Island in Netherlands Antilles hypothesized that need for achievement expressed in TAT stories would move from low achievement scores at pre-conformist levels and rise sharply to a peak at the Conscientious level. The pattern of his data confirmed this prediction. Rock (1975) found that two measures of self-insight showed highly significant correlations of .52 and .53 in college students, only slightly lower than the correlation between the two self-insight measures (.60). These correlations remained significant even when intelligence or age was partialled out.

Blasi (1971, 1976) in a study that is somewhat vulnerable to experimenter bias found some behavioral validation of Loevinger's levels. In a study of eleven- and twelve-year-old black children he found Impulsive children to be rated as poor discriminators of feeling, lacking insight into motives, having short attention spans, and were restless, misbehaved, and disruptive. The Impulsive children were observed to blame others in a naive and irrational manner and were dependent on authority and punishment for guides to appropriate behavior. Self-protective children expressed less

disapproval of sneaky, opportunistic role playing, were quite demanding of leniency and indulgence when caught misbehaving, had difficulty expressing shame, and were rated as more sullen and defiant. Conformist children recognized the function of rules better than the other children. They justified obedience to rules by citing their love and loyalty to authority. Conformist children tended to prefer literal interpretation of rules and were disapproving of sneaky characterizations.

Frank and Quinlan (1976) compared a group of delinquent adolescent girls with two comparable control groups. The frequency of girls at the Self-protective stage was no different between the groups but the number of girls at the Impulsive level was significantly higher in the delinquent group. Additionally, the overall number of deviant behaviors correlated with ego level and the incidence of fighting alone correlated (-.52) with ego level.

Other variables have been studied in relation to ego level. Shumate (1970) predicted that persons with high internal locus of control (Rotter's I-E Scale) would be higher in ego level. He found no significant relationship in 104 college students. This is consistent with the findings of Whiteley (1982). Nelson (1979) found that internal locus of control seemed to vary depending on a subject's movement through a developmental transition. Zielinski (1973) found that ego level correlated (.46) with an ability to communicate

empathic understanding and the ability to learn to discriminate empathy. Atkins (1976) found that women above the Conscientious level showed higher experiencing levels (on Gendlin's Experiencing Scale) than did women below the Conscientious level.

Loevinger's ego stages have been found to be moderately related to other developmental models. Kohlberg's measures of moral reasoning have been correlated from between .46 to .80 depending on the range of stages present in the samples and whether the effects of age or intelligence are partialled out (Lambert, 1972; Nelson, 1979; Sullivan, McCullough, & Stager, 1970; Whiteley, 1982). Loevinger (1979a) estimates the correlation for the entire range with age partialled out to be .60. Hopkins (1977) found a significant relationship between Marcia's interview determining identity status (Erickson, 1950) and Loevinger's Sentence Completion Test (SCT). Increasing ego levels are related to Marcia's Diffusion, Foreclosure, Moratorium, and Achievement categories in the expected developmental progression.

Several variables present confounds to the measurement of ego development. Intelligence has been conceptualized as a limiting variable that creates a ceiling to ego development (Blasi, 1976). Blasi (1971), studying sixth graders, found a correlation of .46 for boys and .49 for girls between the SCT and the Lorge-Thorndike Intelligence Test that varied between .37 and .59 depending on grade and class program. Correlations

between ego development and IQ ranged from .1 to .5 in a series of unpublished studies reported by Loevinger (1976). Sheridan (1975) found no relationship between IQ and SCT in retarded adolescents.

Hoppe (1972) found a nonsignificant .14 correlation between scholastic aptitude and SCT for high school boys. Vetter (1978, cited in Loevinger, 1979b), using a sample of adolescents in Germany, found no significant correlation between verbal abilities and SCT for either boys or girls. Farrell (1975) found no significant correlation between SAT verbal scores and SCT for a sample of 46 freshmen. Candee (1974), studying a sample of 74 students who engaged in leftist activities found correlations of .11 between the SAT math scores and SCT and -.27 between SAT verbal and SCT.

Although it appears there is little evidence for a relationship between ego development and either verbal ability or scholastic aptitude, there appears to be a moderate relationship between IQ and SCT. This is not altogether unexpected to Loevinger. "Since increase in cognitive complexity is one aspect of ego development, the conceptual distinction between cognitive and ego development is not simple and obvious (Loevinger, 1976, p. 175). Blasi (1976) cites the limiting function of cognitive development and this presumes at least a small relationship.

Overall, there is impressive evidence for the sequentiality of Loevinger's stage model, some limited evidence for

the existence of milestone variables related to stages, and some evidence for increases in adaptive skills with increased stage. Correlations with other developmental models and IQ raise the questions as to whether cognitive, ego, moral, and social development are separate domains or are related in some systematic way.

Hypotheses

This study examined the structural characteristics of Loevinger's stages and transitional levels to determine whether the characteristics are consistent with those predicted by the constructivist/organismic view of development. Using the process variables measuring the cognitive complexity and hierarchical organization of internal constructs, analysis focused on whether the stages and transitional levels are distinct in their structural characteristics. By examining the cross-section of structural attributes in the stage sequence, it was determined whether the progression of stages represented discontinuous development or were consistent with a more linear progression.

The first hypothesis concerned the structural qualities of each stage. Loevinger (1976) sees Werner's (1957) orthogenetic law as applicable to ego development as well as to cognitive development. Werner's orthogenetic principle was used to predict the pattern of differences to which Loevinger's stages should conform. Werner's principle states that "whenever development occurs it proceeds from a state of relative

globality and lack of differentiation to a state of increasing differentiation, articulation, and hierarchic integration" (Werner, 1957, p. 126). The levels of complexity and hierarchic organization were expected to be represented distinctly by different stages. This simple expectation became more complex when transitional levels were considered. Transitions or disequilibrations involve structural change (Pinard & Laurendeau, 1969) and in this process the person is "characterized by a great deal of inconsistency, conflict, and internal contradiction" (Turiel, 1974, p. 8). In transition, the person must first appreciate that there are conflicting elements in one's experience (Flavell, 1977). The acknowledgement of one element of a structure conflicting with another implies the introduction of a new element into the person's system. Baltes, Reese, and Lipsett (1980) note that "while the mechanisms of transition are not always clear (Brainerd, 1978), there is agreement that exposure to new intra- and extra-personal information, experiential paradoxes and disturbances are the sine qua non for developmental movement and interstage transition" (p. 81). Thus it seemed that, even in stage transition, there was an introduction of new information or elements into the structure. It was expected, then, that complexity would increase linearly across both full stage and transitional levels. Although complexity increases with the introduction of new information throughout development, the organization of structure undergoes dramatic

reorganization at each stage transition. To resolve the conflict leading to transition, some of the laws of relations between elements in the structure need to change. This disequilibration process involves a destructuring or loosening of the hierarchical organization. This leads to the confusion described earlier by Turiel. Thus, in transition, it is expected that the hierarchical organization of the structure will decrease slightly to accommodate new information before restructuring into a more adaptive and more highly organized stage structure. This would result in a measure of hierarchical organization following a nonlinear pattern. It was expected that the measure of hierarchical integration would follow a pattern across the stages and transitional levels that resembled a steadily increasing sinusoidal curve.

The results of this study had several implications. First, it represented a form of theoretical validation for Loevinger's theory. If Loevinger's stage progression can be viewed as a structural progression, the bulk of developmental research addressing stage transition and equilibration can be applied to an area of human functioning that receives little attention from most non-clinical psychologists.

Second, if discontinuity of ego development and the structural integrity of stages could be determined, there would be several implications for intervention strategies for clinical, counseling, and educational psychologists. Therapeutic change may need to involve the introduction of conflict

to facilitate disequilibration and one cannot expect to see major personality changes through the teaching of various skills and abilities. Additionally, those variables such as anxiety and self-esteem cannot be viewed as simply continuous variables where one pole on the continuum is viewed as preferable. It is possible that a differentiation needs to be made between the pathological, transitional, and adaptive aspects of characteristics such as anxiety, self-esteem, or hierarchical organizations.

Finally, the use of "process variables" to examine the dynamics of stage structure and transition would provide a useful methodological contribution to the research of stage developmental models. Identification of other process variables would improve the ability of researchers and clinicians to discriminate transitionally-related distress from more pathological distress.

CHAPTER II

Method

Subjects

Seventy-three subjects voluntarily participated in the study. They were solicited from a two year community college, a four year private liberal arts college, and a state university. Subjects included students, faculty, and staff. Subjects ranged in age from 17 to 55 years with a mean age of 23.9 years.

Six subjects received extra credit points in psychology-related courses as a result of their participation. All subjects received both a verbal and a written explanation of the study (see Appendix A) and signed an informed consent form prior to participation in the study. Despite the opportunity to terminate participation in the study at any time, only one subject chose to do so.

Instruments

Two measures were utilized in this study. The Washington University Sentence Completion Test for Ego Development (SCT) is a projective test presenting 36 sentence stems to be completed by the subject. Separate forms are used by men and women.

The scoring of the SCT was accomplished using two independent raters. Each rater has had extensive experience with developmental theory. One rater was experienced in

assessing intelligence and developmental status while the other was experienced in assessment using intellectual, projective, and educational measures. Each rater was knowledgable of Loevinger's theory and familiar with her instrument. The raters were self-trained using the method outlined by Loevinger and Wessler (1978) and Loevinger, Wessler, and Redmore (1978). Reliability was established using data from a sample graciously provided by Dr. John Whiteley at the University of California at Irvine.

Individual stem responses were rated by each rater separately and assigned one of nine possible ego levels using the procedures outlined by Loevinger and Wessler (1979) and Loevinger, Wessler, and Redmore (1979). For each subject, ego level ratings were assigned for each of 36 stems. A total of 2,628 ratings were thus assigned by each rater. Of these, the raters agreed on 87.75 percent of the ratings; 96.08 percent of the ratings agreed within one-half stage; and 99.12 percent of the ratings were within one full stage. The intraclass correlation between the raters' assignments was .86 ($p < .00001$). Differences between raters were resolved through discussion until each subject had a single ego level rating for each of the 36 stems of the SCT.

An empirical TPR was also calculated using a cumulative frequency ogive of the ego levels assigned to each stem in an individual's protocol. Cutoff rules were provided by Loevinger and Wessler (1978). Each rater also developed an

intuitive Total Protocol Rating (TPR) for each individual's protocol, based on an evaluation of the subject's responses to all of the stems taken together. This intuitive evaluation was derived from Loevinger's theory.

The agreement between empirical and intuitive TPRs was quite low (67.12%). Agreement within one-half stage was 98.63 percent. The empirical TPR was retained as the representative score for Loevinger's scoring system. While it was felt that the empirical TPR was more consistent with Loevinger's intent, the intuitive TPRs were felt to reflect an alternative view of the developmental process that deserved further investigation.

In examining the process that the two raters used to arrive at intuitive TPRs, it became clear that each held a similar conception of developmental transition that did not appear to be reflected in Loevinger's empirical approach and was not articulated in her instructions for assigning intuitive TPRs. In response to the concern that these data might be lost, a structural-transitional TPR was assigned to each protocol reflecting a consensus of the two raters. The following two-part procedure was followed in arriving at the structural-transitional TPR.

First, it was determined whether the protocol reflected a stable or transitional structure. Transitional structures are those that show a wide variation in sophistication of

ego levels across the stem levels. Transitional protocols contain a particularly angry, resentful, or painful tone as well as content that reflects confusion and uncertainty. Transitional protocols are concerned with issues of dependence/independence and with protecting what little stability exists in the ego structure. At times, this may be expressed as self-righteousness.

Stable stage protocols have individual item ratings that are represented by a single primary ego level with only a slight range (usually within a half stage). One is struck by the sense of assurance and confidence in the tone of the protocol and the content is stated matter-of-factly.

Second, those protocols determined to be transitional were then typed as to which trancitional level the protocol most represents. This is usually consistent with Loevinger's (1976) existing theory. Ritual-transitional level subjects reflect concerns relating to physical freedom (e.g., being able to leave the house, do what you want without someone directly intervening, etc.). Ambivalence is expressed toward any authority that both controls and offers acceptance. Self-aware level transitional subjects present concerns regarding freedom from psychological effects of guilt, stereotyped expectations, and the expectations of others. The concerns are more internalized than those at the Ritual-traditional level. They demonstrate anger relating to perceived social constraints, yet a fear of rejection or loneliness. There

are self-deprecating statements or outright expressions of pain and confusion. At times, prescriptions for behavior are asserted in a self-righteous manner. Individualistic transitional subjects express the conflict between the need for autonomous functioning while remaining emotionally dependent on others. A sense of inner conflict is evident and can be expressed overtly yet is ego dystonic. The conflict leads to confusion and is unresolved. Anger is evident regarding limitations to personal achievement or expression of inner emotions or desires. Those individuals determined to be at a stable stage are typed according to Loevinger's (1976) description of stages.

Loevinger (1979a) presents strong evidence for the unity of her "ego" construct, although she notes that this may be an artifact of the close ties between her instrument and theory. Holt (1980) cites impressive findings in a study reporting interrater reliability of the SCT. Median correlations of individual item ratings of .82 for the women's form and .78 for the men's for were found. These are comparable to those reported by Loevinger (1979a) and reliability for TPR ratings is reportedly higher (loevinger, 1979a). Waugh (1981) has extended these reliability findings to ratings of subjects in clinical populations. Loevinger and Wessler (1978) and Holt (1980) have found comparable reliability between consensually trained and self-trained raters. In Loevinger and Wessler's (1978) study, reliability was .82 between consensually

trained raters and the reliability was .92 between self-trained raters; for Holt (1980) the reliabilities were .76 and .85, respectively. Validity of the SCT has been reported previously in examining validity of the theory. Extensive reviews of both validity and reliability are found in Hauser (1976) and Loevinger (1979a).

The second instrument employed was the Role Construct Reperatory Test (Rep test). The specific test is a modification by Landfield (1980) of Landfield's Role Construct Reperatory Test (Landfield, 1971). The test presents the subject with an instruction sheet, and a role specification/response sheet. Following the instruction, the subjects complete a 15 X 15 grid matrix. The columns of the matrix represent distinct individuals in the person's life who conform most closely to description provided in the instruction sheet (mother, same sex friend, successful person, etc.). The rows represent the personal constructs of the individual, derived from similarities or contrasts for two persons in the row, and ratings on a thirteen point scale representing each individual's location on that construct continuum.

A measure of cognitive complexity is derived from this matrix. Landfield's Functionally Independent Constructs (FIC) score was calculated using a method described by Landfield (1971). Landfield views this as a measure of the quantity of functionally different dimensional units of meaning. He notes that the FIC score denotes the number of

construct dimensions that are used independently of each other. FIC has been used as a measure of cognitive complexity (Landfield & Barr, 1980) and is described as a measure of construct differentiation (Angilillo, 1982).

FIC, in this study, represents "the part" or elements in a structure as described earlier by Blasi (1976). The number of constructs that the subject is able to utilize in describing his evaluation of others will represent the level of complexity that the subject uses in his structural understanding of others. Landfield and Barr (1980) report a test-retest reliability of .82 for the FIC score.

Another measure, representing the hierarchical integration of the construct system, was also derived from the Rep test. Landfield and Barr (1980) describe from the Ordinality score (O) as a measure of hierarchical organization, construct integration, and meaningfulness. This represents a measure of within-construct differentiation (Angilillo, 1982). A high ordination score represents the ability to differentiate levels within a construct dimension and further represents an integration of the construct system. Landfield and Barr (1980) report that the test-retest reliability for the O score is .78. The O score represents, in this study, the level of organization evident in the ego structure of an individual. This measure represents Blasi's (1976) "order" of a structure. Both FIC and O scores were calculated through the use of a computer program developed by Landfield (1980).

Several notions provide confirmation of the Rep test's appropriateness as a measure of the characteristics of ego structure. First, cognitive complexity has been noted by Loevinger (1976) to be related to ego development. It represents a variable that presumably varies with stage in a manner inconsistent with "polar" and "milestone" patterns. Cognitive complexity appears to be a "process variable." The same argument can be made for a measure of hierarchical organization.

Second, the Rep test does not measure only cognitive skills. Blasi (1976) distinguishes between cognitive and ego development by noting their differential emphasis on physical/mathematical operations and interpersonal operations. In particular, he notes that "cognition does not offer the principle of determination, of preference, of value" (p. 43). The Rep test derives its scores from a grid evaluating the characteristics of persons, in particular, persons with whom the subject has developed constructs through interpersonal relationships. In fact, those constructs central to a subject's own self-concept are usually represented in the constructs identified on the Rep test (Tunnel, 1981).

The measure derived from the Rep test by no means samples the whole of a person's ego structure. Yet, given the nature of structures and their holistic character, a sample of interpersonal constructs should fairly reflect the entire ego structure. The ego framework, through which a person

views the world, should be reflected in his constructs and evaluations on the Rep test.

Statistical Analysis

First, the levels of complexity were expected to be represented by distinctly different stages. A 1 X 5 analysis of variance (ANOVA) for dependent measures was performed with ego levels as the independent variable determining groups and FIC as the dependent variable. A priori contrasts were performed between the Ritual-traditional and Conformist as well as the Self-aware and Conscientious level groups. A posteriori Newman-Keuls were performed between all ego levels following a significant result of ANOVA.

Second, the levels of hierarchical organization were expected to be represented distinctly by different stages. A 1 X 5 analysis of variance for dependent measures was performed with ego level as the independent variable. A priori contrasts were performed between the Ritual-traditional and Conformist, as well as the Self-aware and Conscientious level groups. A posteriori Newman-Keuls were performed between all groups following a significant ANOVA.

Third, FIC would increase linearly across both full stage and transitional levels. Trend analysis was performed as outlined by Winer (1971, pp. 177-185).

Finally, O would follow a pattern across stages and transitional levels that would resemble a steadily increasing sinusoidal curve. Trend analysis was performed as outlined by Winer (1971, pp. 177-185).

Procedure

Subjects were tested in both group and individual settings and were asked to allow one and one-half to two hours for the full test battery. Two experimenters (a doctoral candidate in clinical psychology and an Ed.D. developmental psychologist) administered the test battery which consisted of (a) an informed consent form, (b) the Role Construct Reperatory Test, (b) the Washington University Sentence Completion Test for Ego Development, and (d) an evaluation form.

The instruments were completed in the above order by all subjects. The Rep test (see Appendix A) was completed first due to the complexity of its instructions and the need for oral explanations of its steps by the experimenters. Care was taken to avoid suggesting any responses to the subjects and assistance was given only within the context of examples offered in the written instructions. The Rep instrument usually was completed in one hour, with a range of approximately 45 minutes to one and one-half hours.

Subjects began the Sentence Completion Test upon finishing the Rep instrument. The instructions simply were to complete the sentences and to make sure that all the stems were completed. Subjects had little difficulty completing the SCT and were usually finished within one-half hour.

The final instrument completed by the subjects was an evaluation form in which the Rep and SCT were rated as to their difficulty and enjoyment, as well as the subject's

ability to take the instruments seriously. In addition, the subjects were asked whether they would choose to include their own protocol if they were doing the research.

Calculation of FIC and O scores on the Role Construct Reperatory Test were calculated by computer using a program provided by Landfield (1980). Scores for individuals were not made available to either experimenter until after completion of the scoring of the Sentence Completion Test.

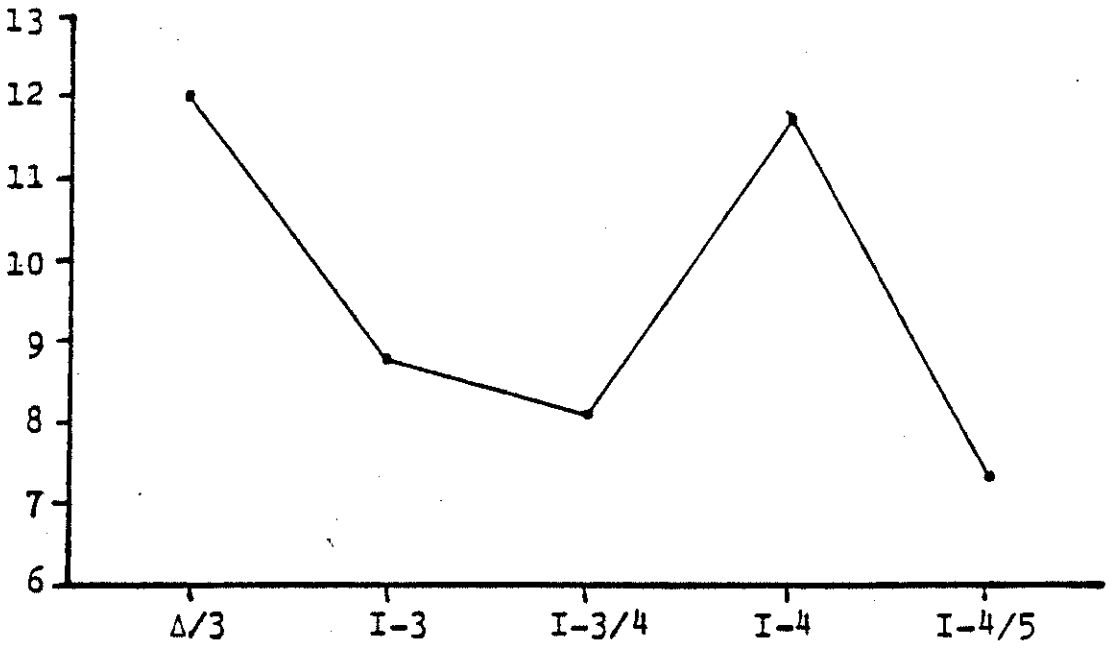
CHAPTER III

Results

The first hypothesis stated that the level of complexity (FIC) would be represented distinctly by each of Loevinger's stages. A simple analysis of variance (ANOVA) was computed between FIC scores of five ego levels in order to test this hypothesis. The result of the ANOVA was not significant (see Figure 2); no differences were found among the ego levels with regard to complexity. A priori contrasts, though, found a difference between the Self-Aware and Conscientious ego levels (t = -2.05, p = .004). A posteriori Newman-Keuls contrasts among the remaining levels were nonsignificant.

In addition, similar analyses of variance were performed using FIC scores broken down as relating to people or relating to constructs (FIC people + FIC constructs = FIC). Analysis using these more differentiated FIC scores yielded similar results. The analyses of variance computed with the FIC-people and FIC-construct scores of the five ego levels were not significant (see Figures 3 and 4); neither were the a priori and a posteriori contrasts.

The second hypothesis stated that the level of ordination (O) would be represented distinctly by each of Loevinger's ego stages. A simple analysis of variance was computed between ego levels to test this hypothesis. The results of the



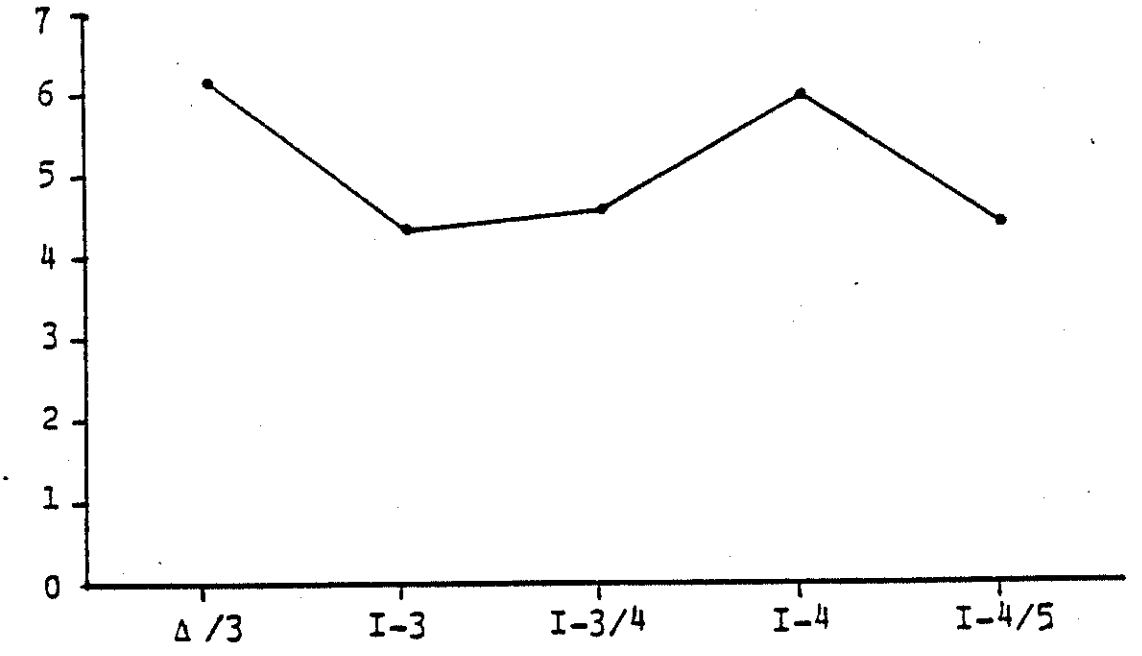
Stage	Mean	Standard Deviation
Δ/3	12.00	7.97
I-3	8.88	4.39
I-3/4	8.03	5.72
I-4	11.69	5.78
I-4/5	7.29	3.45

A priori contrasts: I-3/4 < I-4, $t = -2.05$, $p = .044$

Analysis of variance: $F = 1.57$, $p = .19$

A posteriori contrasts: no significant contrasts

Figure 2. FIC-Total by Ego Stages



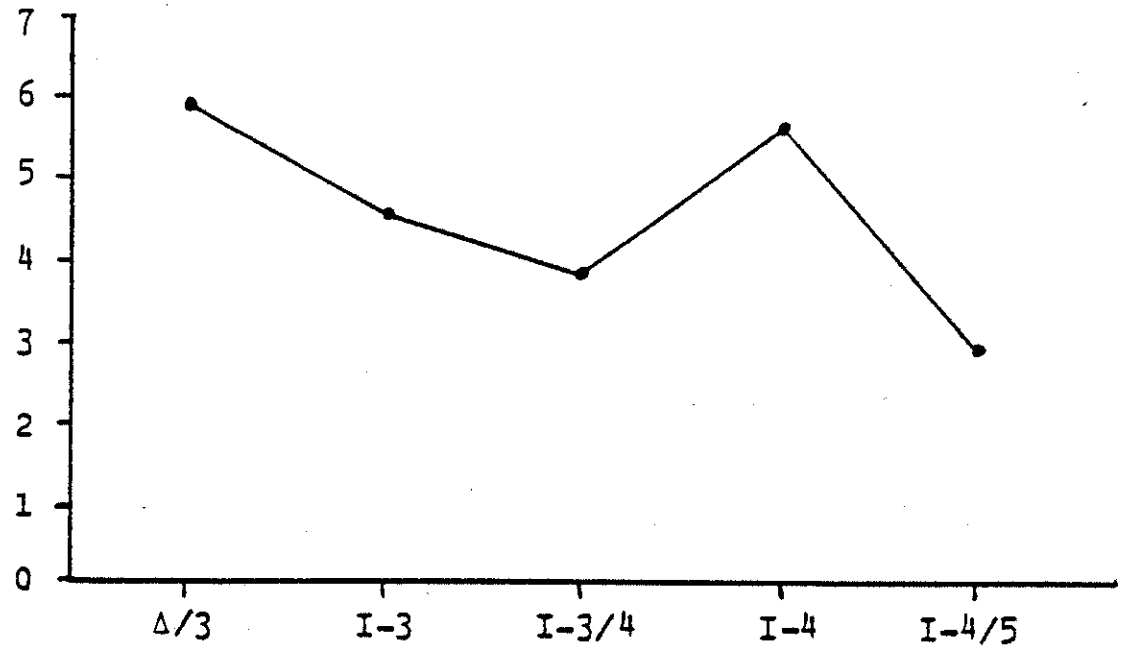
Stage	Mean	Standard Deviation
Δ/3	6.20	4.32
I-3	4.38	2.62
I-3/4	4.58	2.80
I-4	6.00	3.21
I-4/5	4.43	1.81

A priori contrasts: no significant contrasts

Analysis of variance: $F = .952$, $p = .44$

A posteriori contrasts: no significant contrasts

Figure 3. FIC-People by Ego Stages



Stage	Mean	Standard Deviation
Δ/3	5.80	3.96
I-3	4.50	2.00
I-3/4	3.80	3.40
I-4	5.54	2.88
I-4/5	2.86	1.68

A priori contrasts: I-3/4 < I-4, $t = -1.808$, $p = .083$

Analysis of variance: $F = 1.42$, $p = .23$

A posteriori contrasts: no significant contrasts

Figure 4. FIC-Construct by Ego Stages

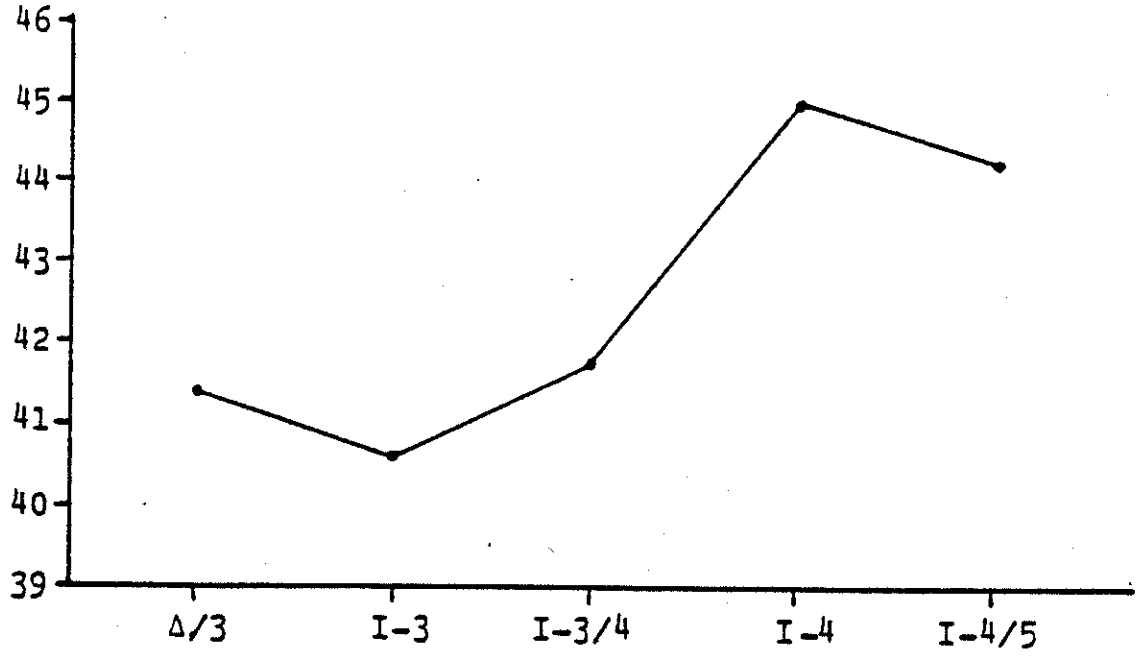
analysis of variance are not significant (see Figure 5); no differences were found among the ego levels in regard to ordinality. A priori and a posteriori contrasts were also nonsignificant.

Similar analyses of variance and a priori contrasts were computed replacing the FIC-people and FIC-construct scores with O-people and O-construct scores (see Figures 6 and 7). No significant findings emerged.

The third hypothesis stated that the pattern of FIC scores across ego levels would increase linearly. A trend analysis (Pedhazur, 1982) was performed to investigate whether the relationship between ego level and cognitive complexity reflected linear, quadratic, cubic, or quartic trends. No significant relationships emerged from this analysis (see Table 1). The relationship did not significantly resemble a linear trend across ego stages, nor any other pattern included in the analysis.

Trend analysis was also computed for the FIC-construct and FIC-people aspects of the total FIC score. No significant findings emerged (see Table 1).

The fourth hypothesis stated that the pattern of O scores across ego levels would reflect a steadily increasing sinusoidal curve. A trend analysis (Pedhazur, 1982) was performed to investigate whether the relationship between ego level and ordinality reflects linear, quadratic, cubic, or quartic patterns. No significant trends were noted (see Table 2) for



Stage	Mean	Standard Deviation
Δ/3	41.40	6.58
I-3	40.63	6.12
I-3/4	41.68	6.05
I-4	44.92	5.04
I-4/5	44.29	6.52

A priori contrasts: I-4 > I-3/4, t = -1.918, p= .067

Analysis of variance: F = 1.11, p = .36

A posteriori contrasts: no significant contrasts

Figure 5. O-Total by Ego Stages

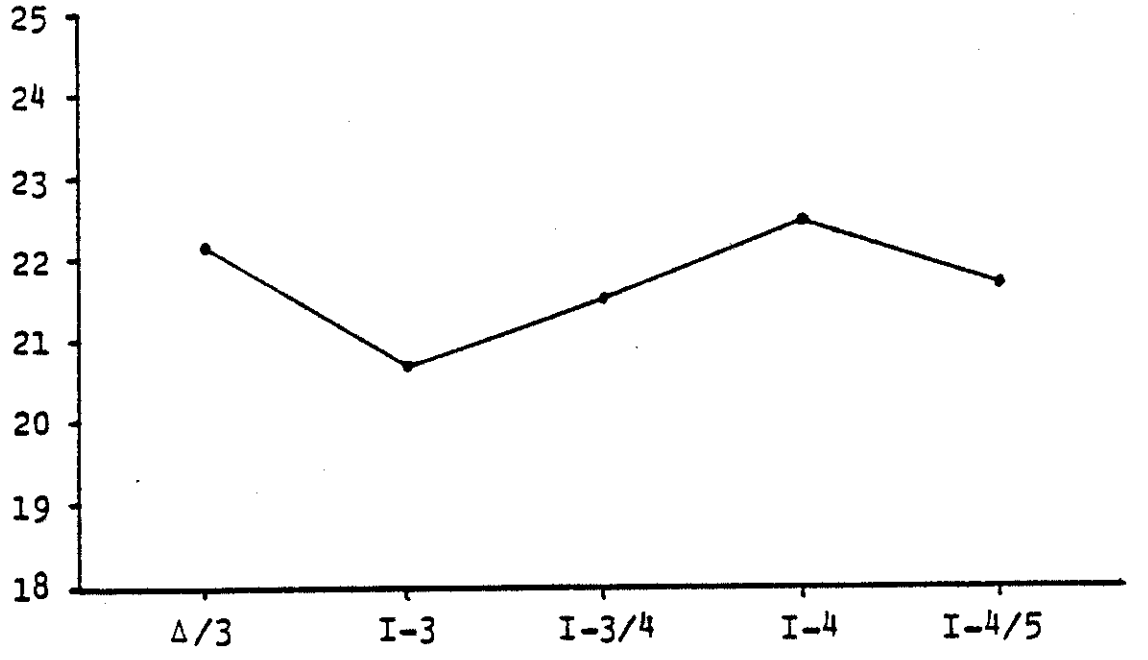
Stage	Mean	Standard Deviation
Δ/3	21.00	6.00
I-3	19.50	3.74
I-3/4	20.20	3.86
I-4	22.23	2.92
I-4/5	22.86	2.91

A priori contrasts: I-4 > I-3/4, $t = -2.00$, $p = .055$

Analysis of variance: $F = 1.47$, $p = .22$

A posteriori contrasts: no significant contrasts

Figure 6. O-People by Ego Stages



Stage	Mean	Standard Deviation
Δ/3	22.20	4.66
I-3	20.75	4.06
I-3/4	21.55	3.42
I-4	22.38	2.66
I-4/5	21.71	3.95

A priori contrasts: no significant contrasts

Analysis of variance: F = .313, p = .87

A posteriori contrasts: no significant contrasts

Figure 7. O-Construct by Ego Stages

Table 1

Trend Analysis, FIC by Ego Stage

Variable	Multiple Correlation R^2	Multiple Correlation Significance	Trend Analysis Pattern	Trend Analysis F	Trend Analysis Significance
FIC-Construct	.19	NS	--	--	--
FIC-People	.19	NS	--	--	--
FIC-Total	.23	NS	--	--	--

Note. NS = Not Significant.

Table 2

Trend Analysis, O by Ego Stage

Variable	Multiple Correlation R^2	Multiple Correlation Significance	Trend Analysis Pattern	Trend Analysis F	Trend Analysis Significance
O-Construct	.02	NS	--	--	--
O-People	.13	$p < .05$	Linear	3.211	NS
			Quadratic	1.17	NS
			Cubic	INS	NS
			Quartic	5.925	$p < .05$
O-Total	.22	NS	--	--	--

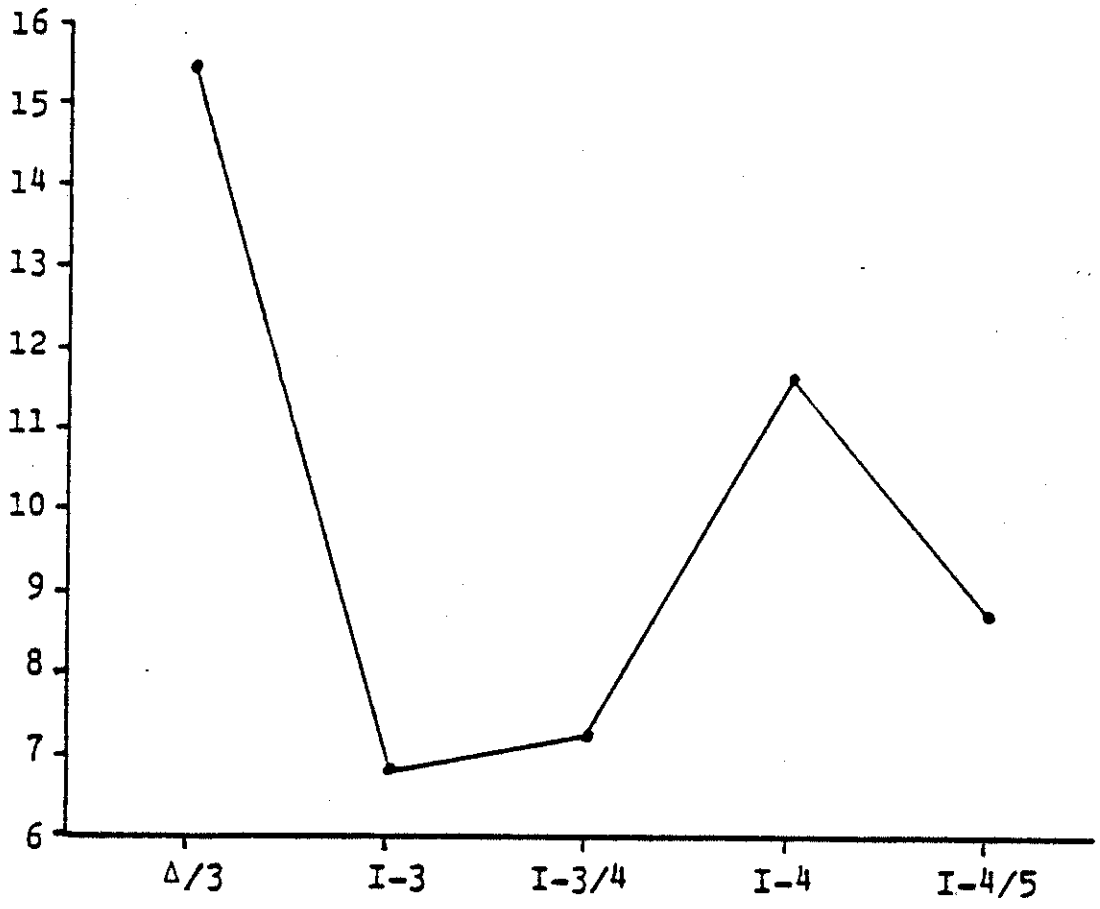
Note. NS = Not Significant

INS = Insufficient F

the total O score. Trend analysis performed using O-construct and O-people scores found a significant quartic trend (F = 5.925, df = 3, 69, $p < .05$) of the O-people score across ego levels.

The above statistics were also computed for the intuitive TPR ratings of the Loevinger protocols using the structural-transitional criteria (as outlined above). A corollary to the first hypothesis was that the level of complexity (FIC) would be represented distinctly at each of Loevinger's ego levels scored in the manner described above. A simple ANOVA was computed between the FIC scores of each of the structural-transitionally scored ego levels which indicate that a significant difference does exist between these ego levels (F = 3.689, df = 4, 72, p = .0089) as shown in Figure 8. A posteriori Newman-Keuls tests were performed to assess the difference between specific ego levels. The Ritual-traditional level was found to have a significantly higher FIC score than the Individualistic, Self-aware, and Conformist levels ($p < .05$).

A corollary to the second hypothesis was that the level of ordinality (O) would be represented distinctly at each of Loevinger's ego levels scored using the structural-transitional criteria. A simple analysis of variance was not significant; no differences were found among ego levels in regard to ordinality. A priori contrasts between specific ego levels were also not significant (see Figure 9).



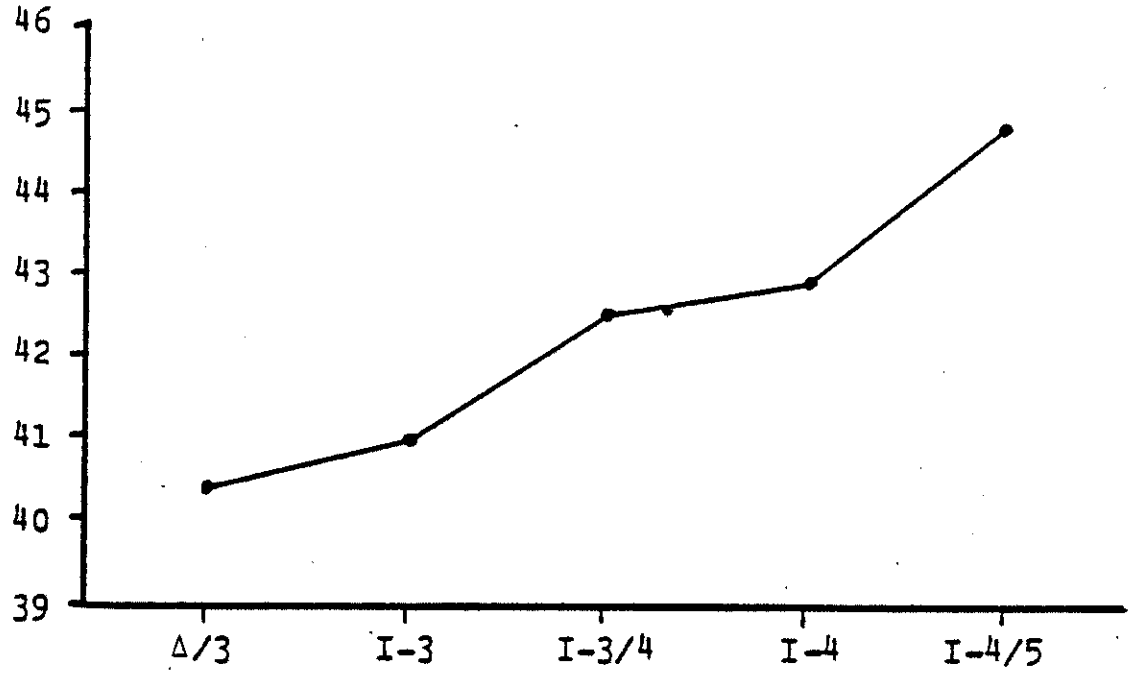
Stage	Mean	Standard Deviation
Δ/3	15.50	5.50
I-3	6.80	4.18
I-3/4	7.23	5.71
I-4	11.59	5.24
I-4/5	8.75	5.23

A priori contrasts: $\Delta/3 > I\text{-}3$, $t = 3.36$, $p = .001$
$I\text{-}4 > I\text{-}3/4$, $t = -1.69$, $p = .09$

Analysis of variance: $F = 3.689$, $p = .0089$

A posteriori contrasts: $\Delta/3 > I\text{-}4/5, I\text{-}3/4, I\text{-}3$ $p < .05$
(Newman-Keuls) $I\text{-}4 > I\text{-}3/4, I\text{-}3$ $p < .05$

Figure 8. FIC-Total by Ego Stages
Structural-Transitional Scoring



Stage	Mean	Standard Deviation
Δ/3	40.50	5.96
I-3	41.10	5.69
I-3/4	42.64	6.15
I-4	43.00	6.16
I-4/5	44.88	6.27

A priori contrasts: no significant contrasts

Analysis of variance: $F = .769$, $p = .55$

A posteriori contrasts: no significant contrasts

Figure 9. O-Total by Ego Stages, Structural-Transitional Scoring

A corollary to the third hypothesis stated that the pattern of FIC scores across ego levels, determined by structural-transitional scoring, would increase linearly. A trend analysis (Pedhazur, 1982) was performed to investigate this hypothesis. No significant findings emerged from this analysis (see Table 11). The relationship between FIC and structural-transitionally scored ego levels does not significantly resemble linear, quadratic, cubic, or quartic patterns. Trend analysis computed for TPR by FIC-construct and FIC-people also found no significant relationships (see Table 11).

Table 3

Trend Analysis, FIC and O by Ego Stages, Structural-transitional Scoring

Variable	Multiple Correlation R^2	Significance	Trend Analysis Pattern	F	Significance
FIC-Construct	.02	NS	--	--	--
FIC-People	.05	NS	--	--	--
FIC-Total	.05	NS	--	--	--
O-Construct	.03	NS	--	--	--
O-People	.11	$p < .05$	linear	3.61	NS
			quadratic	2.62	NS
			cubic	INS	--
			quartic	2.91	$p < .05$
O-Total	.06	NS	--	--	--

Note. NS = Not Significant

INS = Insufficient F

A corollary to the fourth hypothesis stated that the pattern of O scores across structural-transitionally scored ego levels would resemble a steadily increasing sinusoidal curve. A trend analysis was computed to investigate this hypothesis. No significant trends were found for the total O scores across ego levels, nor for the O-construct score. A significant quartic trend ($F = 2.91$, $p < .05$) was found between the O-people score and the level of ego development determined using the structural-transitional scoring (see Table 3).

Several additional statistics were calculated in an attempt to further understand the data. Pearson correlation coefficients between the subscores relating to FIC (FIC-people, FIC-construct) and O (O-people, O-construct) were determined. FIC-people is correlated to FIC-construct at the .81 level ($p < .05$). O-people is correlated to O-construct at the .38 level ($p < .05$).

A 2 X 2 matrix was created by dividing subjects into groups on the basis of mean splits of their FIC and O scores. Four groups were established. Group one scored below the mean on both FIC and O scores. Group two scored below the mean on FIC and above the mean on O. Group three scored above the mean on FIC and below the mean on O. Group four scored above the mean on both measures. A group by ego stage contingency table was established and a Chi-square was calculated. The Chi-square was 14.64 which was not significant ($p = .28$).

CHAPTER IV

Discussion

Loevinger's ego levels were examined for their structural qualities as outlined by cognitive developmental theory. It was hypothesized that cognitive complexity (as measured by the FIC score from the Rep test) and the organization of cognitive constructs (as measured by the O score from the Rep test) could be considered "process" variables that would measure qualities of ego structures. Loevinger (1976) asserts that cognitive complexity increases with ego level and that greater sophistication in ego development allows one to account for increasingly differentiated experience in an organized meaning structure.

The present study provides little support for the structural assumptions of Loevinger's stage model. Cognitive complexity was not found, in this study, to increase with stage. In fact, the least sophisticated ego level, Ritual-traditional, had the highest mean complexity score (see Appendix C), while the most sophisticated ego level, Individualistic, had the lowest mean complexity score. These findings may either suggest that ego development can proceed independently of level of cognitive complexity or serve as evidence undermining the structural and developmental assumptions of Loevinger's theory.

If the structural developmental underpinnings of Loevinger's model are untenable, much of the power of the theory is lost. The coherent organization of stages, the mechanisms of change and development, as well as the intervention strategies implied by the model all heavily rely on structural assumptions. Without structural assumptions, Loevinger's theory describes a progression of personality traits that tend to arise at different ages. This would offer little to the current knowledge of ego development.

Loevinger has tied the utility of her theory to the validity and reliability of her sentence completion instrument. While she rejects the notion of criterion validity due to the inadequacy of any measure to describe completely the ego construct, it is not unreasonable to expect that her model meet the more basic assumptions of development described by both Werner and Loevinger herself. Werner (1957) posits increasing differentiation and complexity with higher developmental levels. Loevinger (1976) specifies that cognitive complexity will increase with each of her stages. Since the findings of this study show that Loevinger's model fails to meet these basic assumptions, the model clearly cannot be viewed as structural and may merely describe a succession of age related traits.

Before a wholesale rejection of the structural notion of Loevinger's theory is contemplated, one must first examine the construct validity of the sentence completion instrument

to determine if it, in fact, adequately characterizes the ego structure of persons in a manner consistent with her theory. Appendix B offers specific criticisms and possible revisions of the Sentence Completion Test that serve to increase the instrument's ability to tap the structural qualities of persons' egos.

Despite possible improvements in the Sentence Completion Test, the theory and instrument, as currently used, do not appear to meet assumptions needed in a structuralist theory. The loss of the underlying theory base upon which Loevinger's model is based leaves an empirically derived phase sequence and an associated instrument. Without the assumption of equilibrated structures at each stage, Loevinger has identified a series of character traits that tend to arise with age.

Due to the rejection of construct validity by Loevinger, one is asked to take on faith that the "ego" is being measured. The significant correlations between the SCT and intelligence, and some measures of verbal fluency call into question whether the SCT is better described as an imperfect measure of intelligence. Certainly, the low and insignificant ($\underline{r} = -.05$, $\underline{p} > .05$) correlation between SCT and cognitive complexity and differentiation in the various stages would suggest that the SCT measures some trait related to intelligence rather than ego developmental status.

The clear support for sequentiality in Loevinger's stages may reflect the saliency of age related social expectations

rather than any epigenetic sequence of equilibrated structures. Much like Erik Erikson's developmental tasks, Loevinger may have identified a sequence of psychosocial tasks or demands.

Although the exact construct that the Sentence Completion Test measures is not currently understood, it is clear that there is little or no support for the structural underpinnings of her theory. Her stages do not appear to function as equilibrated structures and therefore do not follow the assimilative and accommodative adaptive processes as outlined by Piaget. Nor can one depend on stability of the "world view" of each stage across contexts. Finally, lack of a relationship between ego stage and cognitive complexity highlights the fact that the general developmental assumptions (e.g., those outlined by Werner, 1957) found in most stage developmental models cannot be attributed to Loevinger's model.

Much of the discussion has focused on the ego developmental model in relation to cognitive complexity. The results of the O score, or level of organization in the construct system, deserve additional attention. Examination of the means of the O score across the progression of ego levels shows an upward trend in both methods of ego level scoring. This progression is consistent with the developmental assumptions of Werner (1957). Analysis of variance and a posteriori contrasts found no distinction between any of the stages. This is largely explained by a narrow range of mean O scores between 40 and 45 and an overall sample mean of 43.37. The

average O score for most college samples ranges between 34 and 38 (Doster, personal communication, December 1983). It is unclear as to the reason for the limited range and higher mean score in this sample, particularly since the majority of the subjects were taken from a two year community college. Samples with a greater range of O scores will be required to confirm the general upward trend in the data.

In contrast to the FIC score, a breakdown of the ordinality score between that derived from the constructs and that from people has been fruitful. The two subscores are significantly correlated ($r = .38$, $p < .05$), but at a level much lower than the contrasting correlation of FIC subscores, leading to a consideration that the two are either inadequate measures of the same variable or measures of two different constructs.

Trend analysis has found a quartic trend for the Ordinality-people score across ego levels. Multiple correlations for the O trends by ego levels are .37 ($p < .05$) and .34 ($p < .05$) respectively for traditional and structural-transitional scoring methods. These findings are consistent with the previously stated hypotheses but, although statistically significant, can only be considered trends in the data. The standard deviation of the O-people score are quite large and changes in the slopes are often minimal when the means at each stage are plotted.

This trend points to a tendency for the organization of an individual's cognitive conception of people to change significantly as a consequence of movement into or out of

transition. This lends mild support to the structural assumptions of Loevinger's model and adds cognitive changes during transitions to the affective components identified by Nelson (1979). Although this trend has significant implications, it arises out of a cross-sectional design and will require longitudinal replication prior to its application to individual development.

Another approach taken to examine the relationship between cognitive complexity and organization and ego development follows the work of Landfield and Barr (1980). Combining mean splits of the FIC and O scores they assigned subjects to four separate quadrants. Landfield and Barr found persons with high FIC scores combined with low O scores to be relatively more handicapped in three types of interpersonal understanding. Angilillo (1982), in a study of depression, found greater pathology in subjects whos relative level of cognitive complexity is most descrepant from their relative level of ordinality. Since increases in interpersonal understanding and more effective coping are predicted with more sophisticated ego development, subjects were assigned to quadrants as a means of examining the interaction between FIC and O in relation to ego level.

A quadrant by ego level table (see Appendix C) was prepared and a Chi-square statistic was computed. The Chi-square was not significant ($\chi^2 = 14.64$, $p = .28$). Two

patterns were ascertained, though, that deserve elaboration. First, the percentage of subjects at each stage falling into the quadrant identified by Landfield and Barr as having the poorest interpersonal understanding decreased as ego level increased. This greater interpersonal skill at higher ego levels is predicted by the theory.

The second trend is actually one identified previously in the analysis of variance of FIC by ego level. The modal quadrant for each ego level followed a pattern easily predicted by simply using the FIC pattern seen earlier. What is important about this pattern, here, is the relative lack of influence that O score seems to assert. Since the O score shows little variance in the sample, it appears that major deviations of O from the mean can be considered significant, but its significance may be independent of developmental status. As such, O may change little in the face of developmental growth but its change may mark severe psychological stress or pathology. Of course, this hypothesis will require more direct empirical testing.

A final consideration concerns the issue of domains. Bayley (1975) asserts that "different abilities and qualities of the personality become mature at different times in the life of an individual. Each characteristic may be thought of as having its own schedule" (p. 15). In stage developmental theory, Turiel (1978) identifies these independent lines of

development as "domains." He states "that thought is organized (and changes sequentially) within a domain and not necessarily across domains" (p. 45).

The possibility exists that, although Loevinger asserts a relationship between cognitive complexity and ego development, the two variables actually represent two separate domains. The data here suggest a relationship but the strength of the relationship is unclear. Other research has failed to confirm a relationship between cognitive complexity and ego development. Orlofsky and Ginsberg (1981) found no relationship between intimacy status derived from Erikson's model and cognitive complexity. Deitch and Jones (1983) found no relationship between ego development and the FIC score.

Blasi (1976) states that "cognitive structures are important in providing the individual with a more or less wide range of alternatives. Where within that range, personality in fact develops is determined by different factors and different rules" (p. 45). Whether these are two domains, as Turiel suggests, a limited relationship as Blasi asserts, or a more direct influence as Loevinger states has yet to be determined, but the limited relationship postulated by Blasi receives the most support from this study.

Conclusion

This study examined the structural aspects of Loevinger's theory of ego development. Loevinger describes a milestone

sequence of psychological characteristics that arise in a curvilinear fashion at different periods in development. The sequence of successive dominant characteristics marks the stages outlined in Loevinger's model. Empirical validation of her model focuses on confirming the sequence of stages and the emergence of successive "milestone" variables at each of those stages.

This empirical approach does not directly address the structural changes presumed in Loevinger's theory. Such structural changes were hypothesized in this study to be measured directly by "process" variables. Process variables are related in systematic ways to the progression of structural change. Loevinger identifies one variable that follows this process pattern. Cognitive complexity was assumed to increase with stage. A second process variable, that of cognitive organization, was hypothesized to vary systematically as an individual progresses through transitions. Cognitive structures at each stage were expected to show distinctive levels of each variable.

A sample of 73 college students was studied, representing five of the nine full stage and transitional levels identified by Loevinger's instrument, the Washington University Sentence Completion Test. An adaptation of the sentence completion scoring system was also computed using criteria derived from structural-developmental theory. Cognitive complexity and

construct organization were computed using the Role Construct Reperatory Test (Rep test).

Results of this study lend only partial support to the structural assumptions underlying Loevinger's theory. Cognitive complexity was found to be represented distinctly at the various stages only when the structural-transitional scoring system was utilized. Several problems are identified in Loevinger's scoring system that appear to diminish the instrument's construct validity. The ogive cutoff scores for assigning TPR ego levels were described as misrepresenting the actual capabilities of those rated at the Ritual-traditional level and below. A bimodal distinction of FIC scores at the Ritual-traditional level led to speculation that subjects experiencing transition at higher stages may be misrated at a lower level. Several sources of error were found due to cohort effects, demand characteristics of the individual stems, and disadvantages of the empirical approach to assigning ratings to individual responses.

Possible revisions in the model were suggested, in light of further evidence that the Conformist and Self-Aware levels were not well differentiated as stable and transitional stages. The organization of constructs was examined and a quartic relationship was found between ego level and organization of subjects' conceptualizations of persons. This finding suggests a significant change in slope after each full stage and

transitional level. The organization of structures at each level appears to change as developmental movement begins.

Additional analysis examining the interaction of cognitive complexity and organization across ego levels led to two further conclusions. First, the pattern of scores identified by Landfield and Barr (1980) as the least sophisticated in interpersonal understanding decreased in frequency with increasing ego level. This trend lends support to the sequence of Loevinger's model. Second, when subjects are placed in quadrants derived from mean split FIC and O scores, the pattern of scores appears uninfluenced by the level of organization. It is hypothesized that extreme deviations of O may be more related to pathology than to normal development.

The current study is limited due to its cross-sectional design. Replication using a longitudinal design is needed to further examine the trends illuminated in this study. Loevinger's instrument would benefit from revision designed to make it more consistent with structural assumptions and less reliant on empirical classification of response. It was suggested that the stage model may need revision designed to make each stage distinct in its level of process variables.

Appendix A

Test Battery

FORM 2

USE OF HUMAN SUBJECTS

INFORMED CONSENT

NAME OF SUBJECT: _____

1. I hereby give consent to Jim Harrison/Joseph Doster to perform or supervise the following investigational procedure or treatment:

You will be asked to complete two questionnaires: the Sentence Completion Test and the Role Construct Repertory Test.

2. I have (seen, heard) a clear explanation and understand the nature and purpose of the procedure or treatment; possible appropriate alternative procedures that would be advantageous to me (him, her); and the attendant discomforts or risks involved and the possibility of complications which might arise. I have (seen, heard) a clear explanation and understand the benefits to be expected. I understand that the procedure or treatment to be performed is investigational and that I may withdraw my consent for my (his, her) status. With my understanding of this, having received this information and satisfactory answers to the questions I have asked, I voluntarily consent to the procedure or treatment designated in Paragraph 1 above.

_____
DATE

SIGNED: _____ SIGNED: _____
WITNESS SUBJECT

or

SIGNED: _____ SIGNED: _____
WITNESS PERSON RESPONSIBLE

_____
Relationship

Instructions to persons authorized to sign:

If the subject is not competent, the person responsible shall be the legal appointed guardian or legally authorized representative.
If the subject is a minor under 18 years or age, the person responsible is the mother or father or legally appointed guardian.
If the subject is unable to write his name, the following is legally acceptable: John H. (His X Mark) Doe and two (2) witnesses.

This study examines the relationship between personality styles and interpersonal judgement. If you choose to participate, you will be asked to complete two questionnaires. One questionnaire will ask you to evaluate the differences and similarities of people that you know. The other questionnaire will ask you to complete thiry-six unfinished sentence stems. You may experience mild anxiety while filling out the questionnaires and the experience may be slightly frustrating. You may also experience some insight into how you perceive other people. Your responses will be kept confidential and the questionnaires you complete will be identified only by a numbered code. You are free to withdraw from the study at any time without consequence. If you have any questions or concerns at this time, please ask the experimenter. If you choose to participate in this study, please complete and sign the Informed Consent Form.

INSTRUCTIONS FOR THE ROLE CONSTRUCT REPERTORY TEST

FIRST STEP:

Find the slanted lines in the upper left-hand corner of the RESPONSE SHEET.

1. Write the first name of your mother or the person who has played the part of your mother where it says mother.
2. Write the first name of your father or the person who has played the part of your father where it says father.

Do your best to find people who fit each description. Star (*) those names which do not fit very well.

3. Write the name of your brother nearest your own age, or the person who has played the part of such a brother.
4. Write the name of your sister nearest your own age, or the person who has played the part of such a sister.

If you cannot remember a person's first name, write the last name or put down something about the person which will remind you who it is.

5. Your wife (or husband) or closest present girl-friend (or boy-friend). Do not repeat the name of anyone listed above.
6. Your closest present friend of the same sex as yourself. Do not repeat names.
7. A person with whom you have worked or associated who, for some unexplainable reason, appeared to dislike you. Do not repeat names.
8. The person with whom you usually feel most uncomfortable. Do not repeat names.

If you know two people with the same first name, use a last initial as well.

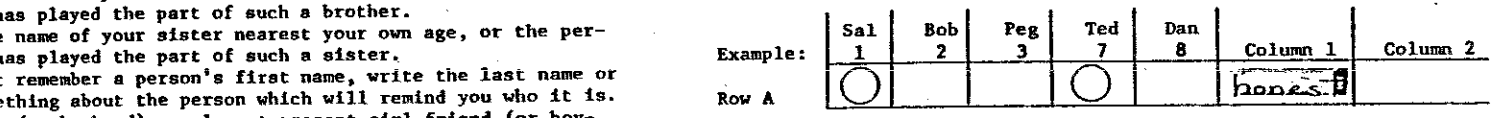
9. The person you have met whom you would most like to know better. Do not repeat names.
10. The teacher whose point of view you have found most acceptable. Do not repeat names.
11. The teacher whose point of view you have found most objectionable. Do not repeat names.
12. The most unsuccessful person you know personally. Do not repeat names.
13. The most successful person you know personally. Do not repeat names.
14. The happiest person you know personally. Do not repeat names.
15. The unhappiest person you know personally. Do not repeat names.

SECOND STEP: Below your list of names, find Row A. Notice that Row A has Think carefully about these two people

ARE THE TWO PEOPLE ALIKE IN SOME ONE WAY? OR

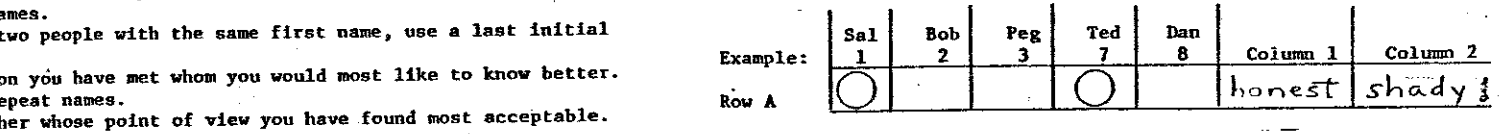
If they seem alike to you in some one way, write the way in which these two people are alike in the pink space (Row A, Column 1).

RESPONSE SHEET



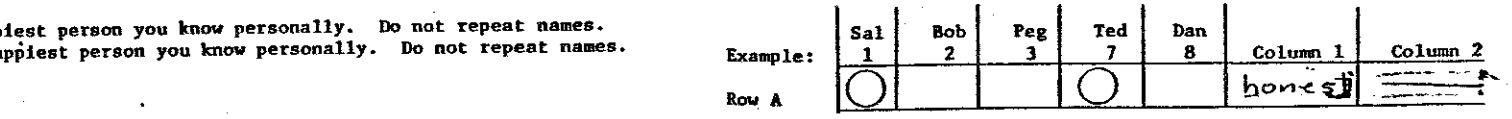
Now look across your list of acquaintances. Is one of your acquaintances different from the two who are alike? If so, write in the green space (Row A, Column 2) the way in which this person is different from the two who are alike.

RESPONSE SHEET



If you cannot find an acquaintance on your list who is different from the two who are alike, leave the green space blank (Row A, Column 2).

RESPONSE SHEET



AFTER YOU FINISH ROW A, COMPLETE ROW B, ROW C, ETC. Follow the same instructions.

two yellow circles. Look at the names above the yellow circles.

ARE THE TWO PEOPLE DIFFERENT IN SOME ONE WAY?

If you cannot find a way in which the two people are alike, think about them once again. If they are not alike in some way, perhaps the two people are different in some one way. If you see that the two people are different in some way, write in the pink space (Row A, Column 1) the description which fits the person in the left circle.

RESPONSE SHEET

	Sal 1	Bob 2	Peg 3	Ted 7	Dan 8	Column 1	Column 2
Example: Row A	◯			◯		warm	

Then, write in the green space (Row A, Column 2) the description which fits the person in the right circle.

RESPONSE SHEET

	Sal 1	Bob 2	Peg 3	Ted 7	Dan 8	Column 1	Column 2
Example: Row A	◯			◯		warm	silly

If you cannot see a similarity or a difference for the two people, leave blanks.

AFTER YOU FINISH ROW A, COMPLETE ROW B, ROW C, ETC. Follow the same instructions.

THIRD STEP:
For Row A, look over the pink description you wrote under Column 1 and the green description you wrote under Column 2. Notice that between your two descriptions is a rating scale -6-5-4-3-2-1 0 +1+2+3+4+5+6. Use your descriptions and this rating scale to give your impression of each person in Row A.

Example:

RESPONSE SHEET

	Mother	Father	Brother	Sister	Friend	Column 1	Column 2
Row A	-5	+2	+4	-6	0	Formal -6-5-4-3-2-1	+1+2+3+4+5+6 Humorous
Row B	-3	-6	0	-2	-3	Honest -6-5-4-3-2-1	+1+2+3+4+5+6 Shady
Row C	+6	-2	-5	+2	+2	Dumb -6-5-4-3-2-1	+1+2+3+4+5+6 Dull

In the example above, both mother (-5) and sister (-6) are rated as being "formal". Since sister has a higher rating than mother, this indicates that sister is more "formal" than mother. On the other hand, both father (+2) and brother (+4) are rated as being "humorous". Since brother has a higher rating than father, this indicates that brother is more "humorous" than father.

Begin on Row A and give your impression of your mother using the rating scale. Then give your impression of your father. Then rate your brother, sister and so on till all of the spaces in Row A are filled. Then go to Row B. Use your descriptions for Row B and the rating scale to give your impression of your mother, then father, then brother, then sister and so on. Go on to Row C, etc. until you have filled in all of the squares.

ZERO (0) RATINGS:

- Use a 0 rating when you do not know the person well enough to give your impression.

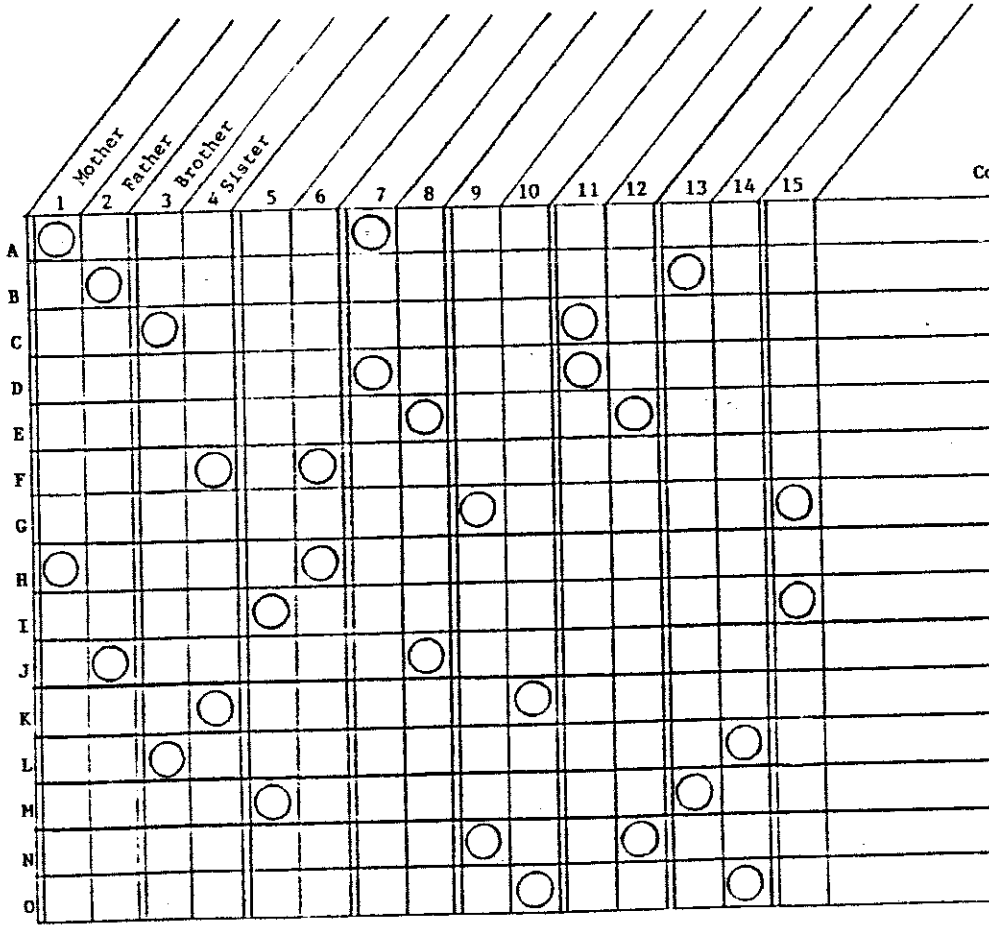
- Use a 0 rating when neither description fits the person you are trying to rate.

ROLE CONSTRUCT REPERTORY TEST

Name _____

Marital Status _____ Education _____

Occupation _____ Age _____



RESPONSE SHEET

	Column 1	Column 2
A	-6-5-4-3-2-1	+1+2+3+4+5+6
B	-6-5-4-3-2-1	+1+2+3+4+5+6
C	-6-5-4-3-2-1	+1+2+3+4+5+6
D	-6-5-4-3-2-1	+1+2+3+4+5+6
E	-6-5-4-3-2-1	+1+2+3+4+5+6
F	-6-5-4-3-2-1	+1+2+3+4+5+6
G	-6-5-4-3-2-1	+1+2+3+4+5+6
H	-6-5-4-3-2-1	+1+2+3+4+5+6
I	-6-5-4-3-2-1	+1+2+3+4+5+6
J	-6-5-4-3-2-1	+1+2+3+4+5+6
K	-6-5-4-3-2-1	+1+2+3+4+5+6
L	-6-5-4-3-2-1	+1+2+3+4+5+6
M	-6-5-4-3-2-1	+1+2+3+4+5+6
N	-6-5-4-3-2-1	+1+2+3+4+5+6
O	-6-5-4-3-2-1	+1+2+3+4+5+6

Sentence Completion for Women

Instructions: Complete the following sentences:

1. Raising a family
2. Most men think that women
3. When they avoided me
4. If my mother
5. Being with other people
6. The thing I like about myself is
7. My mother and I
8. What gets me into trouble is
9. Education
10. When people are helpless
11. Women are lucky because
12. My father
13. A pregnant woman
14. When my mother spanked me, I
15. A wife should
16. I feel sorry
17. When I am nervous, I

SENTENCE COMPLETION FOR WOMEN

18. A woman's body

19. When a child won't join in group activities

20. Men are lucky because

21. When they talked about sex, I

22. At times she worried about

23. I am

24. A woman feels good when

25. My main problem is

26. Whenever she was with her mother, she

27. The worst thing about being a woman

28. A good mother

29. Sometimes she wished that

30. When I am with a man

31. When she thought of her mother, she

32. If I can't get what I want

33. Usually she felt that sex

34. For a woman a career is

35. My conscience bothers me if

36. A woman should always

SENTENCE COMPLETION FOR MEN

Name_____

Instructions: Complete the following sentences.

1. Raising a family

2. Most women think that men

3. When they avoided me

4. If my mother

5. Being with other people

6. The thing I like about myself is

7. A man's job

8. If I can't get what I want

9. I am embarrassed when

10. Education

11. When people are helpless

12. Women are lucky because

13. What gets me into trouble is

14. A good father

15. If I were king

16. A wife should

17. I feel sorry

18. When a child won't join in group activities

19. When I am nervous, I

20. He felt proud that he

21. Men are lucky because

22. When they talked about sex, I

23. At times he worried about

24. I am

25. A man feels good when

26. My main problem is

27. When his wife asked him to help with the housework

28. When I am criticized

29. Sometimes he wished that

30. When I am with a woman

31. When he thought of his mother

32. The worst thing about being a man

33. Usually he felt that sex

34. I just can't stand people who

35. My conscious bothers me if

36 Crime and delinquency could be halted if

Evaluation of Questionnaires

Role Construct Repertory Test

1. How difficult was this questionnaire to complete? (circle one)

   Very easy 1 . . 2 . . 3 . . 4 . . 5 Very difficult

2. How enjoyable was this questionnaire to complete?

   Very enjoyable 1 . . 2 . . 3 . . 4 . . 5 Not at all enjoyable

3. Were you able to complete this questionnaire seriously and sincerely? Yes____ No____ If no, why?_____

Sentence Completion Test

4. How difficult was this questionnaire to complete?

   Very easy 1 . . 2 . . 3 . . 4 . . 5 Very difficult

5. How enjoyable was this questionnaire to complete?

   Very enjoyable 1 . . 2 . . 3 . . 4 . . 5 Not at all enjoyable

6. Were you able to complete this questionnaire seriously and sincerely? Yes____ No____ If no, why?_____

- - - - - - - - - - - - -

7. If this were your own study, would you include the questionnaires that you have just completed? Yes_____ No_____ If no, why?_____

OPTIONAL **Permission to Provide SAT Scores**

I, _____ (your name) grant permission to _____ (your college or univ.) to provide to Jim Harrison or Joseph Doster my Verbal subtest score on the Scholastic Aptitude test.

_____ date _____ signature

To the best of my knowledge, my SAT verbal score was _____.

Appendix B

One adaptation made by the raters in the process of scoring the SCT was to assign intuitive TPRs based on structural assumptions of development and transition (outlined in Method section). The validity of this approach was supported in that the analysis of variance examining level of cognitive complexity of subjects rated in such a manner found significant differences between various stages. On closer examination, the structural-transitional scoring system served to accentuate those differences that existed previously using Loevinger's traditional scoring method.

Although it would be reasonable to approach this data with a wary eye regarding the validity of the Rep test, the finding is that increased structural emphasis in the scoring yields richer results and more strongly suggests that the SCT instrument would benefit from further refinement. More emphasis on rating using theoretical constructs rather than psychometric criteria has resulted, in this study, in more adequate differentiation between several of the stages.

Several aspects of the scoring system, chosen for their psychometric value, have introduced error into the system and appear to have led to ratings of ego level inconsistent with actual theory. The first such aspect involves the cutoff scores in assigning TPRs from the cumulative ogive of stem ego ratings.

Loevinger states that the TPR ego level assignment "means, approximately, that that is the highest level at which he is capable of functioning consistently" (Loevinger & Wessler, 1978, p. 34). Using Loevinger's automatic rules for assigning TPRs on Integrated (I-6) level protocol requires at least two stems rated at I-6. An Autonomous (I-5) level protocol requires at least five stems rated at I-5 or above. An Individualistic (I-4/5) protocol requires at least six stems rated at I-4/5 or above. A Conscientious (I-4) protocol requires at least 12 items rated at I-4 or above. A Self-Aware (I-3/4) protocol requires at least 15 stems rated at I-3/4 or above. Each of the above cutoff scores can be construed as consonant with Loevinger's "highest consistent functioning" criterion, although those rated at I-6, I-5, and I-4/5 more likely have a modal stem rating different than the assigned TPR.

It is at the lower stages that the ogive cutoff rules violate the "highest consistent functioning" criterion. An Impulsive (I-2) protocol requires only six stems rated at I-2, although more stems may actually be rated at a higher level. A similar circumstance holds true for the Self-Protective (Delta) and Ritual-Traditional (Delta/3) levels. Of the six individuals with a TPR rated Delta/3 in the present sample, each demonstrated consistent functioning at the Conformist (I-3) level. The number of stems rated at I-3

in the Delta/3 protocols ranged from 16 to 23. Thus those persons given a TPR at Delta/3 actually demonstrated a tendency to generate an I-3 level response at double to triple the rate that they generated Delta/3 level responses or below. The consistency of ratings at I-3 do not result from items defaulted to I-3 due to unintelligible or omitted responses. The highest number of ratings defaulted to I-3 in any of the sample protocols was four, and none were defaulted in any of the Delta/3 protocols.

It is clear that the "highest consistent functioning" criterion is not well represented by Loevinger's ogive cutoff rules. It appears that these rules serve the psychometric purpose of assigning a single TPR rating to specific protocols within a distribution of scores, yet does little systematically to assign a single level based on structural developmental assumptions. Loevinger recognizes the value of the clinician's judgment based on a variety of divergent signs (Loevinger & Wessler, 1978) and had hoped her cutoff rules reflected those considerations. Given that her strongest assertion, that cognitive complexity increases with stage, has not been supported in this study, she has not been altogether successful in that pursuit.

One possible result of the ogive rules, as well as an anomaly in the structural-transitional adaptation of the TPR assignments, is the assignments of the Delta/3 level to individuals who may actually be in transition at higher

levels. Loevinger (1976) acknowledges that "regression under stress probably takes place with respect to all facets" of ego development (p. 200). Regression in the service of the ego is a notion long recognized by ego psychology, and Nelson (1979) has described the level of anxiety and stress concomitant with cognitive developmental stage transition.

The phenomenon of stage transitions has consistently perplexed stage theorists. A difficulty arose for Kohlberg when he and Kramer found that individuals regressed to stage two (instrumental hedonism orientation) in moral development after having attained stage four (law and order orientation) (Munson, 1979). Kohlberg's solution was to postulate a transitional level, stage 4 1/2 (Absolute Relativism), between stages 4 (Law and Order) and 5 (Social Contract). It is a difficult task to assess the structure of one's functioning (either cognitive or affective) when the structure is in transition and, by definition, is not stable. The relativism evident in the transition between Kohlberg's fourth and fifth stages was easily confused with less sophisticated reasoning. The same may be true in the domain of ego development. Those in transition at higher levels may be mistaken for those at less sophisticated levels.

In examining the relationship between FIC and TPR, it is noted that five of those rated at Delta/3 had FIC scores of five or below. The three remaining subjects received scores of 16 or above (overall sample mean = 9.7). Elimination of

the higher FIC individuals, assumed to be representative of transition at higher levels, leaves a pattern of mean FIC scores consistent with the developmental progression described previously that shows regression (low FIC) at transitional levels. Further research into this question would be required to confirm this trend, but it identifies a possible direction of revision in Loevinger's instrument.

Another possible area of revision concerns the degree of error introduced by the SCT instrument. The first source of error results from the bias introduced from the sample used to develop the scoring system. The responses made by individuals in this sample were used to develop categories which were then assigned specific ego ratings. The assignment of rating, though, could not be divorced from the cultural context of the 1960s from which the responses arose. Similar responses made by individuals in this decade do not reflect the same levels of sophistication. An example of this phenomenon is reported by Sebald (1981). He compared the degree to which "popularity" was of concern to teenagers in 1960 and 1976. Only minor changes have occurred in the desire for popularity among teenagers. The most distinct difference between the two cohorts was found in what characteristics were considered important in achieving popularity. In 1960, being friendly and courteous was most important to 50 percent of the subjects. This concern decreased in importance in the 1976 sample and primary

emphasis was made on peer conformity. Strangely, though, this conformity frequently was combined with references to being an individual. In Loevinger's scheme, concerns of friendliness and courtesy are rated I-3. Concerns with conforming to standards are rated at I-3/4 and individuality is an issue of I-4.

Other examples arise out of issues given much media attention. In 1968, a woman who recognized the conflict between choosing a homelife or career was quite sophisticated. In the 1980s, the majority of high school girls have been exposed to the issue in some form. The mention of this issue, though, results in a rating of I-4 or above, independent of the cultural milieu from which it arises. Changes in cultural attitudes regarding sex roles, sexual attitudes, morality, religion, etc. and increased familiarity with psychological jargon among the general population have led the raters in this study to question the adequacy of Loevinger's ratings due to the different context from which the current responses are produced.

A second source of error is introduced by a tendency to attribute structure to some specific contents. For example, in response to the stem "My mother and I . . .," two seemingly comparable completions were; ". . . don't get along." and ". . . get along OK." Yet the response reflecting negative interaction is classified as Delta and the response reflecting a positive relationship received an I-3 rating. The reality

of the actual relationship is never considered. Another example, in response to "Education . . .," are the completions ". . . is useless and a lot of bother," and ". . . is useful." Attributing negative value to education leads to a Delta rating. Attributing positive value to education leads to an I-3 rating. Although a similar construct is being evaluated in each response (useful versus useless), it appears that the content of the evaluation determines the rating rather than the underlying structure.

A third source of error derives from Loevinger's choice to take an empirical approach to assigning the ratings associated with individual responses. "The decision as to what level a category should be placed in is based on the distribution of TPRs of the responses rated in that category . . . The I-level most overrepresented in that category, as compared to the total sample, is the level where the category should be classed" (Loevinger & Wessler, 1978, pp. 24-25). This empirical choice has been described by Hewer (1982) as a "sign" approach to measuring ego structure. Since a wide range of ego levels can give the same response to a single item, variation in structure is not discriminated well by each item. The SCT assigns a rating that statistically is related most, regardless of the actual ego structure that the response represents. Two forms of error result from this third general source. One type occurs when the statistically assigned rating is inconsistent with the

theoretically derived rating. Error is also inherent in Loevinger's statistical approach in that a proportion of the distribution of TPRs associated with a given response is not represented by the eventual rating assigned to it.

The fourth major source of error occurs due to the demand characteristics of specific sentence stems as well as of the total instrument. Just as in TAT stories, specific stems pull for certain themes. The stem "What gets me into trouble is . . ." tends to elicit more regressed and less sophisticated responses since themes of "being in trouble" are often written in regard to an authority. Low pulls exist also for such items as "A woman's body . . .," "Men are lucky because . . .," and "If I can't get what I want . . ." Some items pull for higher level responses. Examples are "Raising a family . . .," and "A wife should . . ." Avoiding specific pulls in stems would be difficult and Loevinger appears to have stems that pull for a wide range of ego levels. Unfortunately, the nature of the scoring system tends to assign ratings consistent with TPR level of those most likely to generate that response. At times, individuals generating a response theoretically consistent with a specific stage fail to receive that stage rating because the pull of the item has influenced others to generate similar responses.

A variation of these demand characteristics of specific stems are those stems whose pull for specific responses is

so strong that only a narrow range of responses is generated. Examples of such items are "When my mother spanked me, I . . ." which elicits the response "cried" from a large number of individuals at various ego levels. Loevinger's solution to these poor discriminating items is to make find distinctions between responses that are not well justified by her theory. The response "cry" is rated I-2; "cry and pout" is rated Delta; and "cried" is rated at I-3.

Differences also exist in the demand characteristics of the SCT due to the use of different stems for men and women. Unique male stems tend to elicit socio-political concerns. "Crime and delinquency could be halted if . . .," and "If I were king . . .," are examples. Evidence of concerns for societal issues usually are rated at I-3/4 or above. Unique female stems include four issues related to mother and father which generally have a regressive pull and two stems concerning issues related to a woman's body which pull for I-3 and below. Although this situation superficially appears to favor men, the nature of the scoring system again fails to give credit for responses theoretically at higher ego levels if the item pull results in such responses being evident in less sophisticated protocols. As a result, a male generating a theoretically I-4 response may be assigned an I-3 rating for that item. Conversely for females, responses at a theoretically low ego level to items with a regressive pull will be scored higher if others also respond in a regressed manner. One possible

result of these demand differences are the reported sex differences showing women receiving TPR ratings one full stage to one-half stage higher than men (Magana, Whiteley, & Nelson, 1980).

Each of the above sources of error may, in itself, introduce a degree of error that can be compensated by the use of a large number of sentence stems. In combination, though, they lead one to raise questions regarding the construct validity of her measure. While interrater reliability is acceptable for her measure, the result may have questionable value due to its inability to assign ego levels consistent with her theory.

Although psychometric revisions of Loevinger's instrument may be needed to make it more consistent with her theory, revisions of her model may be needed in light of recent evidence, including the results of this study.

Holt (1980), along with Loevinger (1976), notes that the modal stage for adults in the U.S. is the Self-Aware (I-3/4) and adds that the huge proportion of subjects at this stage is evidence supporting its status as a full stage rather than a transitional level. Data from this study shows the I-3 and I-3/4 levels are the two stages that are least distinct from each other in level of cognitive complexity. Loevinger (1976) describes the Self-Aware level as "a stable position in mature life." This view is certainly not consistent with the structural-transitional view examined in this study.

Loevinger's (1976) description of stages asserts only two differences between the Conformist and Self-Aware positions. She notes an increase in self awareness, typically in terms of vague "feelings." Secondly, she describes appreciation of multiple possibilities in situations. Of particular importance is the "awareness of oneself as not always living up to the idealized portrait of social norms" (p. 19). It is questionable as to whether awareness of vague "feelings" constitute a significant movement away from the conformist position. Additionally, the movement is away from specific interpersonal expectations rather than "idealized social norms." The argument here is that I-3 and I-3/4 may represent variations of the same conformist theme and the distinction between them may not be tenable.

Appendix C

Means and Standard Deviations for FIC Scores and O Scores for Each Ego Level

Ego Level	FIC Score		O Score	
	Mean	SD	Mean	SD
Δ/3	12.000	7.969	41.400	6.580
I-3	8.875	4.390	40.625	6.116
3/4	8.025	5.718	41.675	6.049
I-4	11.6923	5.779	44.923	5.041
4/5	7.286	3.450	44.286	6.525
Total	8.973	5.694	42.370	5.987

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