

THE RELATIONSHIP BETWEEN
THE VOCATIONAL MATURITY
OF ADOLESCENT MALES AND
THEIR BIRTH ORDER POSITION

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CURRICULUM STUDIORUM

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INTRODUCTION

Secondary school students vary in their planning and preparation for post secondary school education and/or the world of work. Some students manifest a planned approach to post secondary school education and occupational choice as early as the first year of secondary school, whereas others seem to be floundering even in their senior year of secondary school.

Attempts to assist students to plan for their post secondary school education and/or vocational training continue to be made. Various devices which are purported to assist students are available; for instance, interest inventories, tests of aptitude and ability, and computerized programs which offer information on post secondary school education and careers.

This study is an investigation of some basic personality factors deemed to influence vocational development. Among those factors are self concept, social interest and birth order position. Two theories are examined, Super's theory of vocational development and Adler's theory of individual psychology. In Super's theory, it is argued that self concept is an important variable in vocational development. In Adler's theory, it is argued that birth order

position is related to the degree of social interest. In analyzing both theories, the author concludes that social interest is related to vocational development. It is further concluded that middle born children are more homogeneous in their development of social interest and thus in their vocational development than either firstborn or youngest born children. It is, therefore, hypothesized that middle born children manifest lower variance of vocational maturity scores than either firstborn or youngest born children. The testing of this hypothesis is reported in this thesis.

In Chapter I, the theories of Super and Adler are presented and juxtaposed to examine possible relationships between them. The statement of the problem and the hypothesis are presented at the conclusion of the chapter. The design of the study is discussed in Chapter II, and in Chapter III the results of the study are presented and discussed.

CHAPTER I

REVIEW OF THE LITERATURE

In this chapter, two theories are examined, Super's theory of vocational development, with emphasis on the effects of self concept on vocational development; and Adler's theory of individual psychology, with emphasis on the effects of birth order position on individual functioning. The chapter is concluded with a synthesis of the theories and a statement of the basic hypothesis.

1. Super's Theory of Vocational Development

Super deems vocational development to be an individual lifelong process¹ which is manifested in the performance of vocational behavior that changes with time and becomes increasingly more complex and more specific. The development of behavior is related to those behaviors already learned.²

The important elements in Super's theory are:

(1) life stages; (2) vocational developmental tasks; (3) self concept; and (4) vocational maturity. These elements will now be examined.

1 D. E. Super, et al., Vocational Development: A Framework for Research, New York, Teachers College Press, Columbia University, 1957, p. 42.

2 D. E. Super and P. L. Overstreet, The Vocational Maturity of Ninth-Grade Boys, New York, Teachers College, Columbia University, 1960, p. 1-2.

Life stages and vocational developmental tasks are closely interrelated. Life stages are defined by Super as age periods during which it is expected that the individual will learn to cope with specific tasks and adopt behaviors related to them.³ Super posits five life stages, namely, (1) the growth stage of childhood; (2) the exploration stage of adolescence; (3) the establishment stage of early adulthood; (4) the maintenance stage of mid-adulthood; and (5) the decline stage of late adulthood.⁴

Vocational developmental tasks "are those developmental tasks that relate directly or indirectly to the world of work".⁵ These tasks are associated with the life stages. They vary and become increasingly more complex as the individual passes from a lower to a higher life stage. The individual must successfully achieve earlier, less complex tasks if he is to master later, more complex ones.⁶ Super posits five major tasks. They are: (1) crystallization of a vocational preference; (2) specification of a vocational preference;

3 Ibid., p. 5.

4 D. E. Super et al., Vocational Development: A Framework for Research, p. 40-42.

5 Ibid., p. 43.

6 D. E. Super and P. L. Overstreet, Op. Cit., p. 5.

(3) implementation of a vocational preference; (4) stabilization in a vocation; and (5) consolidation of status and advancement in a vocation.⁷

Super has more fully explained the tasks and behaviors within the exploration stage of adolescence and the establishment stage of adulthood.⁸ During the exploration stage, the individual begins to make tentative vocational decisions.⁹ This task is subdivided within the tentative, transition and early trial substages of the exploration stage. Within the tentative substage, the individual is expected to crystallize a vocational preference, that is, to commit himself to a generalized occupational choice.¹⁰ Within the transition substage, the generalized occupational choice must be further specified. Attitudes are very important during this substage and may be manifested by planning for, or even participating in, appropriate education or training in school or on-the-job.¹¹ Within the early trial substage, the

7 D. E. Super, "Vocational Development in Adolescence and Early Adulthood: Tasks and Behaviors", in Career Development: Self Concept Theory, D. E. Super et al., Editors, New York, College Entrance Examination Board, 1963, p. 81.

8 Ibid., p. 81.

9 D. E. Super and P. L. Overstreet, Op. Cit., p. 14-15.

10 D. E. Super, "Vocational Development in Adolescence and Early Adulthood: Tasks and Behaviors", in Career Development: Self Concept Theory, p. 81-82.

11 Ibid., p. 82.

individual is expected to manifest some commitment to the specified occupational choice through the implementation of appropriate educational or training behavior.¹² The establishment stage is divided into the late trial-stabilization and advancement substages. Within the late trial-stabilization substage, the individual is expected to make a real commitment to an occupation compatible with his own interests, abilities and aspirations, thus furthering his own self realization. Within the advancement substage, the individual consolidates his position and becomes firmly established in his chosen occupation.¹³ The relationship between the exploration stage of adolescence and the establishment stage of adulthood and their relevant vocational developmental tasks are reported in Table I.

The next important element in Super's theory to be examined is self concept. Super views self concept as including the individual's perceptions of both himself and his situation. This perception is seen to influence the individual's behavior, including his vocational developmental behavior.¹⁴ As well, in coping with the vocational develop-

12 Ibid., p. 82-83.

13 Ibid., p. 83-84.

14 D. E. Super, "Vocational Development Theory: Persons, Positions and Processes", in The Counseling Psychologist, Vol. 1, No. 1, 1969, p. 7.

TABLE I

The Exploration and Establishment Stages of Super's Theory
with Corresponding Age Ranges, Tasks and
Attitudes and Behaviors

Stage	Substage	Age (in years)	Task	Attitudes and/ or Behaviors
exploration	tentative	14-18	crystallization	arriving at general preferences
	transition	18-21	specification	specification of preferences
	early trial	18-25	implementation	planning to implement; little commitment
establishment	late trial; stabilization	21-30	stabilization	planning for stabilization; more commitment
	advancement	30-mid 40's	consolidation	consolidation and advancement

mental tasks, the individual is seen to strive to develop his self concept.¹⁵ For instance, in declaring a vocational preference, the individual is seen to indicate the kind of person he is. The individual is seen to implement his self concept through specified education or training, or by entering into a specific occupation.¹⁶ During the exploration stage of adolescence, several interrelated vocational developmental tasks facilitate the development of the self concept. The primary task, exploration, is characterized by exploratory behavior. Other vocational developmental experiences characteristic of adolescence include identification, self differentiation, role playing and reality testing.¹⁷ These tasks will be elaborated upon later in this chapter.

The importance of exploration as a significant facilitating experience in the development of the individual's self concept has been discussed by other authors. Jordaan describes the adolescent experience this way.

15 D. E. Super, "Vocational Adjustment: Implementing a Self-Concept", in Occupations, Vol. 30, No. 2, 1951, p. 88.

16 D. E. Super, "Vocational Development Theory: Persons, Positions and Processes", Op. Cit., p. 7.

17 D. E. Super, "Self Concept in Vocational Development", in Career Development: Self Concept Theory, D. E. Super, et al., Editors, New York, College Entrance Examination Board, 1963, p. 11-13.

Adolescence is seen as a period (...) in which the adolescent through experience and self-examination clarifies his self concept and begins to put it into words, finds out what outlets exist in society for one who seeks to play a given role, and modifies his self concept to bring it in line with reality. Adolescent exploration is, in this view, a process of attempting to develop and implement a realistic self concept.¹⁸

Ausubel refers to exploration as the chief agent in promoting adolescent experiences. Making vocational choices, making independent decisions, playing different kinds of adult roles and establishing one's own identity are included among those experiences.¹⁹ Baldwin notes that exploration enables the individual to understand himself and the external world more clearly, to prepare himself to choose goals, including a vocational goal, more effectively, and to undertake appropriate goal-directed behavior.²⁰ To Ginzberg et al., exploration enables the individual to crystallize, then specify, a vocational choice, and to move towards it with some confidence.²¹

18 J. P. Jordaan, "Exploratory Behavior: The Formation of Self and Occupational Concepts", in Career Development: Self Concept Theory, D. E. Super et al., Editors, New York, College Entrance Examination Board, 1963, p. 51.

19 D. P. Ausubel, Theory and Problems of Adolescent Development, New York, Grune and Stratton, 1954, p. 138.

20 A. L. Baldwin, Behavior and Development in Childhood, New York, Holt, Rinehart and Winston, 1955, p. 114-115.

21 E. Ginzberg et al., Occupational Choice, New York, Columbia University Press, 1951, p. 183.

It has been shown that during adolescence exploration is very important for the development of the individual. Exploratory behavior, which is the manifestation of exploration, will now be examined.

Exploratory behavior may take place at home, in school or in part time work.²² At home, the child perceives the roles and functions of his parents and perhaps other relatives. Tyler notes that these roles are definable on a sex basis in functions both at home and in the world of work.²³ The child's perceptions may lead him to learn about himself through identification and consequent modelling and role playing.²⁴ A relationship between having a suitable role model in childhood and making a satisfactory work adjustment in adulthood has been demonstrated by Friend and Haggard.²⁵

22 D. E. Super, The Psychology of Careers, New York, Harper and Row, 1957, p. 82-89.

23 L. E. Tyler, "The Relationship of Interests to Abilities and Reputation Among First-Grade Children", in Educational and Psychological Measurement, Vol. 11, No. 3, 1951, p. 255-264.

24 D. E. Super, The Psychology of Careers, p. 82-84.

25 J. G. Friend and E. A. Haggard, "Work Adjustment in Relation to Family Background", in Applied Psychological Monograph, No. 16, 1948, p. 38.

In adolescence, with increased freedom and opportunity, the individual is enabled to learn more about outlets that are available in society for an individual seeking to assume a given kind of role. Coupling this information with increased self knowledge may enable the individual to modify his self concept along realistic lines.²⁶

Exploratory behavior at home may be complemented by similar behavior at school. In high school, the adolescent may continue to explore through the curriculum, extracurricular activities and social relations. The adolescent takes a variety of technical, commercial and academic subjects, and specializes as he moves from the first year to the final year.²⁷ The many available extracurricular activities present the individual with opportunities to explore various roles.²⁸ His new associates, peers and teachers, present the adolescent with new role models and new opportunities for identification.²⁹ The school experience presents the adolescent with opportunities to become more aware of himself as an individual and enables him to adapt his self concept in keeping with his new found sense of reality.³⁰

26 D. E. Super, The Psychology of Careers, p. 84-85.

27 Ibid., p. 85.

28 Ibid., p. 86.

29 Ibid., p. 87.

30 Ibid., p. 87.

The importance of the school experience in vocational development is indicated by one result of the Career Pattern Study, the longitudinal study that led to the development of Super's theory. A ten-year analysis of the careers of the original subjects, grade nine high school boys, shows the value in the school offering students a variety of experiences and encouraging them to make use of available resources. Students who used available in-school and out-of-school opportunities tended also to make more effective use of career opportunities.³¹

An example of an out-of-school opportunity is part time work. Through work experience programs or placement services, many high schools assist students to obtain part time employment. The adolescent who participates in part time work has an opportunity to develop mature work habits and to become more attuned to the adult world by mixing with adults outside the home and school. Part time work also provides the adolescent with the opportunity to try out roles and test the reality of his self concept as well as his vocational interests.³²

31 D. E. Super, "Vocational Developmental Theory: Persons, Positions and Processes", Op. Cit., p. 16.

32 D. E. Super, The Psychology of Careers, p. 88-89.

It is thus seen that significant development of the self concept occurs through adolescent exploratory behavior. The substance of those experiences and the manner in which the individual deals with them reveals his level of vocational maturity. This important element of Super's theory will now be examined.

Vocational maturity is defined by Super as, "the degree of development, the place reached on the continuum of vocational development from exploration to decline".³³ It is viewed in two ways, first, whether the tasks with which the individual is coping are characteristic of his life stage and second, through the behaviors manifested in dealing with those tasks.³⁴ One finding of the Career Pattern Study reflects the importance of the level of vocational maturity. Among the original ninth grade subjects, vocational maturity, measured by occupational information and planning and by interest maturity, is significantly related to vocational success in young adulthood.³⁵

An individual characterized by low levels of vocational maturity will be impeded in his vocational development

33 D. E. Super, "Dimensions and Measurement of Vocational Maturity", in Teachers College Record, Vol. 57, No. 3, 1955, p. 153.

34 Ibid., p. 153.

35 D. E. Super, "Vocational Developmental Theory: Persons, Positions and Processes", Op. Cit., p. 15.

by a tendency to avoid, repress or distort experiences that call into question cherished aspects of the self concept.³⁶ Musgrove notes that deprivation of an occupational identity in our culture is likely to cause emotional disturbance.³⁷ Conversely, an individual characterized by high levels of vocational maturity tends to experience change as a consequence of his developmental experiences, including his exploratory behavior. Those changes include increased self knowledge and changes in the self perception, more knowledge of occupations, and the ability to translate one's self concept into an occupational goal and to formulate plans for the implementation of this goal.³⁸ The importance of the congruence in translating one's self concept into an occupational concept has been shown by Blocher and Schutz using high school subjects,³⁹ by Englander using female student

36 J. P. Jordaan, Op. Cit., p. 61-62.

37 F. Musgrove, "Self Concepts and Occupational Identities", in Universities Quarterly, Vol. 23, No. 1, 1968, p. 333-334.

38 J. P. Jordaan, Op. Cit., p. 53-54.

39 D. A. Blocher and R. A. Schutz, "Relationship Among Self-Description, Occupational Stereotypes, and Vocational Preferences", in Journal of Counseling Psychology, Vol. 8, No. 4, 1961, p. 314-317.

teachers,⁴⁰ and by Morrison using nursing students.⁴¹

It is thus seen that the level of vocational maturity reflects both the attitudes and behaviors manifested by the individual in his vocational development. It is also seen to reflect the individual's personal development or the degree of health of his self concept.

The four important elements in Super's theory, life stages, vocational development tasks, self concept and vocational maturity, have been examined. A brief summary of Super's position now follows.

Super posits that planning and preparing for a vocation is a developmental process which begins with the growth stage of childhood, continues through the exploration stage of adolescence, the establishment stage of early adulthood and the maintenance stage of mid-adulthood, and concludes with the decline stage of late adulthood. Thus far in Super's theory, both the exploration and establishment stages have been more fully developed. The exploration stage is especially important because of the significant development in vocational maturity that is seen to take place during adolescence. Related to the life stages are vocational

40 M. E. Englander, "A Psychological Analysis of Vocational Choice", in Journal of Counseling Psychology, Vol. 7, No. 4, 1960, p. 257-264.

41 R. L. Morrison, "Self Concept Implementation in Occupational Choices", in Journal of Counseling Psychology, Vol. 9, No. 3, p. 253-260.

developmental tasks. In the exploration stage, the three tasks are to crystallize a vocational preference, to specify a vocational preference, and to implement a vocational preference. In the establishment stage, the individual is expected to become stabilized in a vocation, and to consolidate his status and advance in the chosen vocation.

Self concept, the individual's perception of himself and his situation, is an important element in Super's theory. It influences, and is influenced by, the individual's vocational development. Thus, in coping with the vocational developmental tasks, the individual indicates the kind of person he is and strives to develop and implement his self concept. An individual with a healthy, positive self concept will be aided in his vocational development by a tendency to be realistic about himself and to experience change as a consequence of his developmental experiences. Conversely, an individual with a poor self concept will be impeded in his vocational development by a tendency to be very defensive about cherished aspects of the self concept. This may be seen during adolescence when significant vocational development is deemed to occur as a consequence of a variety of experiences. The primary experience is exploration. Other experiences include identification, self differentiation, role playing and reality testing.

Vocational maturity is the variable that indicates the individual's level of vocational development. It is a measure based on both the tasks the individual is dealing with and the behavior he manifests in dealing with them. The level of vocational maturity also indicates the degree of health of the self concept.

The variables that influence vocational development in Super's theory have been reviewed. In this theory, the health of the self concept is seen as a significant factor in vocational development.

In Adlerian theory, several factors are seen as significantly influencing the way the individual copes with the life tasks, including the vocational task. Among those variables are the prepotent dynamic factors, especially social interest, and intrafamilial relations, especially birth order position. Their influence on personality development, especially vocational development, will now be examined.

2. Adler's Theory of Individual Psychology

In Adlerian theory, the prepotent dynamic factors and intrafamilial relationships are deemed to be the primary factors that influence human development. During the formative years of childhood, these factors give rise to the self concept or schema of apperception, the way the individual views himself, others and the environment.⁴² They also influence the

⁴² H. L. Ansbacher, Editor, The Science of Living, Garden City, New York, Anchor Books, 1969, p. 3-6.

development of the life style, the way the individual moves through life adaptively or maladaptively and approaches high levels of social interest.⁴³ Adler posits that as the individual moves into adolescence, he must learn to cope with the three tasks of life, friendship, love and occupation.⁴⁴ It may be argued that the way the individual copes with these tasks is a manifestation of his self concept, reveals his life style, and reflects upon his level of social interest.

The primary factors will now be examined, beginning with the prepotent dynamic factors. Adler posits three such factors. They are: (1) striving for mastery; (2) social interest; and (3) degree of activity.⁴⁵

Striving for mastery is viewed by Adler as an innate prepotent dynamic factor which is intrinsic to life itself and is necessary to help the individual overcome both generalized inferiority feelings that are inherent with being human and specific organ imperfections. Adler maintains that from early childhood, the striving for mastery is guided by a goal which the individual creates for himself. This goal is viewed as the unifying element of personality in that all of the individual's activities are geared towards it. In an

43 Ibid., p. 38-40.

44 Ibid., p. 100.

45 H. L. Ansbacher and R. R. Ansbacher, Editors, The Individual Psychology of Alfred Adler, New York, Basic Books, 1956, p. 101-171.

individual exhibiting unhealthy, maladaptive behavior, the goal tends to be one of striving for personal power. In contrast, the healthy individual strives for mastery tempered by social interest.⁴⁶

Social interest is viewed by Adler as an innate potentiality for cooperation.⁴⁷ It is the criterion by which striving for mastery is measured. It is a measure of the degree of health of the individual and sets the standard for interpersonal relations. Initially, social interest requires nourishment through the child's relationships within the family, especially the mother.⁴⁸ Ideally, the child learns to identify with others and to be empathic and other-directed.⁴⁹ Social interest stems from Adler's belief in man's need to cooperate with others to effectively cope with what he views as the three major problems of life, "for association, for the provision of livelihood, and for the care of offspring".⁵⁰ The individual's effectiveness in coping with these problems depends on the development of his social interest.⁵¹ Thus a highly developed social interest is reflected in the ability to cope with the problems.

46 Ibid., p. 101-109.

47 Ibid., p. 134.

48 Ibid., p. 135.

49 Ibid., p. 137.

50 Ibid., p. 131.

51 Ibid., p. 131-132.

Degree of activity refers to the manner in which the individual strives for mastery and approaches high levels of social interest. It is reflected in his attitudes and behaviors. Adler posits a variety of approaching, hesitating, rejecting and socially useful behaviors available to the individual. Based on his early experiences, the child selects his degree of activity which remains relatively constant throughout life.⁵²

Another of the primary factors in human development is intrafamilial relationships. Included in these relationships are the parent-child, husband-wife and intersibling relationships.⁵³

Within the relationship between the parents and children, Adler notes that the relationship between the mother and child is very important.

From the moment of birth a baby seeks to connect himself with his mother. This is the purpose of his movements. For many months, his mother plays overwhelmingly the most important role in his life: he is almost completely dependent on her.⁵⁴

The mother's responses to the child and the child's perception

52 Ibid., p. 163-171.

53 A. Porter, Editor, What Life Should Mean to You, New York, Capricorn, 1958, p. 120-148.

54 Ibid., p. 120.

of those responses significantly influence the child's attitude towards cooperation. The mother may serve as a bridge to good social relations with others, especially the father, or may overemphasize her own tie with the child, thus influencing the child to become dependent and pampered. Adler notes that a child with a pampered life style tends to maintain that style throughout life.⁵⁵

The relationship between the father and child is also important. After the birth of the second child, the strengthening of the relationship between the father and the firstborn may compensate for the inevitable weakening relationship between the firstborn and the mother.⁵⁶ In addition, the father may help stress the importance of social interest through his attitude at home as well as by establishing good social relations outside the home and by obtaining satisfactory employment, a significant criteria of healthiness in Adlerian theory.⁵⁷

The husband-wife relationship is important primarily because through the relationship between his parents, the child is enabled to view cooperation between adults within a marital relationship.⁵⁸

55 Ibid., p. 120-126.

56 Ibid., p. 146.

57 Ibid., p. 134.

58 Ibid., p. 138-142.

The intersibling relationships are primarily important in helping the children learn about cooperation. The children tend to learn this especially when they are not competing with each other. However, Adler notes that there are many built-in inequalities within this relationship. Boys may be favored over girls, or one child may be prominent and over-shadow his siblings. Rivalry and competition are often present within this relationship.⁵⁹

Dreikurs, an Adlerian psychiatrist, maintains that within the child's intrafamilial relationships, the intersibling relationship has the greatest influence on the development of personality.⁶⁰

The influence on the development of personality of the intrafamilial relationships, among the parents and children, between the parents themselves, and among the siblings, has been discussed. Birth order position, a variable which is seen to affect intersibling relations and is thus seen as an important determinant on the development of personality, will now be examined.

According to Adler, there are three main birth order positions; firstborn, middle born and youngest born. Children

59 Ibid., p. 142-143.

60 R. Dreikurs, Psychology in the Classroom, New York, Harper and Row, 1968, p. 25.

in the same birth order positions tend to be influenced by similar factors due to their ordinal positions within their families. Thus, they tend to develop similar personality characteristics.⁶¹

In Adlerian theory, the firstborn is seen to be influenced in his development by several major factors. One factor is his unrivalled relationship with his parents. Thus he tends to be the centre of attention in the family and tends to be pampered. Another is dethronement, the loss of position with the birth of the second child, when the firstborn must share parental attention with an infant whom he may perceive as a rival.⁶² The effects of dethronement vary, depending on the firstborn's preparation for the new arrival and perception of the change in his status within the family. If the firstborn is prepared by his parents and feels involved in the care and attention of the infant, he may perceive that he has lost neither parental favor nor his position of status. As a consequence, negative effects of dethronement may be minimized and the firstborn may develop high levels of social interest. However, Adler maintains that the firstborn is generally not prepared for his dethronement. Consequently,

61 A. Porter, Editor, What Life Should Mean to You, p. 144.

62 Ibid., p. 144.

through adaptive or maladaptive means, he strives to attract parental attention and maintain his status within the family. His maladaptive behavior may include acting as if he were in a lifelong power struggle and stressing the importance of power, rules and authority. Alternatively, the firstborn may feel totally isolated and withdraw from social contact altogether.⁶³

Two significant factors that influence the development of the firstborn, his unrivalled relationship with his parents and dethronement, have been examined. Depending on his perception of his experiences within the family, these factors may have as a result the development by the firstborn of either high levels or low levels of social interest. Thus, it appears that in Adlerian theory the level of development of social interest of the firstborn is unpredictable.

Other authors discuss a variety of attributes of the firstborn. He appears to be in the best position to receive beneficial parental attention,⁶⁴ in the most advantageous position to identify with parents and have them as models,⁶⁵ and in the most favorable position to experience the kind of

63 Ibid., p. 144-147.

64 S. Schachter, The Psychology of Affiliation, Stanford, California, Stanford University Press, 1959, p. 43.

65 B. Sutton-Smith and B. G. Rosenberg, The Sibling, New York, Holt, Rinehart and Winston, 1970, p. 154.

home atmosphere and intrafamilial relationships that are likely to lead to higher self esteem.⁶⁶ Significant behavioral manifestations of the firstborn include the tendency to display conforming and affiliative behavior towards significant adults such as parents⁶⁷ and teachers.^{68,69} In school, the behavioral manifestations include the tendencies towards both higher motivation⁷⁰ and a greater need to achieve.⁷¹ In scholastic aptitude, the firstborn tends to surpass all younger siblings in

66 S. Coopersmith, The Antecedents of Self Esteem, San Francisco, W. H. Freeman, 1967, p. 152.

67 L. K. Forer, Birth Order and Life Roles, Springfield, Illinois, Charles C. Thomas, 1969, p. 98.

68 T. Skovholt et al., "Birth Order and Academic Behavior in the First Grade", in Psychological Reports, Vol. 32, No. 2, 1973, p. 395-398.

69 R. W. Bradley and M. P. Sanborn, "Ordinal Position of High School Students Identified by Their Teachers as Superior", in Journal of Educational Psychology, Vol. 60, No. 1, 1969, p. 41-45.

70 R. L. Adams and B. N. Phillips, "Motivational and Achievement Differences Among Children of Various Birth Order Positions", in Child Development, Vol. 43, No. 1, 1972, p. 155-164.

71 E. W. Bartlett and C. P. Smith, "Childrearing Practices, Birth Order and the Development of Achievement Related Motives", in Psychological Reports, Vol. 19, 1966, p. 1207-1216.

elementary school^{72,73} and university.⁷⁴ The firstborn tends to be over-represented among first year university students⁷⁵ and among medical students.⁷⁶ The firstborn has been shown to manifest difficulties in working under supervision⁷⁷ and in assuming the parental role.⁷⁸

In summary, several authors, including Schachter, Sutton-Smith and Rosenberg, Coopersmith and Forer, indicate that the firstborn appears to be in an excellent position to benefit from the relationship with his parents. Academically, he appears to have high ability, high motivation, and a

72 E. A. Chittenden et al., "School Achievement of First and Second Born Siblings", in Child Development, Vol. 39, No. 4, 1969, p. 1223-1228.

73 M. Oberlander and N. Jenkins, "Birth Order and Academic Achievement", in Journal of Individual Psychology, Vol. 23, No. 1, 1967, p. 103-110.

74 W. D. Altus, "Birth Order and Scholastic Aptitude", in Journal of Consulting Psychology, Vol. 29, No. 3, 1965, p. 202-205.

75 W. D. Altus, "Birth Order and Academic Primogeniture", in Journal of Personality and Social Psychology, Vol. 2, No. 6, 1965, p. 872-876.

76 S. Cobb and J. R. P. French, "Birth Order Among Medical Students", in Journal of the American Medical Association, Vol. 195, Nov. 1966, p. 172-173.

77 L. K. Forer, Op. Cit., p. 7.

78 Ibid., p. 104.

greater need to achieve than younger siblings. Socially, the authors point to the manifestation of both cooperative and uncooperative behavior by the firstborn. It may be possible to make predictions about some effects of the parent-child relationship on the firstborn and about his level of academic achievement. However, no prediction may be made about the firstborn's ability to cooperate. In this sense, there is agreement in the studies with the above conclusion drawn from the writings of Adler, that the level of development of social interest by the firstborn is unpredictable.

The second child to be discussed is the middle born. In Adlerian theory, the presence of at least one older sibling is seen to be a primary influence in the development of this child. One reason is that from the outset, the middle born, in contrast to the firstborn, has more people in his immediate environment with whom to socialize. Another reason is that the middle born, unlike the firstborn, does not have an exclusive relationship with his parents. Thus he has to learn to share parental attention with at least one older sibling. A third reason is that the middle born, in contrast to the firstborn, is not as severely affected by dethronement and the resulting loss of position in the family. A fourth reason is that the middle born may perceive an older sibling as a pacemaker whom he strives to compete against and to

surpass. This may lead to a high level of achievement by the middle born and/or a serious conflict between that child and the pacemaker.⁷⁹

Adler notes that the middle born, in contrast to the firstborn, tends to be more cooperative.⁸⁰ This stems from influences within the family such as the middle born's greater opportunity to socialize with others, his need to share parental attention, and the decreased effects of dethronement. The effect of these factors, which tend to influence positively the development of social interest, may be somewhat negated by the conflict with the pacemaker. However, it appears that in Adlerian theory the level of development of social interest of the middle born is more predictable or more consistent than that of the firstborn.

Other authors point out aspects of the middle born's situation and his personal characteristics. He is seen to display more flexibility, patience, stability and emotional control than either a firstborn or youngest born.⁸¹ In contrast, Dreikurs states that within the intersibling relationship or sibship, the middle born is seen as a squeezed child and as being in the most precarious position to learn to compete and express himself.⁸² In addition, within the

79 A Porter, Editor, What Life Should Mean to You, p. 148-149.

80 Ibid., p. 145.

81 L. K. Forer, Op. Cit., p. 21.

82 R. Dreikurs, Op. Cit., p. 24.

parent-child relationship, the middle born is seen to be the most neglected child and the recipient of the least parental attention and encouragement.⁸³ He is also seen to manifest hostile attention getting behavior⁸⁴ and lower levels of academic achievement.⁸⁵

In summary, although there is some discrepancy in the writings of Dreikurs and Sutton-Smith and Rosenberg, Adler is consistent in his formulations of the middle born as manifesting high levels of cooperative behavior. Such formulations support a predictability in the development of social interest of the middle born.

83 B. Sutton-Smith and B. G. Rosenberg, Op. Cit., p. 75.

84 Ibid., p. 98.

85 Ibid., p. 76.

The third child to be discussed is the youngest born. There are several significant influences in the development of this child. One is his relationship with his parents, from whom he tends to receive the same kind of exclusive attention and pampering as the firstborn. Another is that he is never dethroned, thus he never loses the position of the baby in the family or the attention that goes with it. As a consequence, the youngest born often fails to succeed by his own efforts and tends to remain dependent on others.⁸⁶ A third influence is that the youngest born has the largest number of older siblings. On the one hand, he may learn to share and cooperate, like the middle child. However, he may view the older siblings as pacemakers, thus, becoming an ambitious and keen competitor who achieves in the most unique and varied ways. Adler notes that the combination of ambition plus dependency may lead the youngest born to become lazy and discouraged and to give up efforts to satisfy his ambition.⁸⁷

The youngest born is seen to vary in his development. He may develop attributes such as dependency and laziness, characteristics of low levels of social interest. However, he may also develop cooperative and sharing behavior,

⁸⁶ A. Porter, Editor, What Life Should Mean to You, p. 151.

⁸⁷ Ibid., p. 150-152.

characteristics of high levels of social interest. Thus it appears that in Adlerian theory, the level of development of social interest of the youngest born is similar to that of the firstborn. That is, it is more unpredictable or less consistent than that of the middle born.

It is thus seen that the factors that influence the development of social interest, in the case of the firstborn and the youngest born, tend to result in the development of unpredictably inconsistent levels of social interest. In the case of the middle born, there appears to be a predictable uniformity in the development of social interest.

The important variables in the development of personality in Adlerian theory, the prepotent dynamic factors and the intrafamilial relations, have been examined. A brief summary of Adler's position now follows.

Adler posits that human development is significantly influenced by two important variables, the prepotent dynamic factors and intrafamilial relations. Among the three prepotent dynamic factors, striving for mastery, social interest and degree of activity, social interest emerges as a standard to measure both the behavior and the mental health of the individual. A high level of social interest or a high ability to cooperate with others is reflected in a positive schema of apperception or self concept which is manifested in adaptive, cooperative behavior. In contrast, a low level of social interest or an inability to cooperate with others is reflected

in an unhealthy schema of apperception or self concept which is manifested in maladaptive, uncooperative behavior.

Within the intrafamilial relations, between parents and children, between the parents themselves, and within the sibship, birth order position emerges as a variable that significantly influences the development of personality. The firstborn is seen to be primarily influenced by his relationship with his parents and by dethronement, factors that may result in the development of either high levels or low levels of social interest. The middle born is seen to be primarily influenced by the presence of older siblings who influence the development of sharing and cooperative behavior, important attributes of high levels of social interest. Thus, throughout Adler's writings, the middle born is depicted as developing consistently high levels of social interest. This development may be varied somewhat if the older siblings are seen as pacemakers against whom the middle born competes. The youngest born is seen to be primarily influenced by his relationship with his parents, the presence of older siblings, and the lack of dethronement. These factors tend to result in the development of either high or low levels of social interest.

Adler's theory has been reviewed. In the next part of this chapter, Adler's and Super's theories will be juxtaposed and the problem and general hypothesis will be presented.

3. Statement of the Problem and Hypothesis

Super posits that the level of vocational maturity exhibited by the individual reflects upon his self concept. Attitudes and behaviors that reflect a high level of vocational maturity imply a readiness to cope with the occupational task and are indicators of a healthy self concept. Conversely, attitudes and behaviors that reflect a low level of vocational maturity imply a lack of readiness to cope with the occupational task and reflect an unhealthy self concept.

Adler posits that a healthy, positive schema of apperception is characterized by a well developed social interest and is reflected in a life style, through attitudes and behaviors, that indicates a readiness to cope with the tasks of life. Conversely, a poor schema of apperception is characterized by a poorly developed social interest and is reflected in a life style, through attitudes and behaviors, that indicates a lack of readiness to cope with the tasks of life. Among those tasks of life are three which, Adler posits, the individual must learn to cope with when he reaches

adolescence. They are the tasks of friendship, love and occupation.

The problem that arises is this. Birth order position is seen by Adler to be a significant variable in the development of personality and consequently, in the way the individual copes with the life tasks. What is the effect of this variable on the ability of the individual to cope with the vocational task? In considering this problem it may be argued that the degree of health of the self concept, which influences the level of vocational maturity, also reflects the level of social interest which in turn is influenced by the birth order position. It may be argued further that the middle born, with a more consistent level of social interest than either a firstborn or youngest born, will tend to vary less in his level of vocational maturity.

The research hypothesis logically follows. There is less variance among vocational maturity scores of middle born adolescents than of firstborn and youngest born adolescents.

In the next chapter, the experimental design to test the research hypothesis will be presented.

CHAPTER II

EXPERIMENTAL DESIGN

In this chapter the selection procedure of research subjects, the test instruments, and a description of the experimental procedure are discussed.

1. The Subjects

The subjects were ninth grade male adolescents from six high schools located within a moderately sized metropolitan area in Ontario. In Super's¹ and Adler's² terms, they were just entering the stage of life in which they would have to begin coping with the occupational task. Although no sex bias has been found within the Career Development Inventory,³ Adler indicates that there are differences in the upbringing of boys and girls.⁴ Using male subjects only precludes the need to investigate any sex differences in this study.

1 D. E. Super and P. L. Overstreet, The Vocational Maturity of Ninth-Grade Boys, New York, Teachers College, Columbia University, 1960, p. 1-2.

2 H. L. Ansbacher, Editor, The Science of Living, Garden City, New York, Anchor Books, 1969, p. 100.

3 D. E. Super and D. J. Forrest, Career Development Inventory Preliminary Manual, New York, Teachers College, Columbia University, 1972, p. 24, 26.

4 A. Porter, Editor, What Life Should Mean to You, New York, Capricorn, 1958, p. 121.

The following criteria were used in selecting the subjects. They had to be in grade nine or year one of the five year Ontario high school program, and had to have as one of their subjects grade nine English, advanced phase.⁵ Students who were repeating grade nine English were excluded because they were actually in their second year of high school. Students in English as a second language were also excluded because of the possibility of some difficulty with the language on the Career Development Inventory. In addition, students in general phase⁶ English were also excluded. Lokan⁷ found that general phase students had trouble concentrating on the test. They responded as if they had difficulty relating to the task before them or to the questions, and they required much more administration time.

5 The term "phase" refers to the level of difficulty of a subject. In their advanced phase, subjects extend up to and include grade thirteen, the fifth and final year of high school in Ontario. They may be considered as university preparatory subjects.

6 See footnote five. General phase subjects extend up to grade twelve inclusive. They are not considered to be university preparatory subjects.

7 J. Lokan, Locus of Control and Selected Vocational Behaviors in High School Students, unpublished pilot study, Faculty of Education, University of Ottawa, Ottawa, Ontario, 1976, 18 p.

In each of the six schools, three grade nine classes were selected. In keeping with the above criteria and in consideration of timetabling in each school, the head of guidance was asked to select three level one English classes. The selection of subjects in five of the schools was successfully accomplished in this way. In the sixth school, where the researcher assumed the responsibility of selecting subjects, English classes were not available for use in this study because of other commitments. In this school, three grade nine advanced mathematics classes were used, but all other criteria used in the selection of subjects were adhered to.

A total of 121 subjects from eighteen classes were used in the analysis. As well, among the students tested, 99 could not be classified according to the criteria for inclusion within one of the birth order positions (see pages 42-43). Data on the subjects are presented in Table II.

2. The Instruments

Two instruments were used in the present study, the Career Development Inventory and the Birth Order Survey.

The Career Development Inventory,⁸ used in the measurement of vocational maturity, was validated for all levels of secondary school as an objective, multifactor,

⁸ D. E. Super, Career Development Inventory, New York, Teachers College, Columbia University, 1971, 13 p.

TABLE II

Frequencies of Firstborn, Middle Born and Youngest Born
Ninth Grade Adolescent Males in Six Schools

School	Firstborn	Middle Born	Youngest Born	Total Number of Subjects Selected	Unclassi- fiable
1	10	4	3	17	21
2	3	5	6	14	19
3	8	9	5	22	15
4	10	3	3	16	19
5	6	3	10	19	11
6	15	7	11	33	14
Total	52	31	38	121	99

Note: Criteria used in the defining of birth order position is provided on pages 42-43.

self-administered, paper-and-pencil inventory measuring the vocational maturity of adolescent boys and girls.⁹

The Career Development Inventory is composed of three subscales, planning Orientation (Scale A), Resources for Exploration (Scale B), and Information and Decision Making (Scale C). Scale A is a self rating scale which is designed to measure such variables as one's concern with vocational choice, his specificity of planning, and the estimated amount of occupational information he has. In Scale B, the individual assesses the quality of a variety of resources that may be used as sources of information in his planning for education and career. Among those resources are human resources, such as relatives and other people, university and community college literature, and audio and visual devices.¹⁰

Both Scales A and B may be viewed as attitudinal measures of crystallization, the first task of the exploration stage of adolescence.¹¹ Scale C may be viewed as a cognitive measure. It assesses the individual's actual

9 D. E. Super and D. J. Forrest, Career Development Inventory Preliminary Manual, New York, Teachers College, Columbia University, 1972, p. 1.

10 Ibid., p. 5.

11 D. E. Super, "Vocational Development in Adolescence and Early Adulthood", in Career Development: Self Concept Theory, D. E. Super et al., Editors, New York, College Entrance Examination Board, 1963, p. 81-82.

occupational information and his knowledge of how to integrate this information into educational and vocational decisions.¹² According to Super and Forrest, Scales A and B are considered to be appropriate measures for the behavior and attitudes that should be developed between senior elementary school and grade ten.¹³ Since the subjects in this study are all grade nine students in early adolescence and should be coping with the task of crystallization, Scales A and B may best reflect their levels of vocational development. Thus only Scales A and B are used within the present study.

Scales A and B of the Career Development Inventory are arranged as follows. Each scale is divided into several sections. Each section begins with a statement in which the student is asked to rate himself on the items which follow. The rating is based on five attitudinal responses, A, B, C, D, and E, that appear in ascending order from a completely negative response to a completely positive one. The student selects one attitudinal response for each item and in this way, attitudinal responses are deemed to be elicited.

The scoring scheme for each scale is different. In Scale A, the five attitudinal responses, A, B, C, D and E,

12 D. E. Super and D. J. Forrest, Op. Cit., p. 5-6.

13 Ibid., p. 17-18.

from which the answer may be chosen, each have a numerical value of one to five in ascending order from A to E. In Scale B, each attitudinal response, A, B, C, D, E, from which the answer may be chosen has the same value as in Scale A. However, the items in Scale B are weighted so that each item is multiplied by a value of one to four. The authors note that the different marking schemes for each scale precludes the addition of raw scores from each scale to form a total score, or the comparison of scores from one scale to another, without first converting the raw scores to standard scores.¹⁴

Scales A and B are moderately correlated. For two representative samples of 200 tenth grade male and female students, the correlation of Scale A with Scale B was .46 with the first sample and on replication with the second sample, was .56.¹⁵

The Career Development Inventory was standardized in the United States using a representative sample of rural and urban tenth grade students.¹⁶ With permission of the original author, some revisions were made by Lokan in the Career Development Inventory. In both Scales A (see Appendix 1) and B

14 Ibid., p. 4.

15 Ibid., p. 26-29.

16 Ibid., p. 20.

(see Appendix 2), revisions were made in items that might be confusing to Canadian students. In Sections IV and V of Scale B only, the order of several items was changed so that these items would follow each other more logically (see Appendix 3). Following this, the Career Development Inventory was validated for use with English speaking Canadian students by Lokan¹⁷ with results similar to those found by Super in the United States.

Test-retest reliability coefficients obtained by Super with a representative sample of eighty-two male and female tenth graders after a two to four week interval were .85, .82, .71 and .87 for Scales A, B, C and the Total Scale, respectively. With a larger but similar representative sample, the test-retest reliability coefficients on all Scales over a period of six months were found to range from .64 to .71.¹⁸

Extensive work was done on validity. The content for Scales A and B was established both by logic and factor analysis. Statistically significant but low order correlations were obtained among the scales of the Career Development Inventory and the father's level of occupation, student's own vocational preference, the SRA-Verbal Test and grade-point average.¹⁹

17 J. Lokan, Op. Cit., 1976, 18 p.

18 D. E. Super and D. J. Forrest, Op. Cit., p. 21-23.

19 Ibid., p. 31-33.

The scales of the Career Development Inventory were correlated with three other measures of vocational maturity. The highest correlations obtained, .74 and .67 for Scales A and B respectively, were with an attitudinal measure, the Readiness for Career Planning Scale of Gibbons and Lohnes.²⁰ The correlations obtained with a cognitive measure, the Cognitive Vocational Maturity Test of Westbrook and Clary, are very low for the attitudinal Scales A and B.²¹ The correlations obtained with the Attitude Scale of the Vocational Development Inventory were .13 and .10 for Scales A and B respectively. These low correlations are in contrast to the moderate correlations obtained between the Attitude Scale of the Vocational Development Inventory and two cognitive measures, the SRA-Verbal Test and the grade-point average. Therefore it is argued by Super and Forrest that the Attitude Scale of the Vocational Development Inventory appears to be a cognitive measure.²² The Career Development Inventory was validated for the grade levels between grade eight and grade twelve inclusive, and for both males and females.²³

Based on the above results, it is concluded that the Career Development Inventory is a valid and reliable instrument

20 Ibid., p. 38.

21 Ibid., p. 37-38.

22 Ibid., p. 37-38.

23 Ibid., p. 26.

for use in the present study in measuring vocational maturity. Following the advice of Super and Forrest on converting the raw scores from the scales to standard scores before adding them together to form a total score,²⁴ the scores on each of Scales A and B were first converted to T-scores, then added together to form a total vocational maturity score for each subject. High scores indicate a high level of vocational maturity and low scores indicate a low level of vocational maturity.

The Birth Order Survey was developed for this study to obtain information about the ages, sex and order of birth of the children in the family (see Appendix 4). In keeping with Adlerian theory,²⁵ a firstborn, middle born and youngest born were defined as follows:

A "firstborn" was an individual with no older sibling but with one or more younger siblings born within three years of himself.

A "middle born" was an individual having one or more older siblings born within three years of himself and one or more younger siblings born within three years of himself.

A "youngest born" was an individual having no younger sibling but one or more older siblings born within three years of himself.

24 Ibid., p. 4.

25 H. L. Ansbacher and R. R. Ansbacher, Editors, The Individual Psychology of Alfred Adler, New York, Basic Books, 1956, p. 377.

The "unclassifiabiles" were those individuals tested who did not satisfy the birth order criteria for inclusion among the firstborn, middle born or youngest born.

3. Method of the Experiment

The Birth Order Survey and the Career Development Inventory were administered by the researcher and an assistant during forty minute class periods. The students were able to complete both instruments during the period. The instruments were administered during March and April, 1976.

At the beginning of the period, each student was asked to complete the Birth Order Survey. In keeping with the requirements of the Career Development Inventory,²⁶ each student was asked to list his future vocational preference (see Appendix 5). Instructions on how to mark the answer sheet were then given (see Appendix 6). This was followed by a brief introduction to the Career Development Inventory and instructions on how to complete Scales A and B (see Appendix 7).

4. Analysis and Organization of the Data

The raw scores (see Appendix 8) on each of Scales A and B of the

26 D. E. Super and D. J. Forrest, Op. Cit., p. 3.

Career Development Inventory were converted to T-scores then added together to present a total vocational maturity score. With birth order position as the independent variable, the data were then analyzed using the Scheffe test for homogeneity of variance to test for differences among the variances of the three groups. The Scheffe test was used because unlike other measures of homogeneity of variance, it is relatively insensitive to departures from normality.²⁷ The level of significance was set at 0.05.

In the next chapter, the results of the experiment are presented and discussed.

²⁷ R. J. Winer, Statistical Principles in Experimental Design, Second Edition, New York, McGraw-Hill, 1971, p. 219-220.

CHAPTER III

PRESENTATION AND DISCUSSION OF THE RESULTS

In this chapter, the formal test of the hypothesis concerning the differences in the variance of vocational maturity scores among adolescent males is presented. The results of the data analysis are also presented and discussed.

It was hypothesized that there is less variance of vocational maturity scores among middle born adolescent males than among firstborn or youngest born adolescent males. The hypothesis was tested in its null form by means of the Scheffe¹ test for homogeneity of variance, with vocational maturity scores as the dependent variable and birth order position as the independent variable. Variances are reported in Table III. The F ratio was calculated to be 1.06. The critical value of $F(2, 16)$ at the .05 level of significance is 3.63. Thus, no significant differences were in evidence among the variances of the vocational maturity scores exhibited by the individuals within the three birth order positions. Parenthetically, the trend is in the direction of the hypothesis, that is, towards lower levels of variance of vocational maturity scores for the middle born.

¹ B. J. Winer, Statistical Principles in Experimental Design, Second Edition, New York, McGraw-Hill, 1971, p. 219-220.

TABLE III

The Variances of Vocational Maturity Scores
on the Career Development Inventory
for Firstborn, Middle Born and Youngest Born Ninth
Grade Adolescent Males

Birth Order Position	N	Variance
Firstborn	52	356.27
Middle Born	31	170.88
Youngest Born	38	335.40

In this theory, Adler² articulates the significance of several factors in the development of personality. Among those factors are the intrafamilial relationships between the parents and child and among the siblings themselves. These relationships and their influence on the development of the personality of the child are seen to vary, depending on the birth order position of the child. Adler maintains that the firstborn and youngest born, in contrast to the middle born, tend to have closer relationships with their parents. As a consequence, they may be pampered and somewhat inhibited in their development. However, they may also benefit positively as a consequence of the close relationship, for instance, through encouragement by their parents. The middle born, in contrast, is seen to receive less parental attention. Thus, he may be less affected by both the positive and negative aspects of his relationship with his parents. Within the sibship, the firstborn is viewed as striving to maintain his position of firstborn, and the youngest born is viewed as being pampered by older siblings and as striving to surpass them. The middle born may also strive to surpass older siblings. However, he is seen as having to share and cooperate with one or more siblings from the outset, a factor which tends to result in the development of high levels of social interest. Thus social interest, which

2 A Porter, Editor, What Life Should Mean to You, New York, Capricorn, 1958, p. 120-148.

reflects upon the individual's ability to cooperate with others and to cope with the life tasks, is posited to vary with the birth order position.

It was argued that the degree of vocational maturity, which indicates the individual's ability to cope with the vocational task, is related to the level of social interest. Furthermore, it was argued by this writer that the tendency towards more consistent levels of social interest for the middle born should be reflected in significantly lesser variance of vocational maturity scores for this child than for either the firstborn or youngest born. However, the data did not support the view that the variance of vocational maturity scores varies significantly with the birth order position. Adler's theory will be reexamined in the light of the results.

Adler maintains that children born in similar birth order positions share common personality traits as a consequence of having had similar experiences. However, he also points out that within birth order positions, the experiences that influence development may vary resulting in possible inconsistent personality development of children within the same birth order positions. Among the variables that may fluctuate are the sex of siblings and parental attitudes towards siblings of either sex. The fluctuation of variables on children within similar birth order positions will now be considered.

The position of the firstborn child is clearly defined, however, in different families the influence on the firstborn may vary depending on the sex of the second child. The position of the youngest born is also quite clearly defined, although between families the influence on this child may vary depending on the fluctuation of such variables as the sex of the sibling who preceded him, as well as by the number of siblings in the family. The position of the middle born is less clearly defined than that of his oldest and youngest siblings. He may fall anywhere between the firstborn and youngest born, and may be immediately preceded and followed by siblings of either sex. If the middle born, as well as the youngest born, are the only male siblings in their families, they may be viewed and treated by their parents as firstborn and as a consequence, may view themselves as firstborn.

This points to the problem in birth order position research of clearly identifying individual's according to their birth order position. In several of the studies referred to in Chapter I, the subjects were referred to as

firstborn and later born.^{3,4,5,6,7} This way of defining birth order position does not appear to be in accord with the Adlerian criteria on birth order position in that it fails to take into consideration the varying factors which, Adler notes, affect the personality development of children according to their birth order positions.⁸ As well, it may reflect a problem of identifying middle born children as noted by Forer.⁹

3 R. L. Adams and B. N. Phillips, "Motivational and Achievement Differences Among Children of Various Birth Order Positions", in Child Development, Vol. 43, No. 1, 1972, p. 155-164.

4 E. W. Bartlett and C. P. Smith, "Childrearing Practices, Birth Order and the Development of Achievement Related Motives", in Psychological Reports, Vol. 19, 1966, p. 1207-1216.

5 E. A. Chittenden et al., "School Achievement of First and Second Born Siblings", in Child Development, Vol. 39, No. 4, 1969, p. 1223-1228.

6 M. Oberlander and N. Jenkins, "Birth Order and Academic Achievement", in Journal of Individual Psychology, Vol. 23, No. 1, 1967, p. 103-110.

7 W. D. Altus, "Birth Order and Scholastic Aptitude", in Journal of Consulting Psychology, Vol. 29, No. 3, 1965, p. 202-205.

8 A. Porter, Op. Cit., p. 140-145.

9 L. K. Forer, Birth Order and Life Roles, Springfield, Illinois, C. C. Thomas, 1969, p. 111.

In addition, there is a subsequent problem of attributing personality traits to individuals according to their birth order positions. In the studies referred to, personality traits, especially academically oriented traits, were attributed to firstborn children. In contrast to later born children, they were found to manifest higher motivation,¹⁰ a greater need to achieve,¹¹ and higher levels of academic achievement,^{12,13,14} Personality traits were not attributed to either the middle born or youngest born since they were not identified as individual groups. In contrast, in this study, birth order position was defined so that firstborn, middle born and youngest were clearly delineated.¹⁵ However, no significant differences were found among the three birth order positions in their variance of vocational maturity scores.

10 R. L. Adams and B. N. Phillips, Op. Cit., p. 155-164.

11 E. W. Bartlett and C. P. Smith, Op. Cit., p. 1207-1216.

12 E. A. Chittenden et al., Op. Cit., p. 1223-1228.

13 M. Oberlander and N. Jenkins, Op. Cit., p. 103-110.

14 M. Altus, Op. Cit., p. 202-205.

15 A. Adler, The Individual Psychology of Alfred Adler, H. L. Ansbacher and R. R. Ansbacher, Editors, New York, Basic Books, 1956, p. 377.

Several reasons are suggested for the lack of significant difference in the variance of vocational maturity scores among firstborn, middle born and youngest born adolescent males. One reason is found in Adlerian theory. In spite of his emphasis on the significance of birth order position, Adler notes that a child in any birth order position may behave like a child from any other position.¹⁶ The individual's schema of apperception, the way he views himself, others and the environment, plays a significant role in this. Thus, although Adler posits that children in similar birth order positions share similar experiences that result in the development of similar personality traits, he also views each child as an individual.¹⁷ It is suggested that the results of this study lend support to this view. Vocational maturity is viewed by Super and others as a dimension of personality.¹⁸ Consequently, the results of this study do not support the Adlerian view that birth order position is a significant variable in the development of personality.

16 A. Porter, Op. Cit., p. 149.

17 Ibid., p. 12-13.

18 D. Super et al., Editors, Career Development: Self Concept Theory, New York, College Entrance Examination Board, 1963, p. 81.

Further studies are suggested. In these studies, factors within the intrafamilial relationships that may influence the development of higher levels of vocational maturity should be examined. It is suggested that among those factors are the number of siblings, the age span between siblings, and the sex of siblings. Other suggested factors which may be included are the influence of parents on the development of vocational maturity on children of either sex.

Efforts to assist adolescents to plan and prepare for post secondary school education and/or career continues to be important. School personnel have been given the task of assisting in this important endeavor. They may be able to give more effective help as more is learned about the variables that influence the development of high levels of vocational maturity.

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This is a report of a cross cultural, longitudinal study of elementary school students on motivational achievement and intellectual differences between firstborn and later born children.

Altus, William D., "Birth Order and Academic Primogeniture", in Journal of Personality and Social Psychology, Vol. 2, No. 6, 1965, p. 872-876.

This report of a study of the birth order position of students entering the first year at the University of California suggests that the over representation of firstborn men and women may be due to the aptitude and higher achievement training of firstborn in contrast to later born children.

Altus, William D., "Birth Order and Scholastic Aptitude", in Journal of Consulting Psychology, Vol. 29, No. 3, 1965, p. 202-205.

The differences in scholastic aptitude of first year college men and women according to their birth order position is reported in this study. Although the mean scores were in the predicted direction and tended to show the superior ability of firstborn over later born children, statistical significance was reached only once.

Ansbacher, Heinz L., and Rowena R. Ansbacher, Editors, The Individual Psychology of Alfred Adler, Harper, 1956, xxiv-503p.

Adler's writings are presented systematically in this book. Excellent notes by the editors clarify the chronological presentation and the theory.

Bradley, Richard W., and Marshall P. Sanborn, "Ordinal Position of High School Students Identified by their Teachers as Superior", in Journal of Educational Psychology, Vol. 60, No. 1, 1969, p. 41-45.

Firstborn ninth grade students in contrast to later born children tend to be chosen by their teachers as being superior because of their behavior.

Chittenden, Edward A., et al., "School Achievement of First and Second-Born Siblings", in Child Development, Vol. 39, No. 4, 1969, p. 1223-1228.

First and second born siblings from the same families were compared on achievement and aptitude at the same grade level. For both teacher made and standardized tests, the firstborns were found to be superior for both sexes.

Cobb, Sidney and John R. P. French, "Birth Order Among Medical Students", in Journal of the American Medical Association, Vol. 195, No. 4, 1966, p. 172-173.

This is the report of a study which shows the relationship between the presence of children from different birth order positions among medical students.

Oberlander, Mark and Noel Jenkins, "Birth Order and Academic Achievement", in Journal of Individual Psychology, Vol. 23, No. 1, 1967, p. 103-110.

Firstborn seventh and eighth grade students were found to be superior to later born students on tests of achievement and intelligence.

Porter, Alan, Editor, What Life Should Mean to You, New York, Capricorn, 1958, 300 p.

Many of the basic concepts of Adlerian psychology are presented in this book.

Skovholt, Thomas et al., "Birth Order and Academic Behavior in the First Grade", in Psychological Reports, Vol. 32, No. 2, 1973, p. 395-398.

This is the report of a study in which teachers of grade one selected students they perceived to be academically superior. They tended to choose firstborn and only children.

Super, Donald E., "A Theory of Vocational Development", in The American Psychologist, Vol. 8, No. 2, 1953, p. 185-191.

The main purpose of this paper is to set forth a theory of vocational development.

Super, Donald E., "Dimensions and Measurement of Vocational Maturity", in Teachers College Record, Vol. 57, No. 3, 1955, p. 151-163.

An early formulation of Super's theory including indices of vocational maturity is presented. The place of vocational development and maturity in vocational psychology and guidance are discussed.

Super, Donald E., "Vocational Adjustment: Implementing a Self Concept", in Occupations, Vol. 30, No. 2, 1951, p. 88-93.

Self concept is presented as an integral part of vocational developmental theory. The role and function of self concept with vocational adjustment is described.

Super, Donald E., "Vocational Development Theory: Persons, Positions and Processes", in The Counseling Psychologist, Vol. 1, No. 1, 1969, p. 2-9.

Historical and scientific support is offered for Super's theory of vocational development.

Super, Donald E., et al., Career Development: Self Concept Theory, New York, College Entrance Examination Board, 1963, vi-95 p.

One of the basic concepts in Super's theory, self concept, is presented. Historical aspects, methods of operationalizing and translating into vocational terms and relating the concept to adolescent development are detailed.

Super, Donald E., et al., Vocational Development: A Framework for Research, New York, Teachers College Press, 1957, xvi-142 p.

This text is the first monograph of the Career Pattern Study which led to the development of Super's theory. Vocational behavior is presented as a developmental concept based on observations of human behavior.

Super, Donald E., and David J. Forrest, Career Development Inventory Preliminary Manual, New York, Teachers College Press, 1972, iv-52 p.

Validation and support information is presented for the Career Development Inventory.

Super, Donald E., and Phoebe L. Overstreet, The Vocational Maturity of Ninth Grade Boys, New York, Teachers College Press, 1960, xii-212 p.

In this monograph of the Career Pattern Study, the authors describe the maturity of the vocational behavior of a group of ninth-grade boys studied by the staff of the Career Pattern Study.

Westbrook, Bert W., and Marjorie W. Mastie, "Three Measures of Vocational Maturity: A Beginning to Know About", in Measurement and Evaluation in Guidance, Vol. 6, No. 1, 1973, p. 8-16.

Instruments which measure vocational maturity and designed by three different authors, Super, Crites and Westbrook, are compared and criticized in this article.

APPENDIX 1

Revisions in Scale A of the Career Development Inventory to Clarify Terminology for Canadian Students

Original Version

Revised Version

Scale A, Section I:

- | | |
|--|--|
| 3. Taking high school courses which will help me decide what line of work to go into when I leave school or college. | 3. Taking high school courses which will help me decide what line of work to go into when I leave school, community college or university. |
| 4. Taking high school courses which will help me in college, in job training, or on the job. | 4. Taking high school courses which will help me later in university, in job training, or on the job. |
| 5. Taking part in school or out of school activities which will help me in college, in training, or on the job. | 5. Taking part in school or out of school activities which will help me in university, in training, or on the job. |
| 9. Getting money for college or training. | 9. Getting money for university, college or training. |

Scale A, Section II:

- | | |
|---|--|
| 18. Choosing between college, junior college, business school, technical school, work, military service, marriage, homemaking, etc. | 18. Choosing between university, community college, business college, work, military service, marriage, homemaking, etc. |
| 19. Choosing a college, branch of military service, wife or husband, etc. | 19. Choosing a university, community college, branch of military service, husband or wife, etc. |
| 20. Choosing an occupation for after high school, college, or job training. | 20. Choosing an occupation for after high school, university, college or job training. |

APPENDIX 2

Revisions in Scale B of the Career Development Inventory to Clarify Terminology for Canadian Students

Original Version

Revised Version

Scale B, Section IV:

- | | |
|--|--|
| 45. College catalogues | 45. University or community college calendars |
| 46. Persons in the occupation or at the college I am considering | 46. Persons in the occupation or at the university or college I am considering |

Scale B, Section V:

- | | |
|--|--|
| 59. College catalogues | 59. University or community college calendars |
| 60. Persons in the occupation or at the college I am considering | 60. Persons in the occupation or at the university or college I am considering |

APPENDIX 3

Original and Revised Order of Items in Scale B,
Sections IV and V,¹ of the
Career Development Inventory

<u>Original Version</u>	<u>Revised Version</u>
34. Father or male guardian.	34. No change.
35. Mother or female guardian.	35. No change.
36. Brothers, sisters or other relatives.	36. No change.
37. Friends.	37. No change.
38. Coaches of teams I have been on.	38. No change.
39. Minister, priest, or rabbi.	39. Other teachers.
40. Teachers.	40. Minister, priest, or rabbi.
41. School counselors.	41. No change.
42. Private counselors outside of school.	42. No change.
43. Books with the information I need.	43. No change.
44. Audio or visual aids like tape recordings, movies, or computers.	44. No change.
45. College catalogues.	45. No change.
46. Persons in the occupation or at the college I am considering.	46. No change.
47. T.V. shows, movies, or magazines.	47. No change.

¹ The items in Sections IV and V of Scale B are similar and appear in the same order.

APPENDIX 6

ANSWER SHEET.

YOUR NAME: 8 Last name

18 First name

1 5

SCHOOL: _____ Home Form: _____

INSTRUCTIONS: There are four or five possible answers for each question. After you choose an answer to a question, find the number of the question on the Answer Sheet and CIRCLE the letter that corresponds to your answer. If you make a mistake, cross out the wrong answer and circle the right one.

SECTION I (c 31-44)

- | | | | | | |
|-----|---|---|---|---|---|
| 1. | A | B | C | D | E |
| 2. | A | B | C | D | E |
| 3. | A | B | C | D | E |
| 4. | A | B | C | D | E |
| 5. | A | B | C | D | E |
| 6. | A | B | C | D | E |
| 7. | A | B | C | D | E |
| 8. | A | B | C | D | E |
| 9. | A | B | C | D | E |
| 10. | A | B | C | D | E |
| 11. | A | B | C | D | E |
| 12. | A | B | C | D | E |
| 13. | A | B | C | D | E |
| 14. | A | B | C | D | E |

SECTION II (c 45-52)

- | | | | | | |
|-----|---|---|---|---|---|
| 15. | A | B | C | D | E |
| 16. | A | B | C | D | E |
| 17. | A | B | C | D | E |
| 18. | A | B | C | D | E |
| 19. | A | B | C | D | E |
| 20. | A | B | C | D | E |
| 21. | A | B | C | D | E |
| 22. | A | B | C | D | E |

SECTION III (c 53-63)

- | | | | | | |
|-----|---|---|---|---|---|
| 23. | A | B | C | D | E |
| 24. | A | B | C | D | E |

SECTION III (cont'd)

- | | | | | | |
|-----|---|---|---|---|---|
| 25. | A | B | C | D | E |
| 26. | A | B | C | D | E |
| 27. | A | B | C | D | E |
| 28. | A | B | C | D | E |
| 29. | A | B | C | D | E |
| 30. | A | B | C | D | E |
| 31. | A | B | C | D | E |
| 32. | A | B | C | D | E |
| 33. | A | B | C | D | E |

c 80: 1

Repeat c 1-12

SECTION IV (c 14-27)

- | | | | | | |
|-----|---|---|---|---|---|
| 34. | A | B | C | D | E |
| 35. | A | B | C | D | E |
| 36. | A | B | C | D | E |
| 37. | A | B | C | D | E |
| 38. | A | B | C | D | E |
| 39. | A | B | C | D | E |
| 40. | A | B | C | D | E |
| 41. | A | B | C | D | E |
| 42. | A | B | C | D | E |
| 43. | A | B | C | D | E |
| 44. | A | B | C | D | E |
| 45. | A | B | C | D | E |
| 46. | A | B | C | D | E |
| 47. | A | B | C | D | E |

Continued over page...

APPENDIX 6

ANSWER SHEET.

YOUR NAME: 8 Last name

18 First name

1 5

SCHOOL: Home Form:

INSTRUCTIONS: There are four or five possible answers for each question. After you choose an answer to a question, find the number of the question on the Answer Sheet and CIRCLE the letter that corresponds to your answer. If you make a mistake, cross out the wrong answer and circle the right one.

SECTION I (c 31-44)

- 1. A B C D E
2. A B C D E
3. A B C D E
4. A B C D E
5. A B C D E
6. A B C D E
7. A B C D E
8. A B C D E
9. A B C D E
10. A B C D E
11. A B C D E
12. A B C D E
13. A B C D E
14. A B C D E

SECTION II (c 45-52)

- 15. A B C D E
16. A B C D E
17. A B C D E
18. A B C D E
19. A B C D E
20. A B C D E
21. A B C D E
22. A B C D E

SECTION III (c 53-63)

- 23. A B C D E
24. A B C D E

SECTION III (cont'd)

- 25. A B C D E
26. A B C D E
27. A B C D E
28. A B C D E
29. A B C D E
30. A B C D E
31. A B C D E
32. A B C D E
33. A B C D E

c 80: 1
Repeat c 1-12

SECTION IV (c 14-27)

- 34. A B C D E
35. A B C D E
36. A B C D E
37. A B C D E
38. A B C D E
39. A B C D E
40. A B C D E
41. A B C D E
42. A B C D E
43. A B C D E
44. A B C D E
45. A B C D E
46. A B C D E
47. A B C D E

Continued over page...

ANSWER SHEET (cont'd)SECTION V (c 28-41)

48. A B C D E
 49. A B C D E
 50. A B C D E
 51. A B C D E
 52. A B C D E
 53. A B C D E
 54. A B C D E
 55. A B C D E
 56. A B C D E
 57. A B C D E
 58. A B C D E
 59. A B C D E
 60. A B C D E
 61. A B C D E

SECTION VI (c 42-46)

62. A B C D E
 63. A B C D E
 64. A B C D
 65. A B C D
 66. A B C D

SECTION VII (c 47-54)

67. A B C D E
 68. A B C D E
 69. A B C D E
 70. A B C D E
 71. A B C D E
 72. A B C D E
 73. A B C D E
 74. A B C D E

SECTION VIII (c 55-59)

75. A B C D E
 76. A B C D E
 77. A B C D E
 78. A B C D E
 79. A B C D E

SECTION IX (c 60-71)

80. A B C D
 81. A B C D E
 82. A B C D E
 83. A B C D
 84. A B C D
 85. A B C D
 86. A B C D
 87. A B C D E
 88. A B C D
 89. A B C D
 90. A B C D
 91. A B C D

c 80: 2

End of questionnaire.

THANK YOU.

APPENDIX 7

CAREER DEVELOPMENT INVENTORY

Form 1

Donald E. Super Jean Pierre Jordaan
Martin J. Bohn, Jr. Richard H. Lindeman
David J. Forrest Albert S. Thompson

Teachers College, Columbia University
New York, New York

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* * * * *

INTRODUCTION

The questions you are about to read ask you about school, work, your future career, and some of the plans you may have made. The only right answers are the ones which are right for you. Later, some questions ask about career facts; others ask you to judge students' plans. Give the best answers you can.

Answers to questions like these can help teachers and counsellors offer the kind of help which high school students want and need in planning and preparing for a job after graduation, for vocational and technical school training, or for going to college or university.

THE FIRST STEP

Check your booklet to make sure it has 13 pages, all in the right order.

Now look at the green and yellow sheets you have been given. Please fill in your name, school and home form at the top of each of these sheets.

You may then fill in the rest of the information asked for on the green sheet.

PLEASE DO NOT WRITE ON THIS BOOKLET.

DO NOT OPEN IT UNTIL YOU ARE TOLD TO BEGIN.

- 2 -

HOW TO ANSWER

1. All your answers go on the yellow Answer Sheet.
2. The questions in the Inventory are arranged in sections. In each of Sections I through V, you are given a set of statements at the beginning of the section to show the possible answers for the questions in that section. The sets of statements are not the same for all the sections, so PLEASE READ THEM CAREFULLY.

For most of the remainder of the Inventory, each question has its own set of answers. However, please note that the questions in Section VII have a set of answers at the beginning of the section, and that the questions in Section VIII are set out differently from those in all the other sections. Again, PLEASE READ THE INSTRUCTIONS CAREFULLY.

3. After you choose an answer to a question, find the number of the question on the Answer Sheet and circle the appropriate letter opposite that number. If you make a mistake, cross out the wrong answer clearly and circle the right one.
4. Answer all questions. If you are not sure about an answer, make the best guess you can. There is no time limit, but work as rapidly as you can; the first answer that comes to you is often the best one.

The questions begin on the next page.

- 3 -

SECTION I

Students differ considerably in the amounts of thinking and planning they do about their future careers.

Here are five statements showing different amounts of thinking and planning:

- (A) I have not given any thought to this.
- (B) I have given some thought to this, but haven't made any plans yet.
- (C) I have some plans, but am still not sure of them.
- (D) I have made definite plans, but don't know how to carry them out.
- (E) I have made definite plans, and know what to do to carry them out.

For EACH QUESTION (questions 1 through 14) in this first section, choose the statement which is closest to showing the amount of thinking and planning you have done.

* * * * *

I. HOW MUCH THINKING AND PLANNING HAVE YOU DONE IN THE FOLLOWING AREAS?

1. Finding out about educational and occupational possibilities by going to the library, sending away for information, or talking to somebody who knows about the possibilities.
2. Talking about career decisions with an adult who knows something about me.
3. Taking high school courses which will help me decide what line of work to go into when I leave school, community college or university.
4. Taking high school courses which will help me later in university, in job training, or on the job.
5. Taking part in school or out-of-school activities which will help me in university, in training, or on the job.
6. Taking part in school or after school activities (for example, science club, school newspaper, Sunday School teaching, volunteer nurse's aide) which will help me decide what kind of work to go into when I leave school.
7. Getting a part-time or summer job which will help me decide what kind of work I might go into.
8. Getting a part-time or summer job which will help me get the kind of job or training I want.

Here are five statements showing different amounts of thinking and planning:

- (A) I have not given any thought to this.
- (B) I have given some thought to this, but haven't made any plans yet.
- (C) I have some plans, but am still not sure of them.
- (D) I have made definite plans, but don't know how to carry them out.
- (E) I have made definite plans, and know what to do to carry them out.

- 9. Getting money for university, college or training.
- 10. Dealing with things which might make it hard for me to get the kind of training or the kind of work I would like.
- 11. Getting the kind of training, education, or experience which I will need to get into the kind of work I want.
- 12. Getting a job once I've finished my education and training.
- 13. Doing the things one needs to do to become a valued employee who doesn't have to be afraid of losing his job or being laid off when times are hard.
- 14. Getting ahead (more money, promotions, etc.) in the kind of work I choose.

- 5 -

SECTION II

High school students differ greatly in the amount of time and thought they give to making choices. Use the statement below to compare yourself to the typical students of your sex in your grade on each of the following kinds of choices (questions 15-21).

Compared to my classmates I am

- (A) much below average, not as good as most
- (B) a little below average
- (C) average
- (D) a little above average
- (E) much above average, better than most

..... in the amount of time and thought I give to:

- 15. Choosing high school courses.
- 16. Choosing high school activities.
- 17. Choosing out-of-school activities.
- 18. Choosing between university, community college, business college, work, military service, marriage, homemaking, etc.
- 19. Choosing a university, community college, branch of Military service, husband or wife, etc.
- 20. Choosing an occupation for after high school, university, college or job training.
- 21. Choosing a career in general.

- 22. How would you rate your plans for after high school?
 - (A) Not at all clear or sure.
 - (B) Not very clear
 - (C) Some not clear, some clear.
 - (D) Fairly clear.
 - (E) Very clear, all decided.

- 6 -

- III. Below are five possible answers to use in answering questions 23 through 33, questions about how much you know about the occupation you said you like best on the green sheet. Mark the number of your choice on the Answer Sheet.

I know

- (A) hardly anything
- (B) a little
- (C) an average amount
- (D) a good deal
- (E) a great deal

..... about:

- 23. What people really do on the job.
- 24. Specialities in the occupations.
- 25. Different places where people might work in this occupation.
- 26. The abilities and traits needed in the occupation.
- 27. The physical working conditions.
- 28. The education or training needed to get into the occupation.
- 29. The courses offered in high school that are the best for the occupation.
- 30. The need for new people in the occupation.
- 31. Different ways of entering the occupation.
- 32. The starting pay in the occupation.
- 33. The chances for getting ahead in the occupation.

- 7 -

- IV. Here are five answers which can be used for questions 34 through 47. Use these answers to show whether or not you would go to the sources of information listed below for help in making your job, university, or other training plans.

I would

- (A) definitely not
- (B) probably not
- (C) not be sure whether to
- (D) probably
- (E) definitely

..... go to:

- 34. Father or male guardian.
- 35. Mother or female guardian.
- 36. Brothers, sisters, or other relatives.
- 37. Friends.
- 38. Team coaches or Physical Education teachers.
- 39. Other teachers.
- 40. Minister, priest, or rabbi.
- 41. School counsellors.
- 42. Private counsellors, outside of school.
- 43. Books with the information I needed.
- 44. Audio or visual aids like tape recordings, movies, or computers.
- 45. University or community college calendars.
- 46. Persons in the occupation or at the university or college I am considering.
- 47. TV shows, movies, or magazines.

- 8 -

- V. Here again are five answers which are to be used with the following items. This time use the statements to show which of the sources of information below have already given you information which has been helpful to you in making your job, university or other training plans.

I have obtained

- (A) no useful information
- (B) very little useful information
- (C) some useful information
- (D) a good deal of useful information
- (E) a great deal of useful information

..... from:

- 48. Father or male guardian.
- 49. Mother or female guardian.
- 50. Brothers, sisters, or other relatives.
- 51. Friends.
- 52. Team coaches or Physical Education teachers.
- 53. Other teachers.
- 54. Minister, priest, or rabbi.
- 55. School counsellors.
- 56. Private counsellors, outside of school.
- 57. Books with the information I needed.
- 58. Audio or visual aids like tape recordings, movies, or computers.
- 59. University or community college calendars.
- 60. Persons in the occupation or at the university or college I am considering.
- 61. TV shows, movies, or magazines.

SECTION VI.

Here, each question (Nos. 62-66) has its own set of possible answers.

62. Which of the following is the best source of information about job duties and opportunities?
- (A) The Encyclopedia Britannica
 - (B) World Almanac
 - (C) Scholastic Magazine
 - (D) Occupational Monographs
 - (E) The Occupational Index
63. Which one of the following would be most useful for detailed information about getting into university or college?
- (A) The World Book Encyclopedia
 - (B) Webster's Collegiate Dictionary
 - (C) Horizons
 - (D) Reader's Digest
 - (E) The Education Index
64. Which one of the following pairs of occupations involves the same level of training and responsibility?
- (A) Tailor, Sales Clerk
 - (B) Engineer, Accountant
 - (C) Tailor, Engineer
 - (D) Accountant, Sales Clerk
65. The occupational fields expected to grow most rapidly during the next ten years are:
- (A) Professional and service.
 - (B) Sales and crafts.
 - (C) Crafts and clerical.
 - (D) Labour and sales.
66. Between 1910 and 1970, the industry employing the greatest number of workers changed from:
- (A) Agriculture to wholesale and retail trade.
 - (B) Manufacturing to agriculture.
 - (C) Wholesale and retail trade to manufacturing.
 - (D) Agriculture to manufacturing.

- 10 -

SECTION VII.

Occupations are different in the amount of education required for employment. Five different amounts of education are listed below. For each of the following occupations (questions 67-74), mark on your Answer Sheet the amount of education usually required.

Amount of Education:

- (A) High School Graduation Diploma
- (B) Apprenticeship Training
- (C) Technical School or Community College (2 years)
- (D) University Degree (3 or 4 years)
- (E) Professional training beyond a 3 or 4 year University Degree

Occupation:

- 67. Stenographer.
- 68. Dental Technician.
- 69. Family Doctor (Physician).
- 70. Mail Carrier.
- 71. Plumber.
- 72. Computer Operator.
- 73. Bank Clerk.
- 74. Social Worker.

SECTION VIII.

Many occupations use special tools. Below is a list of special tools or equipment and a list of occupations. Match the occupation in Column A with its equipment (Column B).

COLUMN A

Occupation :

- 75. Electrician
- 76. Bookkeeper
- 77. Bricklayer
- 78. Dressmaker
- 79. Medical Technician

COLUMN B

Equipment :

- (A) Tracing Wheel
- (B) Ammeter
- (C) Centrifuge
- (D) Trowel
- (E) Ledger

- 11 -

SECTION IX.

Here again, each question has its own set of answers.

0. In the ninth and tenth grades, plans about jobs and occupations should:
 - (A) be clear
 - (B) not rule out any possibilities
 - (C) keep open the best possibilities
 - (D) not be something to think about.

1. Decisions about high school courses can have an effect on:
 - (A) the diploma one receives
 - (B) the kind of training or education one can get after high school
 - (C) later occupational choices
 - (D) how much one likes school
 - (E) all of these.

2. Decisions about jobs should take into account:
 - (A) strengths, or what one is good at learning and doing
 - (B) what one likes to do
 - (C) the kind of person one is
 - (D) the chances for getting ahead in that kind of job
 - (E) all of these.

3. One of the things that great artists, musicians and professional athletes have in common is the desire to:
 - (A) make money
 - (B) have large audiences
 - (C) be the best there is at what they do
 - (D) teach others to do what they do.

4. J. D. might like to become a computer programmer, but knows little about computer programming and is going to the library to find out more about it. The most important thing for J. D. to know about this occupation is:
 - (A) the nature of the work involved
 - (B) the rate of pay
 - (C) the hours of work
 - (D) the place (or places) where one can get the right training.

- 12 -

85. M. S. likes high school biology and general science courses best, and likes to do schoolwork alone in order to be able to concentrate. Such a person, beginning to think about a future occupation, should consider:

- (A) Accountant
- (B) High School Science Teacher
- (C) Medical Laboratory Technician
- (D) Nurse.

86. P. T. is the best speaker on the school debating team, described in the school yearbook as "our golden-tongued orator -- a real nice person who can listen as well as talk -- could sell refrigerators to the Eskimos". P. T. will probably graduate in the bottom half of the class, although test scores show superior ability. P. T.'s only good grades (mostly B's) are in business subjects, poorest grades (mostly D's) are in English and social studies.

P. T. desires to become a trial lawyer. Which of the following reasons shows best why this desire is not very realistic?

- (A) With grades like these, it is difficult to get into a university.
- (B) P. T.'s poorest grades are in the subjects that are most important for law.
- (C) There is much more to being a lawyer than being good at public speaking.
- (D) All of the above are good reasons for thinking that this student will have a hard time becoming a trial lawyer.

87. The facts about P. T. suggest that he or she should think about becoming:

- (A) an accountant
- (B) a sales representative
- (C) an actor or actress
- (D) a school counsellor
- (E) a lawyer.

88. A. M. is very good with skilled handwork and there isn't anybody in the class who has more mechanical aptitude or is better at art. A. M. also does very well in math. A. M. likes all of these things.

What should this student do?

- (A) Look for an occupation which will use as many of these interests and abilities as possible?
- (B) Pick an occupation which uses math since there is a better future in that than in art or in working with one's hands?
- (C) Decide now on one of these activities because of ability or interest, and then pick an occupation which uses that kind of asset?
- (D) Put off deciding about the future and wait until interest in some of these activities declines?

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89. E. R. took some tests and got scores which show promise in clerical work. The student says, "I just can't see myself sitting behind a desk for the rest of my life. I'm the kind of person who likes variety. I think a travelling job would suit me fine". E. R. should:
- (A) disregard the tests and do what he or she wants to do.
 - (B) do what the tests say, since they know best.
 - (C) look for a job which will use the clerical abilities but not keep him or her pinned to a desk.
 - (D) ask to be tested with another test, since the results of the first ones are probably wrong.
90. B. R. gets very good science grades but doesn't care too much about these subjects. The subject liked best is art, even though grades in it are only average. This student is most likely to do well in an occupation if he or she:
- (A) forgets about interest in art since he or she is so much better in science.
 - (B) doesn't worry about grades in art, because if you like something you can become good at it.
 - (C) looks for an occupation which uses both art and science, but more science than art.
 - (D) looks for an occupation which involves both science and art, but more art than science.
91. L. F. professes not to care much about what kind of work is available to him or her on leaving school as long as it involves working with people. If this is all this student cares about he or she is likely to make a bad choice because:
- (A) this kind of work usually requires a university degree.
 - (B) employers usually want people with definite interests and objectives.
 - (C) jobs involving work with people are looked down on, since they usually don't pay as well as scientific work.
 - (D) occupations in which one works with people can be very different from each other in the abilities and interests which are needed.

THANK YOU.

APPENDIX B

Raw Scores on Scales A and B of the
Career Development Inventory Presented
 According to School and Birth Order Position

School	Firstborn		Middle Born		Youngest Born	
	Scale A	Scale B	Scale A	Scale B	Scale A	Scale B
1	158	228	87	240	149	299
	106	258	83	197	94	199
	136	252	75	227	133	254
	144	390	105	224		
	81	201				
	93	258				
	61	287				
	86	176				
	114	268				
	100	276				
2	116	253	117	240	73	183
	96	229	93	222	112	239
	107	258	90	224	107	269
			87	232	113	267
			74	312	122	249
					85	247
3	98	210	79	188	110	257
	84	178	94	147	119	297
	70	179	128	213	128	321
	74	186	77	204	90	262
	107	301	102	250	90	190
	103	209	109	217		
	125	330	113	324		
	99	216	115	287		
		60	210			

Raw Scores on Scales A and B of the
Career Development Inventory Presented
 According to School and Birth Order Position (continued)

School	Firstborn		Middle Born		Youngest Born	
	Scale A	Scale B	Scale A	Scale B	Scale A	Scale B
4	89	241	94	312	91	341
	95	194	85	122	63	175
	139	259	69	206	141	207
	90	198				
	95	279				
	83	211				
	119	324				
	123	335				
	65	267				
	81	232				
5	67	235	103	243	95	197
	151	413	93	285	93	229
	116	269	67	221	104	228
	58	169			137	176
	99	213			124	260
	106	269			119	153
					114	237
					81	247
					124	247
					90	183
6	119	252	90	231	128	269
	87	200	102	164	101	259
	138	254	91	185	124	205
	108	203	111	233	81	202
	121	225	73	199	76	190
	97	253	98	201	59	118
	114	221	90	178	130	232
	106	268			123	206
	102	214			115	309
	123	254			68	168
	117	248			103	205
	126	220				
	99	263				
	106	266				
	95	226				

APPENDIX 9

ABSTRACT OF

The Relationship Between the Vocational Maturity of Adolescent Males and their Birth Order Position¹

Secondary school students vary in their planning and preparation for post secondary education and/or career. Some students manifest a planned approach to post secondary education and career as early as the first year of secondary school, whereas others seem to be floundering even in their senior year.

This study is an investigation of some basic personality factors that influence vocational development. Two theories are examined, Super's theory of vocational development and Adler's theory of "Individual Psychology". Super argues that self concept is an important variable in vocational development. Adler argues that birth order positions of an individual is related to his/her degree of social interest. In analyzing both theories, it is concluded both that social interest is related to self concept and that social interest also is related to vocational development. The further conclusion that middle born children are more homogeneous in their development of social interest than

¹ Pinchas Pleet, masters thesis presented to the Graduate School of Education of the University of Ottawa, Ottawa, Ontario, January, 1978.

either firstborn or youngest born children leads to the hypothesis that middle born children manifest lower variance of vocational maturity scores than either firstborn or youngest children.

The subjects used in the testing of the hypothesis were fifty-two firstborn, thirty-one middle born and thirty-eight youngest born ninth grade adolescent males in six high schools located within a moderately sized metropolitan area in Ontario. At the .05 level of significance, the null hypothesis of no significant difference among the variances of vocational maturity scores of firstborn, middle born and youngest born ninth grade adolescent males was not rejected. Although there was a trend in the direction of the hypothesis, the differences in variance among the vocational maturity scores of the three birth order positions were not statistically significant. Thus, differences in the personality of firstborn, middle born and youngest born as revealed by their respective abilities to cope with the tasks of life, especially the occupational task, were not supported by the data of this study.