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THE EFFECTS OF PSYCHOLOGICAL BIRTH ORDER ON GOLDBERG'S "BIG 5"

PERSONALITY TRAITS

by  
Carol S. Kiedaisch

A Thesis

Submitted in partial fulfillment of the requirements of the  
Masters of School Psychology Degree  
of  
The Graduate School  
at  
Rowan University  
May 9, 2006

Approved by  
Professor

Date Approved 5/10/06

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## ABSTRACT

Carol S. Kiedaisch  
THE EFFECTS OF PSYCHOLOGICAL BIRTH ORDER ON GOLDBERG'S  
"BIG 5" PERSONALITY TRAITS  
2005/06  
Dr. Roberta DiHoff, Advisor  
Master of Arts Degree in School Psychology

The purpose of this study was to explore whether or not birth order had any influence on personality traits. Based on the theories of Alfred Adler, that position in the family effects our perceptions and roles within the family, we surveyed seventy-two undergraduate students at Rowan University using two questionnaires. The first questionnaire was the Campbell-White PBOI which looks at the relationship between birth order and psychological birth order. The results of the questionnaire, using Pearson Chi Square, showed no significance between birth order and psychological birth order. The second questionnaire looked at birth order and the five personality traits of Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Intellect. Although there were some interesting trends that emerged, the overall findings did not support ant link between birth order position and specific traits that have been ascribed to those positions.

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## CHAPTER 1 – THE PROBLEM

### Need

Cain and Able, Donny and Marie, Marsha and Jan—siblings, born into the same family surrounded by the same environment, but with different personalities. Why? Is it nature? Does DNA account for the differences? Is it environment? Does the unique family position we are born into shape who we are to become; confident, shy or maybe a rebel? This is the question previous research has tried to answer, does birth order affect personality. The research is inconsistent. Sullaway, in his book *Born to Rebel*, asserted that overtime strategies perfected by first born spawn counter strategies by later borns (Sullaway, 1996). Learning how to cope with siblings in a family may lead to the personality traits that become dominate as we grow older.

Alfred Adler suggests that based on the perceived role that the child occupies in the family, it can affect personality traits and core features of the child (Ansbacher & Ansbacher, 1956). The roles and traits developed in childhood can then affect who and what they become later in life. As adults their style of relating to others, their career choices and interests, and how compatible they are in long term relationships, may all have been influenced by the traits and strategies acquired as a child.

The far reaching implication of birth order on personality is worth another look. If an organized and coherent set of behaviors can be associated with an identifiable position within the family (Stryker & Stathan, 1958), then children and adults could be guided in a direction that would be most beneficial to their success. This research is

a basic step in that direction and may be used to build upon in future studies of birth order and its affect on personality traits.

### Purpose

The purpose of this study is to examine the relationship between the four birth order positions; first, middle, youngest and only, and personality characteristics. Specifically, can we attribute certain personality characteristic- extraversion, agreeableness, intellect, conscientiousness, and emotional stability- to certain birth order positions. A personality inventory based on the above "big 5 "personality traits and a psychological birth order inventory will be given to college undergraduates to determine if there is a relationship.

### Hypothesis

The aim of this research is to examine the question; does birth order affect personality traits? Particularly, in relation to Adler's Birth Order Theory, this study proposes that participants in each of the four birth order positions, First born, Middle, Youngest and Only, will display primary characteristics, described by Adler, that are dominate for each birth order position.

### Theory

Most parents feel that they treat all their children the same. They try to be equalitarian in their praise, punishments and rewards. Then why do children raised in the same environment turn out with such different personalities? According to Alfred Adler each child born is looking to fit into their own unique niche within the family (Adler, 1927).



Birth order makes each psychological situation for each child different and exclusive experience. The interpreting of this experience by the child influences their personality.

Adler identified five birth order positions, four of which will be used for this study, oldest child aka first born, middle child, youngest and only child (Adler, 1958). The First Born is the center of attention and sole object of care. First Borns tend to be spoiled and in a favored position. Everything about the First Born is new to the parents and everything the First Born does is documented and recorded for posterity. With only adults for role models, First Borns take on adult characteristics such as seriousness; to be in control, organized, to be on time, goal oriented, conscientiousness, responsible, adhere to norms and rules, likes order and structure. First Borns are also under pressure to perform and live up to the high expectations of their parents. First Borns are the pace setters for the rest of the family. They are given more work and most of the discipline (Leman, 1998). The First Born is then “dethroned” (Adler, 1927).

The next birth order is that of the Middle Child. This child often feels “squeezed out” and sees life as unfair. They see their role as nothing special and may have feelings of rejection or not fitting in to the family (Stewart, Stewart & Campbell, 2001). The Middle Child can go one of two ways, they can become the peacemaker, the child who wants everyone to be happy with no conflicts or they could become the “rebel”. Some of the personality characteristics of the Middle Child are defensiveness, impulsivity, non-competitive, sociable, sensitive, cooperative, diplomatic, secretive, rebellious and laid back.

The Youngest Child, always the baby, perceived as less capable, often

pampered and indulged. The Youngest faces the fewest demand. The Youngest tend to be attention seekers and have more revolutionary ideas. Dominate personality traits are affable, sociable, charming, affectionate, tenacious, initiators and popular. The Youngest may also obtain skills to manipulate others into doing things for them.

The Only Child shares some of the characteristics of the First Born, mainly the high achievement drive, but has their own set of traits. Their world is made up of adults so they relate well to them but may have difficult sharing and cooperating. The Only Child is also the center of their parent's world; they may spoil them but also seek control. The Only Child may look confident on the outside but feel inferior to others. The Only Child may always be trying to go the extra mile for approval. The Only Child can display the following personality traits; defensiveness, desire novelty, autonomy, perfectionism, confidence, organized, logical and scholarly.

Adler's work has been studied and researched and the results are inconsistent. Not all people follow the roles described. The family is a dynamic and fluid relationship that causes variations in each child in each birth position but there are certain tendencies and generalities that can be seen in the four birth order positions that Adler has theorized.

#### Definitions

The author throughout this thesis will use the following terms and definitions. When this researcher speaks of birth order there are 2 types that must be clarified. Actual or ordinal birth order which is the number in order of successive births (Adler, 1927) and psychological birth order which is the position the child perceives his position is in addition to or regardless of actual birth order. For example, if the actual first born is

disabled in some way the actual second born (middle or youngest ordinal position) may acquire the role of the first born, so his perception of his role is First Born and may gain the traits associated with that position. In adoptive situations, the adopted child may have been born first to the biological mother but is being raised in the position of Middle Child.

The term sibling spacing is the amount of years between the births of each child. If there is five or more between the children, the psychological birth order starts over for that child and his/her perceived position is that of First Born.

Family size is defined as the number of children in the family unit. The family may all be biologically related or the children can be adopted.

The five factor models (FFM) of personality or the “Big 5” are based on universal set of personality traits that can explain the inter-individual variation in personality. The “Big 5” used in this research are Extraversion, Emotional Stability, Intellect (openness to experience), Agreeableness and Conscientiousness.

#### Assumptions

The researcher assumes that all participants of the study will complete the surveys with integrity and interest in the outcome. A sample size of 100 is assumed to be large enough to see significance if there is a positive relationship.

#### Limitations

This study is limited in that it uses only college undergraduates in southern New Jersey. Generalizing the findings to the larger population may be limited due to the demographics of college students. It is also limited because the study will not include

sibling spacing when collecting data and will only give family size as overall information for the study but it will not be used in any analysis of the data.

#### Overview

Chapter two will be comprised of a comprehensive review of the literature that is relevant to this study. Other research and findings will be discussed that have looked at the same and related topics. The instrument of measure and the research design will be detailed in chapter three. In chapter four, the results of the data collected will be presented. The last chapter, five, will provide a discussion of the findings and a conclusion, including future research recommendation.

## CHAPTER 2: REVIEW OF THE LITERATURE

Birth order research has been an intriguing subject since the time of Alfred Adler (1927), who first introduced the theory of psychological birth positions. Birth order is an area of research that researchers and lay people alike can relate to. Everyone holds some position in a family, and has taken with them the experiences and influences of that position.

Stewart and Stewart (1995) have compiled data on the trend of birth order research from 1976 -1993. They looked at 1011 studies, dissertations and thesis and have assembled a list of the topics that were most frequently studied. Included in the list are the areas of achievement, parent-child interaction, intelligence, personality, cross culture and psychopathology. These six topics represent 47% of the 1011 published studies (Stewart & Stewart, 1995). Over the last 20 years there has been a decline in the number of studies done regarding birth order, however the number of published pages has been consistent (Stewart & Stewart, 1995). This lends support that researchers are still interested in the subject but are looking at doing higher quality studies. Several researchers (Campbell, Sidek) have designed their own personality inventories, which are closely related to Adler's defined birth positions, to see if they can get more consistent results in the data.

The review of the literature for this research will include the broader areas of birth order bias, risk taking and rebellious behavior, achievement/career and birth order, birth order and intelligence/learning, birth order and relationships and then the more specific

references to this study, birth order and personality traits.

### Birth Order Bias

Parental expectations, children learn to do certain things in certain roles by what their parents encourage (Parks, 1995). The parent's treatment of each child is different based on the bias of birth order. The parents perceive each spot in the family in a particular way and their response and guidance of each child is influenced by that position. From the beginning the oldest is expected to tow the line and set good examples and the youngest is babied. This bias sets down the basis of the child's perceived experiences in the family.

Not only in the family may bias influence treatment but also in a clinical setting. Alan Stewart's 1995 study that manipulated birth order was effective in influencing the participants to develop impressions of the client that were consistent with the prototypical characteristics of each birth position (Stewart, 1995). In other words, when the counselor knew the birth position of the clinical client, the outcome of their impression of the client corresponded to the general characteristics in Adler's birth position theory. It can be theorized that their impressions were biased by the fact of birth position.

### Risk Taking/Rebellious Behavior and Birth Order

In *Born to Rebel*, Sulloway (1996) points out that Later Borns have been more likely than First Borns to challenge the status quo. They are looked upon as more rebellious and risk taking. In a study looking at civil disobedience Zweigenhaft and Von Ammon looked at birth order position and number of arrests for protesting. They found

that 24 out of 56 (43%) who had not been arrested were Later Borns, that 6 of the 12 (50%) who had been arrested once were Later Borns and that all 5 (100%) who had been arrested more than once were all Later Borns (Zweigenhaft & Von Ammon, 2000). The small study shows some evidence to the rebellious characteristic of Later Borns.

You would expect to find that among dangerous leisure time activities i.e. skydiving, rock climbing; you would find more Later Borns than First Borns based on general findings of previous studies. However inconsistency is a common barrier found in birth order research. Steff, Grecas, Frey (1992) found no relationship between birth order and risky leisure activities among members of the US Parachute Association. Yet Sohl & Yusuff (1191) found Later Borns choose more dangerous sports. Inconsistencies such as these fuel the fire for continued studies in the social psychology field.

#### Achievement/Career Interest and Birth Order

People attempt to discover the causes of other's behavior. They want to attribute their good or poor performance to something that is either internal – within the person or external – environment. Society tends to look internal attributes for success and failure. Does birth order play a role in making judgments about causes of others behavior? Phillips and Phillips (1994) found that First Borns attribute more responsibility for past good or poor performance to internal factors of the applicant whose data was reviewed and first born managers may be more likely than Later Borns to hire a candidate whose past good performance is attributed to the person's efforts. Due to their experiences, their own personality and internal motivation, First Borns generalize their characteristics to other people. When reflecting on instances of their own good performance, First Borns

(including only) made stronger internal self-attributes than Later Borns (Phillips & Phillips, 2000). First Borns see themselves as in control and responsible for their performance. There has been some support that achievement motivational patterns vary according to birth order position (Watkins, 1992).

What does the research say about specific career areas and birth order? White, et al (1997), found these trend; Oldest Child scores were significantly related to the social and business contact areas. The more the individual identifies with the need to strive for perfection and please others, the greater interest he/she may express in socially oriented careers requiring interpersonal abilities. The Youngest Child is less interested in science and the technical, they stay away from the fields that stress concrete or data driven perspectives. The Middle Child tends to express vocational interest around ideas rather than data.

The research has also looked at specifically women's career interest and birth order. Some of the findings are inconsistent with White et al, Bohmer and Sitton found Later Borns to select careers in science and women writer's are more likely to be First Borns. Youngest were significantly more likely to become performing artist (Bohmer & Sitton, 1993). This trend highlights the youngest characteristic of wanting to be the center of attention.

Some argue that the prestigious position of being first born prepares them for certain careers. One of these careers is political leadership. Being the Oldest, a child may have had pre training as a leader of the sibling and in the family making them better qualified for a future as a political leader. Andeweg and Van Den Berg looked at data



from almost 1200 incumbents and concluded that being first born increases the likelihood of attaining political office (Andeweg & Van Den Berg, 2003). Middle Borns and Later Borns were underrepresented in incumbents. Once again, a study lends support to the theory that for whatever reason, birth order does play a role in who we may become.

#### Intelligence/learning and Birth Order

Most parents would agree that they hope that all their children have average to above average intelligence. When there is only one child competing for the parent's attention, that child may receive the advantage of one to one stimulation. As the family grows, the time spent with each child becomes minimal and may disappear altogether. Is the intelligence of each child predetermined by genetics or can intelligence be "learned"? In looking within families, patterns appear relatively random with little relationship of intelligence to birth order (Rodgers, 2001). The additional time the first child spends with his parents before the sibling come along may lend itself to his personality but not to his intelligence.

One aspect of intelligence is learning. Can knowing the birth order of the students help facilitate learning in the classroom? Morales (1994) states that birth order theory can be used to help in classroom cooperative learning. Teachers can balance the child's designated role in the group with the child's characteristics that are based on birth order theory. From their perspective, students expect teachers to act like parents and classmates to behave in the same way as their siblings. Behavior patterns learned at home are then transferred to the classroom. In cooperative learning, a group of students complete the task. If each child is assigned their role based on the role they play in their

family, they may have an easier time fulfilling their role in the group task.

The more the teacher knows about his/her students and their abilities to learn the more he/she can assist them. Birth order theory can be used to give the teacher a psychological frame of reference to assist them in understanding the children in the classroom (Romeo, 1994). Each birth position has positive and negative values. Teachers can use these qualities to help build rapport with the student and to learn what style of teaching may be most beneficial to the student.

Birth order may play a role in how a child, it can also play a role in how much education the child pursues. Birth order was found to have an impact on total years of education completed among the middle class. Only children appear to excel in terms of education attainment (Travis & Kohli, 1995) and a study by Astin cited in Williams (1983) stated that 47% of women possessing a doctorate degree in the United States were First Borns.

#### Relationships and Birth Order

Subjective impressions may be one of the reasons psychologist and non-psychologists alike persist in attaching importance to birth order. Relationships are the foundation of the family, whether good or bad. These relationships are predicated on one's position in the family. Our perceptions of these positions may influence how we feel about certain relationships. Salmon (2002) reports that birth order had a significant impact. Middle Borns express more positive views towards friends and less positive opinions of family in general. Middle Borns were less likely to help family member in need than First Borns or Youngest. Middle Borns were less family oriented but were the

least likely to cheat on their partner. This behavior could reflect back on how they felt as a middle child, “squeezed out”, with no alliance with the family.

Can group affiliation be effected by birth order position? This concept was looked at by Nelson and Harris and their findings were that First Born females did not score significantly higher on the affiliation measure nor were they found to be more group oriented than Later Borns (Nelson & Harris, 1995). The only significant finding was birth order and belonging to an organization. First Borns were found to hold membership in significantly more organizations than Later Borns. If First Borns are characterized by achievement driven behavior, this evidence lend some support to the “big picture” which is that birth order does affect personality characteristics.

#### Personality Traits and Birth Order

Perception, this researcher finds that this is a main concept in birth order research. Birth order positions and characteristic can be mapped out and studied in empirical ways but it is the perception, that each participant brings to the research, which is being measured. If we gather enough evidence of what the perceptions are, does that make it true? This could be the reason that we see a lot of inconsistency in the birth order research when it comes to a predictor of personality.

Eckstein (2000) identified 151 empirically based studies reflecting significant birth order characteristics. In each study, characteristics of Oldest, Middle and Youngest were looked at and categorized. Examples for each are; Oldest - high achievers, conformist to parental values, easiest influenced by authority, self discipline; Middle – sociable, greatest feeling of not belonging, relates well to older and younger people;

Youngest- sympathetic, most popular, high self esteem, spoiled. These are descriptors that we have heard before that we can associate with personality and birth order.

There is another study that looks at categories of life style themes. These themes run along the same lines as the other birth position characteristics. They found that First Borns had positive correlations to 3 of the 10 BASIS-A scales, taking charge, wanting recognition and striving for perfection. (Gfroerer et al, 2003). Middle Borns showed a relationship to 6 of the 10 scales; negative related to belonging/social interest, going along, striving for perfection and softness. They were positive related to being cautious and harshness. The Youngest had significant findings with 5 of the 10 scales, belonging/social interest, entitlement, striving for perfection and softness were positively related. Being cautious was negatively related. These themes are in line with other findings on birth order and personality traits.

Ernst and Angst (1983) state that First Borns and Later Borns may indeed develop different patterns of behavior, but they may behave that way only in the presence of parents – parent specific personality. The similar concept of context specific learning (Harris, 2000) avows that people do not automatically transfer behavior from one context to another. Patterns of behavior acquired in the family tend to be inappropriate or useless in other settings. Outside the family, First Borns and Later Borns are indistinguishable in personality.

Most of the birth order studies are self- reports; this may be one of the factors that cause the discrepancies in the research. Looking at responsibility and dominance as personality traits, no main effect was found for birth order (Harris and Morrow, 1992).

First Borns did not have a higher score on responsibility or dominance than Later Borns. Gender had a larger effect than birth order, where female saw themselves as more responsible than oldest born males. Oldest born males had higher dominance scores than oldest females but youngest females had significant higher scores than youngest males. Also no significance was found between the two personality dimensions of extroversion-introversion and neuroticism as part of birth order (Farley, 1975), and the same results were found in a self-report on perceived personality, there was no significance between traits of extroversion, neuroticism and openness in First Borns (Jefferson, Herbst and McCrae, 1998). Jefferson et al did find a small effect for First Borns who's scores were lower as compared to Last Borns on altruism and tenderness. First Borns saw themselves as more hard headed and self-centered than Later Borns. When peers did the rating of others, they rated their Later Born peers higher in openness and agreeability. This evidence suggests that birth order may have subtle effects on personality as reported both in self-reports and observer rated reports.

Research conducted in Malaysia with a personality inventory based on Adler's birth order positions (Sidek Personality Inventory) found certain dominate trait patterns although no significant relations existed between birth order and personality traits (Tharbe and Harun, 2000). In a study conducted on adopted cohorts and rearing order, rearing order exerts very little influence on personality. (Beer and Horn, 2000). The data showed a weak connection to Sulloway's conclusions and the big "5" personality traits; neuroticism, extraversion, openness, agreeableness and conscientiousness.

The other side of the birth order coin is that it does have a major influence on our

perceptions of our place in the world and the personality traits we develop to cope in the family atmosphere and into living outside the family. The view of this researcher is that of Adler's, that there is evidence that our perceptions will lead us to obtain certain personality traits. Individuals interact with their world based on their own assumptions. These assumptions are usually influenced by birth order and affect the kinds of perceptions he/she develops. Adler speaks of general patterns of behavior for birth positions. There have been findings that support Adler's contentions. Croake and Olson looked at Adler's view of birth order. They used the 10 basic scales of the MMPI to evaluate their participants. Their general findings were; Oldest and Youngest males scored significantly higher on most of the MMPI scales than did Middle born males. (Croake & Olson, 1977). These finding support one of Adler's contentions about birth position that is that Oldest and Youngest children are more likely to have difficulty in development due to rivalry and lack of cooperation in the family (Adler, 1958).

Paulhus, Trapnell and Chen investigated birth order effects on personality and achievement in four studies. The studies were self-reports on about others and themselves in the family. In one of the studies they manipulated the knowledge of the birth order, and in two of the studies it was a take home packet that asked the participants to rank all family members on all variables. Across all diverse data sets First Borns were nominated as most achieving and contentious. Later Borns were nominated as most rebellious, liberal and agreeable (Paulhas, Trapnell & Chen, 1999). Overall, the results support the theories of Sulloway's and Adler's of personality development.

## White-Campbell PBOI and Birth Order

There are many ways to measure personality in the field of psychology. In this research alone there has been use of the MMPI, Sidek Inventory, BASIS-A inventory, Howarth Personality questionnaire (Howarth, 1980 which found First Borns to have the highest superego rating) and others designed by the researchers of each study. The last two research studies that will be discussed used the White-Campbell Birth Order Inventory (PBOI).

The PBOI instrument of measure was developed to define the four birth order positions described by Adler. The inventory has forty questions ten questions for each of the four positions (Oldest, Middle, Youngest and Only). The questions were developed from the literature on the differential characteristics of birth order. Chapter three will discuss the validity and reliability of the inventory. This inventory is the instrument that will be used in the current study, so the researcher gave more significance to the following two studies.

Campbell, White, & Stewart looked at the relationship between psychological birth order, defined as the way the child locate or perceive themselves in the family structure (Shulman & Mosak, 1977) to actual birth order. These perceived positions, Oldest, Middle, Youngest, Only, have been described by Adler and have been supported in the literature over time (Dreikurs & Soltz, 1964; Pepper, 1964; Sweeny, 1981). Using the PBOI, the results of the study indicate a significant relationship between the 556 participants' actual birth order and psychological birth order. (Campbell, White and Stewart, (1991). The distribution into each category is as follows; 40.2% of all the oldest

children corresponded to the psychologically oldest category, Middle child, 28.4% corresponded to the appropriate psychological position and 45.7% of the actual Youngest corresponded to the psychologically Youngest category.

In 2001, Stewart, Stewart and Campbell again looked at psychological birth order and its relationship to family atmosphere and to personality. Family atmosphere is the context in which children start to develop guidelines for their behavior. The family atmosphere is affected by the parents' relationship and the implementation of values. In the study, Stewart et al measure two dimensions of family atmosphere, relational characteristics i.e.: close, conflicted, distant, cooperative and conveyance of family values, interest and activities. What are the content issues and activities around which the family typically relates (Stewart, Stewart & White, 2001). The PBOI and Family of Origin scale were used to measure the interaction between the two. The researchers found that overall there was a significant relationship between psychological birth order scale, actual birth order and the family atmosphere variables (Stewart, Stewart & White, 2003). In the second part of the study, relationship between personality characteristics and psychological birth order was measured using the PBOI and the Personality research form (PRF). The PRF is a 352 true false item inventory that generates 20 personality traits. In the study only 14 of the traits that were relevant were used. These scales address the need for achievement, affiliation, aggression, autonomy, cognitive structure, defence, domination, exhibition, harm avoidance, impulsivity, order, sentience, social recognition, and understanding. The research had mixed support, 48% of the hypothesized relationships being observed (Stewart, Stewart & Campbell, 2001). Some



of the correlations that were found were; the psychologically first scale was negatively associated with the trait of impulsivity, an expected result based on the characteristic of First Borns that are deliberate and have a planned approach to life. Also, the women's first scale was predicted by the need for achievement and social recognition also dominance, which seems to be a theme with First Borns. In the Youngest position scores reflecting exhibition were supported. In these two studies caution is advised since they are exploratory in nature but a general furtherance in understanding that psychological birth order, family atmosphere and personality are related.

### Summary

Birth order theory is a popular one. It will continue because people want to know why we do the things we do. Is it internal or external? Can we predict personality based on how many siblings we have and where we were in the pecking order? In the research stated above, this researcher sees that there is some kind of influence that is exerted on personality, although in some of the studies there is a weak association or none. There is evidence in the research to support the construct of psychological birth position and that they do reflect actual birth order. Also, the general findings are that categories of personality traits can be linked to psychological birth order positions, characteristics that paint a general portrait of the person. That not to say that you are locked into those roles but the ways that you learn and your social identity may be shaped by the influences of your family position. The trends of the studies are going more in the direction of identifying valid instruments of measure and designing studies that are more qualitative.

Incorporating into the design are ways to limit the influence of gender, family size and social impacts such as divorce and single parent homes. The area of study in the future will still be in achievement, intelligence, personality traits and a new trend towards using the strengths from each birth order position to develop learning strategies to help students be successful at their ability level.

## CHAPTER 3 - THE DESIGN

### Sample

The design is the “How To” section of the study. In this chapter the researcher will lay out the design, which will include details on the participants, permission, measures of the data, analyzing the data and the hypotheses.

For this study, the researcher has chosen, for the sample, to use male and female undergraduates at Rowan University in Glassboro, NJ. The study surveyed seventy-three participants. The participants were from three sources. The first source was the subject pool in the psychology department at Rowan. Dr. Tricia Yurak administers this pool. The participants from this pool have signed up, for credit, to be involved in research being conducted on campus. There were 9 subjects from this source. The other participants were surveyed from students that are in an undergraduate class being taught, in spring 2006, by Dr. Frank Epifanio and by Dr. Roberta Dihoff. Dr. Epifanio and Dr. Dihoff have been asked for permission to allow this researcher to survey their undergraduate classes. The remaining 64 subjects were from these combined classes. All participation was voluntary and students had the option to abstain from the survey.

One of the participants, one did not complete the second half of the birth order survey, so her results were not counted. Of the remaining seventy- two subjects eleven were male and sixty-one were female. The age range was eighteen to fifty six, with the mode being nineteen. There were no males in the Only birth order category. The average family size was three.

## Measures

To gather the raw data, there were two self-report inventories given to each of the participants. Also, all participants were asked to complete a demographic sheet to collect basic information about each person. There were no identifying information requested. The demographic questions that were asked are; gender, age, how many children in their family and birth order position. Due to the nature of the research, the question regarding birth order was a forced choice with four options. The participants had to choose from the four birth order positions being studied. They are First Born, Middle, Youngest and Only. This will help in clarifying what ordinal position the subject is in. The participant checked the one that best describes their birth order position. The middle position was defined as having siblings before and after them no matter how many. Such as, if there were four children in the family child number two and three would both be considered in the Middle position.

The demographic sheet, the personality survey and the birth order survey were all distributed at the same time. The birth order inventory was the forty question White-Campbell Psychological Birth Order Inventory (White, Campbell & Stewart, 1991). The authors provided this inventory and they wish to be given the results of the study (Appendix A). The participants were given the direction for completing this inventory orally. The directions were that each person was to read each of the forty questions and circle yes or no in response. They were advised to answer honestly reflecting back on how they felt when they lived at home during their childhood. If they had no siblings growing up, the participant ignored those pertaining to sibling interaction. The PBOI is

being used to show the relationship between actual birth order and the participants perceived psychological birth order. The PBOI is also a good instrument to use when correlated with other measures that are expected to co exist with sibling/family role perceptions such as personality traits.

The second inventory that was a personality inventory based on Goldberg's Big Five IPIP personality markers (Goldberg, 1999). This inventory is in the public domain and can be accessed without needing permission. (Appendix B). The inventory was obtained from the website [www.ipip.ori.org](http://www.ipip.ori.org).

The Big Five factors in this model are Extraversion, Agreeableness, Intellect, Conscientiousness, and Emotional stability. The inventory has fifty statements regarding behaviors and the participants must respond to each item by indicating how each statement reflects their behavior or attitude. The responses to each item are from one to five and are set up in this way; 1- very inaccurate, 2- moderately inaccurate, 3- neither inaccurate nor accurate, 4- moderately accurate, 5- very accurate. The person indicated their answer by filling in the bubble next to the number that corresponds to their choice. The directions were on the top of the inventory and were also given orally. The time to complete the demographic sheet and both surveys was about fifteen minutes. After all materials had been collected, a feedback sheet was given to all participants of the research with information regarding the purpose of the study, references for further information and contact information.

#### Analysis of the data

The raw data collected from the PBOI was scored differently for men and women.

Table 3.1 lists the items pertaining to gender. Counting the number of yes responses that were made for the items listed in each scale yielded the raw score. Please note that not all questions responded to are used in calculating the raw score. The raw score was then converted to a standard score format. The standard format used for this research was T-scores. Table 3.2 of Stewart and Campbell (1998) was consulted to calculate the T-scores. The T-scores were then compared to each other to see if there was a difference of six or more for females and seven or more for males. The data for the personality inventory was scored and the raw data was then converted to T-scores. SPSS was used to look at the data using descriptive statistics. This research is exploratory and correlational, so a relationship and/or trends between the variables were what the researcher was looking for.

The PBOI was examined for content validity by four doctoral level counselors with several years of training in individual and clinical psychology. The forty statements were evaluated according to their ability to discriminate one psychological position from another (Stewart & Campbell, 1998). The First Born statements included descriptors of feeling powerful and important, emphasis on rule following, achievement oriented and feelings of being “dethroned”. Middle position statements deal with feelings of competition and less importance. Youngest incorporated being the boss, perceptions of being charming and a social person. Only child statements had built in feelings of being protected, judged by parents and also anxious about parental pressure.

Test- retest reliability for three and eight week intervals on the PBOI were completed by Stewart & Campbell (1998), and the results showed that the PBOI

Table 3.1 Item Alignments for PBOI Scales

Scale	Women	Men
First	1, 5, 11, 15, 18, 27, 32	5, 18, 27, 32, 35
Middle	4, 7, 10, 13, 17, 21, 25, 29, 37	10, 13, 21, 25, 29, 37
Youngest	12, 16, 20, 24	12, 16, 20, 24, 36
Only	14, 26, 31, 34	9, 14, 26, 31, 34

Note: Count one raw score point for each item in the respective scales that are answered As Yes. All 40 items in the PBOI are not scored.

Table 3.2 Equations for Converting Raw scores to T-Scores format for the PBOI Scales  
(From Stewart & Campbell, 1998)

Scale	Women	Men
First	$T = \left[ \frac{(RawScore - 5.15)}{1.54} \right] \times 10 + 50$	$T = \left[ \frac{(RawScore - 3.81)}{1.30} \right] \times 10 + 5$
Middle	$T = \left[ \frac{(RawScore - 1.9)}{2.42} \right] \times 10 + 50$	$T = \left[ \frac{(RawScore - 1.04)}{1.53} \right] \times 10 + 50$
Youngest	$T = \left[ \frac{(RawScore - 1.62)}{1.27} \right] \times 10 + 50$	$T = \left[ \frac{(RawScore - 2.01)}{1.44} \right] \times 10 + 50$
Only	$T = \left[ \frac{(RawScore - 1.37)}{1.33} \right] \times 10 + 50$	$T = \left[ \frac{(RawScore - 2.05)}{1.43} \right] \times 10 + 50$

demonstrated a very high reliability at the three week interval- most of the correlations above .90 (Stewart & Campbell, 1998). At the eight week interval the correlation was still strong but not as high, ranging from .80 to .94. These correlations strongly suggest that the participant's responses were consistent over the three and eight week intervals.

The Goldberg IPIP (International Personality Item Pool) Big Five fifty-item descriptive traits inventory, which incorporates most phenotypic personality attributes, is a short, concise, measure that is successful in highlighting the five personality characteristics of Extroversion, Agreeableness, Intellect, Conscientiousness and Emotional Stability.

A study by Guenole & Chernyshenko (2005) looked at the suitability of Goldberg's Big Five IPIP personality markers for dimensionality, bias and criterion validity, their conclusions were that 1) the dimensionality was consistent across New Zealand as it is in the United States on general measure of the Big Five factors, 2) no significant gender bias, 3) observed strong support for criterion validity of the Big Five markers in New Zealand (Guenole & Chernyshenko, 2005). This research suggests that the measure can be generalized and lends support for the construct of the model.

#### Hypothesis

The PBOI will show the relationship between actual birth order and perceived birth order. The research indicates that actual birth order and the psychological birth order have a positive link (Campbell, White & Stewart, 1991). Once the psychological birth order of the subjects has been established, we will then take the data from the Goldberg inventory and relate it to their birth order position. The hypotheses are;



- There will be a significant relationship between actual birth order and psychological birth order.
- There will be a positive relationship between the First Born and Only birth positions and the personality markers for Conscientiousness and Intellect.
- There will be a negative relationship between First Born and Only birth positions and the personality marker for Emotional Stability.
- There will be a positive relationship between the Youngest birth position and the personality marker Extraversion.
- There will be a positive relationship between the Middle birth position and the personality marker for agreeableness.

## CHAPTER 4 – ANALYSIS OF RESULTS

### Hypothesis

- There will be a significant relationship between actual birth order and psychological birth order.
- There will be a positive relationship between the First Born and Only birth positions and the personality markers for Conscientiousness and Intellect.
- There will be a negative relationship between First Born and Only birth positions and the personality marker for Emotional Stability.
- There will be a positive relationship between the Youngest birth position and the personality marker Extraversion.
- There will be a positive relationship between the Middle birth position and the personality marker for agreeableness.

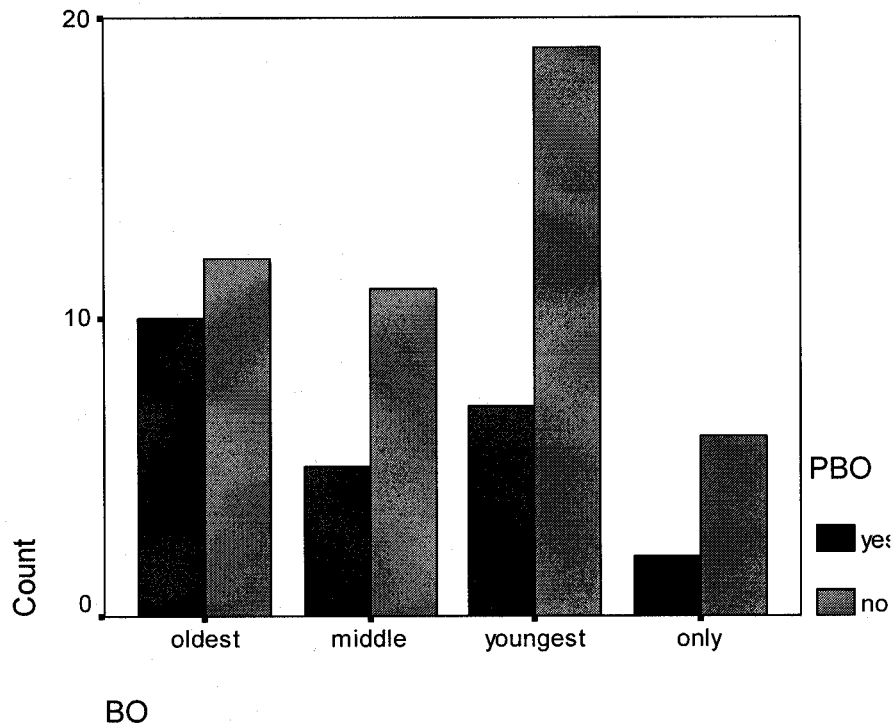
### Interpretation of Results

In reference to the first hypothesis the results were non significant at .529 with the Pearson Chi Square with a value of 2.27 and df of 3. In this study, the data did not support the hypothesis that there would be a significant relationship between the subject's actual birth order and the psychological birth order as described by Adler (1927).

Table 4.1 Pearson Chi-Square

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.217(a)	3	.529
Likelihood Ratio	2.180	3	.536
Linear-by-Linear Association	1.914	1	.167
N of Valid Cases	72		

Table 4.2 Psychological Birth Order



The data was collapsed for gender and the subjects distribution for the four birth order categories were Oldest - N= 22, Middle – N= 16, Youngest- N= 26 and Only- N=8.

With respect to the second hypothesis, descriptive statistics showed that the data was not consistent with the hypothesis which was looking for significance between First Borns and Only children and the personality traits Conscientiousness and Intellect.

Table 4.3 First Born/Only Child and Conscientiousness/Intellect

		Extraver	Agreeabl	Conscien	Emo Stab	Intellect
N	Valid	22	22	22	22	22
	Missing	0	0	0	0	0
Mean		51.6450	52.8582	51.6673	48.8336	48.9168
Median		53.6800	53.6500	52.2200	50.6750	48.8450
Std. Deviation		11.26646	7.96079	9.61993	9.43561	9.96288
Variance		126.933	63.374	92.543	89.031	99.259

For the third hypothesis, there was no relationship, positive or negative, between the First Born and Only and the trait of Emotional stability.

Table 4.4 First Born/Only Child and Emotional Stability

		Extraver	Agreeabl	Conscien	Emo Stab	Intellect
N	Valid	16	16	16	16	16
	Missing	0	0	0	0	0
Mean		48.3063	49.6675	52.4150	51.1200	54.3613
Median		51.8650	51.7200	55.3900	51.3850	54.4600
Std. Deviation		9.46182	11.7846	10.2913	11.90230	9.02282
Variance		89.526	138.878	105.913	141.665	81.411

Table 4.5 shows that hypothesis number four was also non significant for a relationship between the Youngest birth position and personality trait of Extraversion.

Table 4.5 Youngest Child and Extraversion

		Extraver	Agreeabl	Conscien	Emo Stab	Intellect
N	Valid	26	26	26	26	26
	Missing	0	0	0	0	0
Mean		51.2450	47.4119	49.3350	51.5538	47.3004
Median		48.2300	48.8250	47.2000	49.9600	49.6450
Std. Deviation		10.1252	10.6909	9.98102	9.22937	10.8720
Variance		102.520	114.297	99.621	85.181	118.202

The last hypothesis was that a positive relationship would be found between the personality marker Agreeableness and the Middle birth position and this was also found to be non significant using descriptive statistics.

Table 4.6 Middle Child and Agreeableness

		Extraver	Agreeabl	Conscien	Emo Stab	Intellect
N	Valid	8	8	8	8	8
	Missing	0	0	0	0	0
Mean		48.1050	53.7375	42.6388	45.8463	53.8600
Median		52.4700	50.7550	40.9100	46.3850	52.8550
Std. Deviation		10.5454	9.18287	8.28386	10.12814	7.55086
Variance		111.206	84.325	68.622	102.579	57.015

Although the results were non significant across the five hypotheses, the analysis of the data had some informative results and some trends did emerge that may be considered for more intense area of study.

These trends were seen when the data was broken down by gender and Birth order position. When looking at males in the oldest category and comparing to female/Oldest, the data suggests that the Oldest/females show stronger numbers in the traits of Extraversion, Emotional stability and Intellect than males.

Males/Middle scored higher than female/middles in Emotional Stability but on Agreeableness the findings were that females scored higher. This trend shows some support for the fourth hypothesis which suggested a link between the middle position and Agreeableness. Are women in the Middle birth position more likely to play the mediator role and are they more likely to negotiate?

The last trend to be seen was in the Youngest category were the female/Youngest had higher scores in Conscientiousness than the male/Youngest group. There were no Only/males in the sample to compare to Only/females to see any trends emerge.

## Summary

This study examined the relationship between birth order and personality traits using a personality survey. We also examined the relationship between psychological birth order and actual birth order. The sample consisted of 72 undergraduates students at Rowan University. Based on the limited variation in scores on the five personality descriptions, the results indicate that birth order is not a contributing factor for personality traits. The results of the psychological birth order survey illustrate that actual birth order and psychological birth order were not positively correlated.

## CHAPTER 5 – SUMMARY AND CONCLUSIONS

The findings of this research are not unexpected. In looking at other research in this area, it can be seen that significance is not always found, but it still stimulates conversation in the area of birth order. We can see the perceived effects of birth position in our friends and families and we ascribe certain characteristics to them based on their position, but is this because of their behavior or is it because of our idea of who they should be. Is research on birth order outdated because the family is now defined not just with two parents and kids but with single parents, blended families and sometimes grandparents stepping in as parents?

In looking back at the research, even though this study did not find significance, the construct of psychological birth order (Campbell, White & Stewart, 1991) is a valid one and the PBOI is a reliable measure. In their research, Campbell used large samples, over 500 participants, to test their hypothesis. Larger sample sizes are more reliable and can be generalized to the population. The sample in this research was small and mostly female, which may be one reason why there was no significance in the data. It is not believed that it shows a true reflection of the measure.

Looking at the rest of the data in regards to personality traits, we saw that there was really no indication that there is a strong relationship between birth order and the personality traits of Extraversion, Agreeableness, Emotional Stability, Conscientiousness and Intellect. The measure used to test the hypothesis was a self report tool and this

method may not have been the correct measure to use to confirm the birth order, personality trait connection. The traits that we assign to different birth positions may be what we perceive in others but not in ourselves. The research by Nyman (2001) and Paulhus, Trapnell and Chen, (1999), asked the participants to rate the other siblings in the family and who portrayed certain traits, such as high achiever and rebel. Their research showed a positive relationship between these traits and the birth position that is been described with those characteristics. These results suggest that there is an effect of birth order on personality and becomes apparent when viewed by others not by ourselves.

In reference to this studies third hypothesis, the findings were not in line with the findings from Croake & Olson (1977), whose research found that Oldest and Youngest were more likely to have maladjustments than other birth position. This study was looking for this relationship but found none.

The current study and Farley's research (1975), which looked at birth order and the personality traits of extroversion-introversion and neuroticism, had similar findings; there were very little variations in scores for either personality dimension among the participants. As in all research, no positive findings does not mean that no relationship exist, it means that more research needs to be done or that we need to look at a different way to try to show the correlation.

#### Limitations

As previously mentioned sample size and type of measure may have played a role in limited the study effectiveness. Seventy two is a relatively small sample and should not the findings should not be generalized to the larger population. The two surveys' used



are of themselves good measures but may not have been the best tool for this study.

A mostly female participant is another limitation of this study. Why such a large number of female participants? The most likely answer is that the undergraduate classes that were surveyed were in the Psychology department of the University. The classes in this field are more dominantly attended by women than men. If we chose to use participants in the Engineering or Science departments we would have had a larger number of male participants. A larger male population may have made the results more significant for some of the hypothesis particularly the ones predicted for the Oldest position.

Another limitation in the research was that we did not look at other variables that could have impacted the environment in which the participant was raised. Some of these factors are the spacing between the siblings, the sex of the siblings, is the family a blended family where two families are joined and raised together and single parent homes. These environmental factors can and do play a role in influencing who we become. The research did look at adoption, rearing order and personality development that showed a very weak link between them (Beer & Horn, 2000), showing that the environment that the child is raised in can have an influence on certain traits.

Having only undergraduates in the study may also be a limitation. The college population may have less diversity than in the world outside the campus. Participants that have experienced more outside the dorms may be able to see the influences of the family and patterns of behavior more so than more sheltered students.

## Future Research

In looking to do future research on the concept of birth order, this researcher would have to agree with Stewart & Stewart (1995) and the trend that is study birth order in a more qualitative way. Breaking down the types of families that the siblings are involved in such as a blended families or adoption where the variable of position of rearing would be the contributing factor. The research may want to look at the influence of the interaction between the spacing of the siblings and their sexes. Does the first Oldest male have different traits than the first Oldest female? Is the Youngest boy seen differently than the Youngest girl?

Another way to look at this issue is from the parental point of view. This research used self-report measures. Perhaps a survey of the parents regarding their children and what personality traits they attach to them could be compared to a self report measure of the children and how they see themselves. As mentioned earlier, a view from the siblings could also be informative.

A more specific breakdown of participants could lead us to more direct information regarding birth or and personality. A study could be designed that singles out a birth position and then collects data to see what personality traits are significant among the group. This could be done for each position in separate measures. With this research we may be able to get a clear picture of what role, in general, each position takes on.

The most intriguing aspect of this kind of research would be how it could be applied to learning. If we could design research that could match up birth order and

general traits of each position, we could perhaps design learning tools based on the specific strengths of birth order. Research could be done within the classroom to see if when the teacher knows the student's birth order, they could design some learning activities based on these strengths and then compared tests results to a control group not using any directed learning.

Although the data collected in this study did not support the hypothesis, insight and information was gained by the design and implementation of the research. This researcher believes that the characteristics of birth order can be seen in individuals raised in certain positions, but in order to see the trends the sample must be large. The traits are subtle and need a large participation to bring them out. The surveys used were direct and easy to complete, making participation more likely. The research created a lot of conversation and speculation and more investigations into both psychological birth order and personality traits and birth order should be explored.

## REFERENCES

- Adler, A. (1927). *The Practice and Theory of Individual Psychology*. New York: Hardcourt Brace.
- Adler, A. (1927). *Understanding Human Nature*. Garden City, NY:Garden City Publishers.
- Andeweg, R.B., Van Den Berg, S.B. (2003). Linking birth order to political leadership: The impact of parents or sibling interaction? *Political Psychology*, 24, (3), 605-623. Retrieved October 29, 2005 from EBSCOhost.
- Ansbacher, H.L., Ansbacher, R.R.(1956). *The Individual Psychology of Alfred Adler*. New York: Harper Torchbooks.
- Beer, J.M., Horn, J.M. (2000). The influence of rearing order on personality development within two adopted cohorts. *Journal of Personality*, 68, (4), 789-819. Retrieved July 8, 2005 from EBSCOhost.
- Bohmer, P., Sitton, S. (1993). The influence of birth order and family size on notable american women's selection of careers. *Psychological Record*, 43, (3), 375-381. Retrieved October 20, 2005 fromEBSCOhost.
- Campbell, L., White, J. Stewart, A. (1991). The relationship of psychological birth order to actual birth order. *Individual Psychology*, 47, (1), 380-391. Retrieved September 13, 2005 from EBSCOhost.
- Corey, G. (2005). *Theory and Practice of Counseling and Psychotherapy*. Belmont, CA: Brooks/Cole.
- Croake, J.W., Olson, T.D. (1977). Family constellation and personality. *Journal of*

- Individual Psychology*. 33, (1), 9-17. Retrieved October 20, 2005 from EBSCOhost.
- Eckstein, D. (2000). Empirical studies indicating significant birth order related personality differences. *The Journal of Individual Psychology*, 56, (4), 481-494. Retrieved October 29, 2005 from EBSCOhost.
- Ernst, C., Angst J., (1983). *Birth Order: It's Influence on Personality*. Berlin:Springer.
- Farley, F.H. (1975). Birth order and a two dimensional assessment of personality. *Journal of Personality Assessment*, 39, (2), 151-153. Retrieved September 13, 2005 from EBSCOhost.
- Gfroerer, K.P., Gfroerer, C.A., Curlette, W.L., White, J., Kern, R.M. (2003). Psychological birth order and the BASIS-A inventory. *The Journal of Individual Psychology*, 59, (1), 30-41. Retrieved October 20, 2005 from EBSCOhost.
- Goldberg, L.R., (1999). A broad bandwidth, public domain, personality inventory measuring the lower level facets of several five-factor models. In I.Mervielde, I. Deary, F.Fruyt, & F. Ostendorf (Eds.), *Personality Psychology in Europe, Vol. 7*. The Netherlands: Tilburg University Press.
- Guenole, N., Chernyshenko, O. (2005). The suitability of Goldberg's big five IPIP personality markers in New Zealand: A dimensionality, bias and criterion validity evaluation. *New Zealand Journal of Psychology*. 34, (2), 86-95. Retrieved November 30, 2005 from EBSCOhost.
- Harris, J.R. (2000). Context specific learning, personality and birth order. *Current Directions in Psychological Science*, 19, (5), 174-178. Retrieved July 8, 2005

from EBSCOhost.

Harris, K.A., Morrow, K.B. (1992). Differential effects of birth order and gender on perceptions of responsibility and dominance. *Individual Psychology*, 48, (1), 109-118. Retrieved October 29, 2005 from EBSCOhost.

Howarth, E. (1980). Birth order, family structure and personality variables. *Journal of Personality Assessments*, 44, (3), 299-301. Retrieved September 13, 2005 from EBSCOhost.

Jefferson, Jr, T., Herbst, J.H., McCrae, R.R. (1998). Associations between birth order personality traits: Evidence from self-reports and observer ratings. *Journal of Research in Personality*, 32, 498-509. Retrieved November 2, 2005 from EBSCOhost.

Leman, K. (1998). *The New Birth Order Book: Why You Are The Way you are*. Grand Rapids, MI: F.H. Revell.

Morales, C.A. (1994). Birth order theory: A case study for cooperative learning. *Journal of Instructional Psychology*, 21, (3), 246-250. Retrieved November 2, 2005 from EBSCOhost.

Nyman, L. (1994). The identification of birth order personality attributes. *The Journal of Psychology*. 129, (1), 51-59. Retrieved October 20, 2005 from EBSCOhost.

Nelson, E.S., Harris, M.A. (1995). The relationships between birth order and need affiliation and group orientation. *Individual Psychology*, 51, (3), 282-292. Retrieved October 20, 2005 from EBSCOhost.

Park, P.L. (1995) Birth order blues. *Essence*. 26, (7), 136-138. Retrieved October 20,

2005 from EBSCOhost.

Paulhus, D.L., Trapnell, P.D., Chen, D. (1999). Birth order effects on personality and achievement within families. *Psychological Science*, 10, (6), 482-488. Retrieved July 27, 2005 from EBSCOhost.

Phillips, A.S., Phillips, C.R. (1994). Birth order and achievement attributes. *Individual Psychology*. 50,(1),119-124. Retrieved July 8, 2005 from EBSCOhost.

Phillips,A.S.,Phillips,C.R.(2000).Birth order differences in self attributes for achievement. *Journal of Individual Psychology*, 56, (4), 471-481. Retrieved July 8, 2005 from EBSCOhost.

Rodgers, J.L. (2001). What causes birth order intelligence patterns? *American Psychologist*. 56, (6/7) 505-510. Retrieved October 29, 2005 from EBSCOhost.

Romeo, F.F. (1994). A child's birth order: Educational implications. *Journal of Instructional Psychology*, 21, (2), 155-161. Retrieved November 2, 2005 from EBSCOhost.

Salmon, C. (2002). Birth order and relationships: Family, friends and sexual partners. *Human Nature*, 14, (1), 73-88. Retrieved July 8, 2005 from EBSCOhost.

Seff, M.A., Gecas,V., Frey, J.H. (1992). Birth order, self-concept, and participation in dangerous sports. *The Journal of Psychology*, 127, (2), 221-232. Retrieved October 29, 2005 from EBSCOhost.

Shulman, B.H., Mosak, H.H. (1977). Birth order and ordinal position: Two Adlerian Views. *Journal of Individual Psychology*, 33, (1), 114-121. Retrived November 2, 2005 from EBSCOhost.

- Sohl, A.S., Yusuff, K.B. (1991). Birth order and participation in high and low dangerous Sports among selected Nigerian athletes. *Journal of Asian and African Studies*, 26, 3-4, 276-278. Retrieved October 20, 2005 from EBSCOhost.
- Stewart, A.E. (2004). Can knowledge of client birth order bias clinical judgment? *Journal of Counseling & Development*, 82, 167-176. Retrieved October 20, 2005 from EBSCOhost.
- Stewart, A.E., Campbell, L.F. (1998). Validity and reliability of the White-Campbell psychological birth order inventory. *The Journal of Individual Psychology*, 54, (1), 41-60. Retrieved September 13, 2005 from EBSCOhost.
- Stewart, A., Stewart, E., Campbell, L. (2001). The relationship of psychological birth order to the family atmosphere and to personality. *The Journal of Individual Psychology*, 57, (4), 363-387. Retrieved September 13, 2005 from EBSCOhost.
- Stewart, A., Stewart, E. (1995). Trends in birth order research:1976 – 1993. *Individual Psychology*, 51, (1), 21-36. Retrieved September 13, 2005 from EBSCOhost.
- Stryker, S., Stathan, A. (1985). Symbolic interaction and role theory. In M.Snyder and W. Ikes (Eds.), *Handbook of social psychology: vol 2*,(pp. 311-378). New York: Random House.
- Sulloway, F. (1996). *Born to Rebel: Birth Order, Family dynamics, and Creative Lives*. New York: Pantheon.
- Tharpe, I.H.A., Harun, L.M.Hj. (2000). Birth order positions and personality traits. *Universiti Putra Malaysia*, Retrieved October 20, 2005 from ERIC.



- Travis, R., Kohli, V. (1995). The birth order factor: Ordinal position, social strata, and educational achievement. *The Journal of Social Psychology*, 135, (4) 499-507. Retrieved October 20, 2005 from EBSCOhost.
- Watkins, C.E., (1992). Birth order research and Adler's theory: A critical review. *Individual Psychology*, 48, (3), 357-368. Retrieved September 13, 2005 from EBSCOhost.
- White, J., Campbell, L., Stewart, A., Davis, M., Pilkington, L. (1997). The relationship of psychological birth order to career interests. *Individual Psychology*, 53, (1), 89-105. Retrieved July 27, 2005 from EBSCOhost.
- Williams, J.H. (1983). *Psychology of Women*. New York:Norton.
- Zweigenhaft, R.L., Von Ammon, J. (2000). Birth order and civil disobedience: A test of Sulloway's "Born to Rebel" hypothesis. *The Journal of Social Psychology*, 140, (5), 624-627. Retrieved October 20, 2005 from EBSCOhost.

## Appendix

## Appendix

On the following pages, there are phrases describing people's behaviors. Please use the rating scale below to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manor, your responses will be kept in absolute confidence. Please read each statement carefully and then fill in the bubble that corresponds to the number on the scale.

### Response options

- 1: Very Inaccurate
- 2: Moderately Inaccurate
- 3: Neither Inaccurate nor Accurate
- 4: Moderately Accurate
- 5: Very Accurate

Am the life of the party	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>
Feel little concern for others	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>
Am always prepared	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>
Get stressed out easily	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>
Have a rich vocabulary	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>
Don't talk a lot	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>
Am interested in people	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>
Leave my belongings around	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>
Am relaxed most of the time	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>
Have difficulty understanding abstract ideas	1. <input type="radio"/>	2. <input type="radio"/>	3. <input type="radio"/>	4. <input type="radio"/>	5. <input type="radio"/>

- Feel comfortable around people 1.  2.  3.  4.  5.
- Insult people 1.  2.  3.  4.  5.
- Pay attention to details 1.  2.  3.  4.  5.
- Worry about things 1.  2.  3.  4.  5.
- Have a vivid imagination 1.  2.  3.  4.  5.
- Keep in the background 1.  2.  3.  4.  5.
- Sympathize with others' feelings 1.  2.  3.  4.  5.
- Make a mess of things 1.  2.  3.  4.  5.
- Seldom feel blue 1.  2.  3.  4.  5.
- Am not interested in abstract ideas 1.  2.  3.  4.  5.
- Start conversations 1.  2.  3.  4.  5.
- Am not interested in other people's problems 1.  2.  3.  4.  5.
- Get chores done right away 1.  2.  3.  4.  5.
- Am easily disturbed 1.  2.  3.  4.  5.
- Have excellent ideas 1.  2.  3.  4.  5.
- Have little to say 1.  2.  3.  4.  5.
- Have a soft heart 1.  2.  3.  4.  5.
- Often forget to put things back in their proper place 1.  2.  3.  4.  5.

- Get upset easily 1.  2.  3.  4.  5.
- Do not have a good imagination 1.  2.  3.  4.  5.
- Talk a lot to different people at parties 1.  2.  3.  4.  5.
- Am not really interested in others 1.  2.  3.  4.  5.
- Like order 1.  2.  3.  4.  5.
- Change my mood a lot 1.  2.  3.  4.  5.
- Am quick to understand things 1.  2.  3.  4.  5.
- Don't like to draw attention to myself 1.  2.  3.  4.  5.
- Take time out for others 1.  2.  3.  4.  5.
- Shirk my duties 1.  2.  3.  4.  5.
- Have frequent mood swings 1.  2.  3.  4.  5.
- Use difficult words 1.  2.  3.  4.  5.
- Don't mind being the center of attention 1.  2.  3.  4.  5.
- Feel others' emotions 1.  2.  3.  4.  5.
- Follow a schedule 1.  2.  3.  4.  5.
- Get irritated easily 1.  2.  3.  4.  5.
- Spend time reflecting on things 1.  2.  3.  4.  5.
- Am quite around strangers 1.  2.  3.  4.  5.

Make people feel at ease

1.  2.  3.  4.  5.

Am exacting in my work

1.  2.  3.  4.  5.

Often feel blue

1.  2.  3.  4.  5.

Am full of ideas

1.  2.  3.  4.  5.

