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**THE RELATIONSHIP BETWEEN LOCUS OF CONTROL AND BIRTH  
ORDER IN COLLEGE STUDENTS ACADEMIC SUCCESS**

by  
Shannara J. Williams

A Thesis

Submitted to the  
Department of Psychology  
College of Education  
In partial fulfillment of the requirement  
For the degree of  
Master of Arts  
at  
Rowan University  
April 20, 2011

Thesis Chair: Roberta Dihoff, Ph.D and John Klanderman, Ph.D

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## **Dedication**

*All people who have siblings <3 Rock, Bri, Kev, & Zeek*

## **Acknowledgements**

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## **Abstract**

Shannara J. Williams

### **THE RELATIONSHIP BETWEEN LOCUS OF CONTROL AND BIRTH ORDER IN COLLEGE STUDENTS**

2011

Roberta Dihoff, Ph.D & John Klanderman, Ph.D  
Master of Education in School Psychology

The purpose of this investigation was to determine the relationship between locus of control and birth order. Does your birth position predict your locus of control? Also, if birth order has an effect on the academic achievement of college students (n=54). A few subjects were disqualified from the study based on the fact that they were the only child. A demographics survey was designed to determine the academic success based on grade point average. The Rotter's Locus of Control survey was used to determine the locus of control of the college students. Neither hypothesis investigated yielded the predicted results. This could be due to the small sample recruited by each birth position. Research procedures and future goals are discussed.

## Table of Contents

Acknowledgements	iv.
Abstract	v.
List of Tables	viii.
Chapter 1: Introduction	1
1.1 Statement of Purpose	1
1.2 Hypothesis	2
1.3 Theories	2
1.4 Definitions	5
1.5 Assumptions and Limitations	6
1.6 Summary	6
Chapter 2: Literature Review	7
2.1 Locus of Control, Birth Order, and Academic Achievement	7
2.2 Birth Order and Personality	8
2.3 Birth order and Academic Success	11
2.4 Birth Order and Locus of Control	15
2.5 Locus of Control	16
2.6 Locus of Control and Academics	17
2.7 Internal versus External Locus of Control	18
2.8 Internal/external Locus of Control and Academics	21

## Continued Table of Contents

2.9 Conclusion	23
Chapter 3: Methodology	25
3.1 Introduction	25
3.2 Participants	25
3.3 Variables	26
3.4 Procedures	26
3.5 Types of Analysis	27
Chapter 4: Findings	28
Chapter 5: Summary/Discussion/Future Research	32
5.1 Summary	32
5.2 Discussion	32
5.3 Conclusions and Suggestions for Future Research	34
List of References	36
Appendix A      Demographics Survey	41
Appendix B      Rotter's Locus of Control Scale	42



## **List of Tables**

<b>Table</b>	<b>Page</b>
Table 1 Grade Point Average & Birth Order One-Way ANOVA	29
Table 2 Birth Order and Grade Point Average Descriptives	29
Table 3 Birth Order and Locus of Control Comparison	31
Table 4 Locus of Control and Grade Point Average Descriptives	31
Table 5 Locus of control and Grade Point Average	31

## **CHAPTER 1**

### **Introduction**

This study is important in order to provide parents and educators with a greater understanding of birth order and the influence birth order has on a child's school performance. Studies indicated that the eldest child is the most responsible child out of all the siblings. The first born children also tend to excel in their academic performance in comparison to the younger siblings. The goal for this study was to contribute to the research field by providing evidence that birth order does in fact affect a child's academic success. Also, this study investigated whether there was a significant relationship between locus of control and birth order among college students. There have not been many studies done in which they compare the locus of control of a child and their academic success. The following study took a glimpse at those two variables and their comparison.

#### **1.1 Statement of Purpose**

The purpose of this study was to investigate the relationship between locus of control and if birth order determines whether a child will display an internalized or externalized locus of control. Also investigated were birth order and its academic relationship to the success of college students. Research states

that the eldest child of three or more siblings will have an internalized locus of control. The youngest child will have an external locus of control. Thus, the eldest child may perform better in school than the youngest child. Also, the eldest child will have an internalized locus of control while the younger siblings will have an externalized locus of control.

## **1.2 Hypothesis**

There were two hypotheses that were addressed in this study. First, the eldest child of three or more siblings will have higher academic performance than the youngest sibling(s). Second, the eldest child will have an internalized locus of control while the younger sibling will have an externalized locus of control.

## **1.3 Theories**

According to social learning theory, locus of control is a “generalized expectancy” that pertains to the perception of causal relationships between behaviors and reinforcing experiences (Lefcourt, 2000). Julian Rotter was the psychologist who proposed the social learning theory and from that he created a way to measure locus of control. In 1966 Rotter published the Internal-External Locus of Control Scale (Encyclopedia.com, 2008). Generalized locus of control expectancies have been used to explain the different ways in which people

respond to threats and challenges (Lefcourt, 2000). This particular study will discuss the relationship between locus of control (internal vs. external) and academic success according to birth order. Each birth position is described below.

### First Born Child

Birth order theorists believe that the birth position, also known as birth order, in which a child is born, will determine their personality and success both in academia and life. First-born children are typically the most favored child within the home (Morales, 1994). Because Parents entrust the eldest child with power and responsibility therefore, they possess higher levels of self esteem and feel more confident (Morales, 1994). The theorist discussed mostly throughout this research is Alfred Adler. He left behind a theory of personality and counseling that was still in development (Peluso, 2008). Many people associate birth order theory to Alfred Adler.

### The Middle Child

The middle children possess qualities which include; relaxed personality, even temper, seriousness, and even a sense of humor when compared to other siblings. They are less driven by parents. The middle child develops these qualities to obtain attention. Middle children also find themselves in competition

with their siblings. As a result of the above qualities and other associated behaviors middle children are more at risk to develop low self-esteem and feelings of inferiority (Morales, 1994)

### The Youngest Child

The youngest child is most likely known also as the baby of the bunch. The characteristics of the youngest child are: outgoing, sociable, friendly, less demanding and less jealous. They develop pro-social skills such as: accommodation, tolerance and power of negotiation. These traits allow them to become more popular as they are able to relate well to peers. Being the youngest child has its drawbacks. If younger children are too pampered, they may feel weak and develop feelings of inferiority. They are often not entrusted with responsibility. These children develop the resilient attitude. They think and feel like: "I can do it all!" Others may lack self-confidence, seek situations free of competition, or shy away from tasks for fear of failure (Morales, 1994)

The two birth order positions that are addressed in this study are the first and last. The middle child will be examined based on the age of the child (ren). Some theorists believe that if there is a significant gap between the first born and middle child, the middle child tends to take the position and characteristics of the first born child.

## 1.4 Definitions

Locus of Control is related to what a person believes regarding their current or future experiences. It also deals with their responding actions in relation to their personal belief of control.

Internal locus of control is when someone believes that they control their own experiences. An example would be a child loses a toy and they feel they lost it because of their carelessness (Carlson, Watts, & Maniacci, 2006).

External locus of control is when a person believes that they are not in control of their own experiences. They attribute their experiences to good fortune, fate, or an outside factor. An example would be a child loses a toy and feels they lost it because others did something wrong (Carlson, Watts, & Maniacci, 2006).

Birth Order: Ordinal position refers to the actual order of birth of the siblings. Psychological position refers to the role the child adopts in his or her interactions with others.

Grade point average (g.p.a) is represented in this study as a determining factor of academic success.

## **1.5 Assumptions and Limitations**

Students who signed up for the study had to show up and turn the surveys in on time. The participants had to answer the survey questions to the best of their knowledge and give accurate information. The students also had to provide information about their siblings and it is assumed that they will answer the questions to the best of their knowledge.

The study was limited to Rowan University college students within the psychology pool. The students that participated were required to have one or more siblings. Students who were the only child were not used in the interpretation of the data.

## **1.6 Summary**

The subsequent chapters discuss research reviews and their comparison to this study. All the reviews selected are related to this study and are used for the purpose of background information for the researcher. After the reviews, the design of the experiment will be discussed in detail followed by a discussion of the results of this study. The information provided should be utilized to help educators and families in knowing what each birth order can possibly mean about the way their child functions socially, mentally, and academically.

## **CHAPTER 2**

### **Literature Review**

There were several articles that discussed birth order, locus of control (internal vs. external), and academic success. Some articles discussed the similarities and differences and others addressed each topic separately. Very few articles related all three variables. Most articles studied birth order and its relationship to locus of control. The following information was reviewed in order to discuss possible relationships amongst the three variables.

#### **2.1 Locus of Control, Birth Order, and Academic Achievement**

There were two studies that were reviewed that were very similar to each other. One tested elementary children and one tested high school children. In a study called Locus of Control and Birth Order in School Children, the researcher was testing relationships between birth order and locus of control on elementary children. This study was examined and certain aspects of this study were considered in the study which follows this literature review. The method for this study included using an intellectual achievement questionnaire. The findings were not what the researcher expected to find. There was some support found that later born children tended to be less dependent than first or only children on the basis of a teacher rating scale. First born children were not found to be



significantly more responsible (Newhouse, 1974). This finding was contradictory to the findings of LeMay (1970). He reviewed the work of a researcher that tested if firstborn females had higher Scholastic Aptitude Test (SAT) than their later born siblings. This was measured by reviewing the records of female freshman college students. Their SAT scores and GPA's were compared to their siblings. The hypothesis of superiority of the firstborns on SAT scores was supported (LeMay, 1970). The other hypothesis about overall academic success was not supported based on the comparison data of GPA's of first born and later born children. This information is important when thinking of future research because it shows that there is a link between some of the variables.

## **2.2 Birth Order and Personality**

According to Alfred Adler, the order in which someone is born among their siblings determines their personality. The formative influence of birth order on a person's core personality is one of Adler's most significant contributions to psychology (Eckstein, Winter 2000). In order to understand a person's personality involves interpreting means to disclose and make understandable the parts of an individual, meaningless in themselves, that is to interpret a symptom in the light of the whole (Murphy & Jensen, 2005). Many studies found birth order positions to accurately describe personality.

Daniel Eckstein compares data from 151 empirically-based articles on significantly significant birth order differences (Empirical Studies Indicating Significant Birth-Order Related Personality Differences, 2000). In this article he found that the characteristic label to each ordinal birth position is accurate. The first born children from the compared studies all had the following characteristics: high achievers, highest IQ, greatest academic success/fewest academic problems, high motivation/high need for achievement, overrepresented among learned groups, most affiliative under stress, mature behavior, and several other agreeing characteristics (Eckstein, Winter 2000). The middle children were found to have the fewest “acting out” problems, sociable, greatest feelings of not belonging, successful in team sports, relates well to older and younger people, and competes in areas not attempted by oldest (Eckstein, Winter 2000). The youngest children were an overrepresentation of psychiatric disorders if from small families, empathetic, most likely to be an alcoholic, act as single child if there is a seven year difference, most popular, highest representation among writers, highest self esteem, lowest IQ, spoiled, and a few other characteristics (Eckstein, Winter 2000). All this information is important because it was compiled information from 151 studies. A lot of the research found relates a lot to Adler’s birth order theory in reference to the siblings birth order and personality.

There are always factors that should be also considered when researching this topic. Some research stated that there are a lot of studies that forget to include sex and ethnicity when determining if there is a relationship between birth order and personality. Edward Watkins Jr.'s research stated that first born children meet all the criteria as stated by Adler (Watkins Jr, 1992). For example, first born children are dominant and responsible. He was one who found that birth order effects vary as a result of ethnicity. The sex of an individual, combined with birth order, can change the level of academic success and locus of control. Therefore, any study that wants to use birth order as a variable should also include sex and ethnicity because the results can change based on those two rarely considered variables.

There was only one article that was found that did incorporate sex as a variable in addition to birth order and power beliefs. The article, "Sex, Birth, and Beliefs about Personal Power" (Marks, 1972), discussed how family variables (the way they treat their children based on sex) can be a contributing factor to a child's personality. Birth order alone does not determine a child's character traits. Parents of female only children were overly protective and set rigid standards (Marks, 1972). Parents of male only children may encourage exploration and mastery of the environment (Marks, 1972). When parents choose to favor the male child most out of all the children, that can change the child's personality.

Research on ordinal position and dependency indicating that types of dependency tolerated by parents differ for male and female children lends partial support to these notions (Marks, 1972). The notions that based on how parents interact with their children based on sex may effect their ordinal position.

### **2.3 Birth Order and Academic Success**

Birth order can possibly predict the academic success of each sibling. The birth order theory states that a person's position in their family does seem to affect their behavior both at home and at school (Dailey, 2009). According to a few studies and Adler the oldest child is the most likely to excell academically. There are few studies that have also used sex to compare first born children and their academic success rate in comparison to their later born siblings. Adler believed that the demands of each birth order position typically, but not inevitably, structure the way the parents treat the child and help define the child's resulting personality (Parker, Winter 1998). Therefore birth order alone does not determine a child's behavior. Adler has said that an individual's given place in the family does not always correspond with how the person psychologically interprets their place (Dailey, 2009). Some first born children

may have other factors or even a disability that would make them psychologically the last born child.

There were several studies done that compared the academic achievement level and its relationship among college students. The studies reviewed had very similar data in that the first born child achieved higher academic success than their siblings. There was one study done that yielded different results. The study involved 40 students that completed surveys in reference to their birth order and academic motivation (Dailey, 2009). There wasn't any statistically significant data that stated first borns achieve better academically than their later born siblings. The reason the researcher did not find any results that produced the same outcome of data was due to the number of people represented in their sample. The researcher stated that birth order effects are so small that many more participants would be needed to find a significant effect in this study (Dailey, 2009).

As for the other similar studies, the findings were closely related in nature. Many researchers thought that first born students were over represented in the college population. Overwhelming evidence shows that first borns of both sexes attend college in greater number than later born peers (Bradley, 1968). This is said to happen because first born children feel they have to fight to hold onto their place of achievement in the eyes of others. Adler once wrote that the first

born is a “power hungry conservative” (Altus, 1965). Also, researchers found that first borns in college may be verbally more able than later borns (Altus, 1965). Later born siblings seemed to be good at math.

A few studies showed a comparison between birth order and academic achievement. One study searched for a link between birth order and college matriculation (Bradley, 1968). Bradley (1968) found that first borns were greatly outnumbering later borns in college. While explanations of this phenomenon are tenuous, substantial evidence exists indicating that early personality factors favoring firstborns are substantiated and extended while in school (Bradley, 1968). Since first borns are favored their achievement motivation causes them to want to be excel academically.

The goal of another study was to assess the roles of birth order and family size in the incidence of giftedness and domains of academic ability (Parker, Winter 1998). They wanted to see if along with birth order, family treatment, and environment, also caused the first born to be academically better than their later born siblings. This study had a birth order category for only born children. This means that there was a category for children without siblings, only child. It was stated that this can be a problem because only children are simultaneously first and last born (Falbo, 1981). This study had a few problems that could have been the reason why there were some issues in the resulting data. There was not an

even sample representaiton. About 85% of participants where Caucasian and 10% were Asian. Also, the selected participants all came from a gifted school. Findings were that first borns were most likely to be verbally talented and later borns were more likely to be mathematically talented (Parker, Winter 1998). Relationship between birth order and type of giftedness was low. Birth order explained a minimal 2% to 3% of the variene in types of scores in a gifted sample (Parker, Winter 1998).

A similar study hypothesized that entering first born college students should earn higher mean scores on the Mathematics Aptitude Test and the Verbal Aptitude test of college entrance examination board than would later borns (Altus, 1965). The researcher also wanted to show that even though first borns are over represented on college campuses, it does not change their academic success in comparison to their sibling. It was hypothesized that first born college students should be brighter as well as more numerous than their later born counterpart on the same campus (Altus, 1965). Several years of research was done on the SAT scores and data was measured according to birth order (Altus, 1965). Family size was no bigger than four children. There seemed to be some modicum of evidence that the first born college student is somewhat superior to the later born in verbal aptitude (Altus, 1965). Which would also

suggest that first borns in comparison to their later born siblings are verbally more competent.

## **2.4 Birth Order and Locus of Control**

Many researchers also want to know about the relationship between birth order and locus of control. The only problem was that research relating birth order to locus of control was highly sporadic and the findings were somewhat inconsistent (Eswara, 1978). This was probably due to the fact that many people did not use Rotter's Internal/ External Control Scale. Rotter (1966) developed the Internal/External Control Scale, which measures an individual's perception of locus of control (Beck & Brown, Fall 2003). Researchers believe that the first born child has an internal locus of control and the last born child displays an external locus of control. Studying locus of control is important because having an internal locus of control has been found to positively impact an individual's ability to deal with setbacks (Beck & Brown, Fall 2003). Also those with internal locus of control have been found to have greater mastery tendencies, better problem-solving abilities, and more likelihood of achievement (Beck & Brown, Fall 2003). While individual predictors were not significantly related to locus of control variables, multiple regression analyses showed that birth order (first,



middle, last) and sex together allow successful prediction of the chance variable of locus of control (Fraser & Nystul, 1983).

Most of the results of the studies were similar in conclusion. When sex was a factor there was a study which showed that the last born female sees life events as out of her control (external locus of control) in an unordered world (Fraser & Nystul, 1983). Which is what many researchers find in their birth order studies in relation to locus of control. A significant sex and birth order interaction was found (MacDonald Jr, 1971). When sex is entered into the equation the difference between last born females and males seemed very predictable. Last born females were found to be more spoiled than last born males (at least as indicated by locus of control orientation) (Fraser & Nystul, 1983). This could be due to the fact that parents treat girls and boys differently.

## **2.5 Locus of Control**

Locus of control has been studied greatly in detail over the past several years. It was incorporated in Rotter's social learning theory. Rotter suggested that the probability that one engages in a behavior to satisfy a need rests on the expectation of a specific reinforcement and the value attributed to this reinforcement (Fournier & Jeanrie, 2003). Rotter (1966) described locus of control as follows:

When reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When an individual interprets the event in this way, we have labeled this a belief in *external control* [emphasis added]. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in *internal control*. (Rotter, 1966, p. 1)

Rotter had similar views to other theorists and argued that the locus of control is not a specific psychological characteristic that manifests itself uniformly across situations and time (Fournier & Jeanrie, 2003). Locus of control is important to so many studies because researchers want to know about its relationship with many factors a couple most studied being birth order or academics achievement. Also many researchers want to know specifically which type of control (internal or external) relates to specific birth order positions and level of academic achievement.

## **2.6 Locus of Control and Academics**

Understanding and predicting individual differences in academic achievement has long been a topic of interests to psychologists (Walden & Ramey, 1983). Therefore a lot of research has been done to investigate the relationship of locus of control and academics. Logically if success is positively valued, people who feel more able to control outcomes should exert more effort

(Findley & Cooper, 1983). There were six studies (Walden & Ramey, 1983; Karabenick, 1972; Nord, Connelly, & Daignault, 1974; Parent, Forward, Canter, & Mohling, Interactive effects of Teaching Strategy and Personal Locus of Control on Student Performance and Satisfaction, 1975; Goldman & Keller, 1978; Mooney, Sherman, & Lo Presto, May/June 1991) that looked at locus of control and academic achievement. All the studies but one, (Mooney, Sherman, & Lo Presto, May/June 1991), stated that they found a relationship between locus of control and academic achievement. This information is important to know because this can help both a student and their teachers when dealing with school work. If you know a child's locus of control you can think of ways to work with them in a way that will help them want to succeed academically.

## **2.7 Internal versus External Locus of Control**

Internal and external control are the main types of controls that people want to study as stated previously. In order to measure someones type of control a internal external scale is used. The Internal/External Locus of Control Scale was created by Julian Rotter. It is the most used and cited locus of control scale (Fournier & Jeanrie, 2003). A quick description of the scale is as follows:

This general measure comprises 23 items, and it makes it possible to evaluate people's general control expectancies from a unidimensional viewpoint. Each item has two statements that respectively describe an external and internal locus. People are asked to decide which ones

represent their control expectancies in diverse situations. Six filler items are included to camouflage the goal of the measure and to limit the effect of social desirability. The use of forced-choice items may reduce socially desirable responding. The results of this scale are expressed by a single score that indicates the level of externality (Fournier & Jeanrie, 2003).

Internal versus external control refers to the degree to which persons expect that a reinforcement or outcome of their behavior is contingent on their own behavior or personal characteristics versus the degree to which persons expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable (Rotter J. B., April 1990). Many studies suggest that first born children have an internalized locus of control and that would mean that they are more likely to succeed academically. Whereas, the later born children or last child would have an externalized locus of control and hence not succeed to the same capacity as the first born.

There are set character traits that go along with internal or external locus of control. Which is why internals and externals should (and do) react differently to success and failure (Findley & Cooper, 1983). Externals are viewed as having a negative expectancy for success to come from attempts at personal control, whereas internals have a more positive expectancy (Biondo & MacDonald Jr, 1971). It has been suggested that an external orientation might predispose one to be more sensitive to the reactions or demands of outside agents—especially those in status positions (Biondo & MacDonald Jr, 1971).

Internals seem to exert more control over their lives in part by their knowledge of their environments (Dollinger, 2000).

There are always pros and cons to either internal or external locus of control. An internal control orientation reported by Rotter and others have included greater attempts at self-mastery of the environment and greater striving toward achievement behavior (Saltzer, 1978). Among the possible consequences of a belief in external control may be development of the behavior directed at appeasing or pleasing those who are in control (Saltzer, 1978).

Many studies were done that tested the internal/external locus of control theories. One study, "Locus of Control and the Intention to Lose Weight" (Saltzer, 1978), studied the importance of personal attitudes toward losing weight and the social pressure for weight loss in determining intentions to lose weight was compared for locus of control internals and externals who valued and/or physical appearance highly. The results stated when subjects were identified as internal or external locus of control individuals by the weight locus of control scale, it was found that for internals who highly value health, physical appearance, or both, the personal attitude toward behavior was statistically significant predictor and the dominant component in the behavior intention equation (Saltzer, 1978). This was important because it showed that locus of control effects many different decisions a person may make.

## **2.8 Internal/External Locus of Control and Academics**

According to Rotter (1954), people's perception of the degree of control they have over their life varies on a continuum from internally based to externally based (Bursik & Martin, 2006). Many researchers believe that the first born child is more likely to experience an internal Locus of Control (LOC) while later born children experience an external LOC. This is important to consider when discussing academics. Children who perceive control of reinforcement as external tend to have lower achievement test scores than children who have an internal orientation (Tesiny, Lefkowitz, & Gordon, 1980). It must also be noted that this information is useful because this is helpful information to know in reference to building successful teacher- student relationships. More recent research has shown that it is not just teachers who hold and transmit expectations in teaching situations; students too, develop expectations regarding the situation and may communicate such expectations to the teacher (Feldman, Saletsky, Sullivan, & Theiss).

There were a few studies that were reviewed that gave inconsistent results. A few studies yielded the same results while a couple did not find a relationship between internal/external LOC and academics. The Brandt study found that internals typically have a higher grade point average than externals studies (Brandt, 1975). The Brandt (1975) study investigated the performance of internals

and externals in two reading-rate instruction approaches. The results supported the relative effectiveness of motivated instruction over controlled instruction and non treatment (Brandt, 1975). The results did not support the hypotheses concerning the association of the internal external personality dimension and improvement in reading ability (Brandt, 1975). A study similar to this study was one that involved college students that predicted their own grade point average for a semesters work and it was hypothesized that internal LOC students are more accurate predictors than external LOC students (Wolfe, 1972). After research was done it was found that there was not a relationship that supported that hypothesis.

There were a few studies as stated that did find a relationship. In the Feldman, Saletsky, Sullivan, & Theiss study, results stated that internal subjects' attitudes relevant to the teaching situation and their performance were consistently in accordance with the nature of their expectation about their own future success, whereas the attitudes of externals were in congruent with the expectation (Feldman, Saletsky, Sullivan, & Theiss). Which would mean that internals were more into academics than externals in terms of expectations. Another study was an aptitude-treatment interactions study. It classified 68 subjects as external or internal. Approximately half of the externals (internals) were given a traditional, teacher controlled method of instruction, with the

remaining subjects being involved in a contract for grade plan (Daniels & Stevens, 1976). A strong disordinal interaction was found, with internals performing better under the contract plan and externals performing better under the teacher controlled method (Daniels & Stevens, 1976). Thus, agreeing with previous data stating that internals perform better than externals at many activities. Lastly, in a study by Messer (1972), the results were consistently in the direction of higher grades for subjects who were more internally oriented.

## **2.9 Conclusion**

With all the information that has been discussed it is apparent that there is always going to be data that agrees with a theory or hypotheses and something that goes against it. Which is why there will always be a researcher that reviews information from past and tries to find a way to help people in the future. Each study used similar instruments to test their beliefs against various variables. More recently, a variety of domain—specific locus of control scales have been developed (Bursik & Martin, 2006). One scale that seemed to be very prevalent was Rotters Internal External Locus of Control Scale. Foster and Gade (1973) among others, have observed an association between Rotter's (1966) Internal-External locus of control personality dimension and college grade point average (Brandt, 1975). Which is why the following study will use it as well. It is a very



accurate tool in determining the locus of control a person has. It is important to know this information in order to see if Adler was right in assuming that birth order does in fact determine personality. With accurate statistical data confirming that birth order is related to locus of control and academics it will be a great start at providing teachers the tools needed to help their students effectively. Effective teaching has long been considered instrumental to students' learning and performance (Perry & Penner, 1990). Thus with the proper tools children will be able to succeed no matter what birth position or locus of control.

## **CHAPTER 3**

### **Methodology**

#### **3.1 Introduction**

The following study tested two different hypothesis. First, the eldest child of three or more siblings will have higher academic perform than the youngest sibling(s). Second, the eldest child will have an internalized locus of control while the younger sibling will have an externalized locus of control. These two hypotheses were tested with a questionnaire that asked questions about academics and birth order positioning (See Appendix A). The second survey was the Rotter's Locus of Control Scale and it will measure if the participant has an internalized or externalized locus of control (See Appendix B).

#### **3.2 Participants**

The participants in this study included undergraduate students from Rowan University's psychology pool. There were a total of 60 participants that signed up for the study. Only 54 students surveys were able to be used. Some surveys could not be used because they were the only child or their surveys were not filled our properly.

### **3.3 Variables**

The variables were birth order, locus of control level (external or internal), and academic achievement. These variables were tied together as birth order and locus of control or birth order and academic achievement. Academic achievement was determined by the grade point average of each participant and their siblings.

### **3.4 Procedures**

The procedure consisted of two surveys that participants had to fill out. One survey asked about participants about their birth position, number of siblings they have, their grade point average (g.p.a), and their siblings' g.p.a. This information was used to compare siblings' academic achievement with one another. Higher g.p.a. will be considered more likely to succeed academically.

The other survey was Rotter's Locus of Control. It is a questionnaire with 25 questions that based upon the answer given can determine the level of LOC a participant may have. Data was compared amongst all participants based on their birth order. There was not a comparison amongst siblings, as far as LOC, because they did not get to fill out the surveys. Only the sibling in college was able to fill out all forms.

### **3.5 Types of Analysis**

A one way anova test was used to compare birth order and academic success as well as birth order and locus of control. The one way between subjects ANOVA test was used for investigating the relationship between academic success, gpa, and birth order. The other one way between subjects ANOVA was used for investigating the relationship of locus of control and academic success. Along with those analysis a descriptives test was done to show specific information such as the specific mean gpa with each birth order or locus of control. The last test done was a crosstab analysis. This was done to determine the locus of control for each birth category: first, second, third and fourth borns.

## CHAPTER 4

### Findings

Based on the data analysis neither of the hypothesis was significant. The first hypothesis was that the eldest child of three or more siblings will have the highest academic success, See Table 1. There was not a statistical significance that tied birth order and academic success together. There was a significance of .080 which can lead one to believe that maybe if more subjects were studied it would have given support to the hypothesis. Table 2, shows the number of subjects per each birth order. If each birth order had been balanced out equally the results revealed may have been different. From Table 2, it can be seen that third born children, in some cases the last born, had the highest grade point average (3.35) which would suggest that they are the most academically successful. The first born children had a g.p.a of 3.16, followed by second born children with a g.p.a of 3.0. In that case, the first born child did have higher grades than the person born next.

The second hypothesis was that the eldest child will have an internalized locus of control while younger siblings have an externalized locus of control. The questionnaire from Appendix B was used to determine each of the subject's loci of control. A score over 11 was external; and a score under 11 was internal LOC.

Table 1 Grade Point Average & Birth Order One-Way ANOVA

GradePointAverage					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.000	3	.667	2.392	.080
Within Groups	13.936	50	.279		
Total	15.936	53			

Table 2 Birth Order and Grade Point Average Descriptives

GradePointAverage								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	16	3.1663	.59896	.14974	2.8471	3.4854	1.50	4.00
2.00	24	3.0975	.48761	.09953	2.8916	3.3034	2.00	3.90
3.00	10	3.3520	.42666	.13492	3.0468	3.6572	2.90	4.00
4.00	4	2.5250	.69462	.34731	1.4197	3.6303	1.90	3.50
Total	54	3.1226	.54834	.07462	2.9729	3.2723	1.50	4.00

On Table 3 it can be seen that Internal Locus of Control is represented with 1.00 and External Locus of Control is represented with 2.00. First born children, 11 out of 16, had external locus of control. Second born children, 15 out of 24, had an external locus of control. In contrast, third born children had an internal locus. This information was unexpected after reading all the literature about first born children having an internalized locus of control and later born children with an external locus of control.

Table 4 shows that children that had an internal locus of control had a slightly higher g.p.a 3.17 in comparison to external locus of control children 3.08. The difference is not large enough to state that there is a relationship but it is something that should get more investigation. On table 5, it can be seen that there is not a difference between locus of control and academic success (0.596 significance).

Table 3 Birth Order and Locus of Control Comparison

Count

		LocusOfControl		Total
		1.00*	2.00*	
BirthOrder	1.00	5	11	16
	2.00	9	15	24
	3.00	7	3	10
	4.00	1	3	4
Total		22	32	54

\*The Internal Locus of Control is represented with 1.00 and External Locus of Control with 2.00.

Table 4 Locus of Control and Grade Point Average Descriptives

GradePointAverage

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	22	3.1709	.52651	.11225	2.9375	3.4043	2.00	4.00
2.00	32	3.0894	.56876	.10054	2.8843	3.2944	1.50	4.00
Total	54	3.1226	.54834	.07462	2.9729	3.2723	1.50	4.00

Table 5 Locus of control and Grade Point Average

GradePointAverage

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.087	1	.087	.284	.596
Within Groups	15.849	52	.305		
Total	15.936	53			



## **CHAPTER 5**

### **Summary/Discussion/Suggestions for Future Research**

#### **5.1 Summary**

The purpose of this investigation was to determine the relationship between locus of control and birth order. Also, if birth order has an effect of the academic achievement on college students (n=54). A demographics survey was designed to determine the academic success based on grade point average. The Rotter's Locus of Control survey was used to determine the locus of control of the college students. Neither hypothesis investigated yielded the predicted results. This could be due to the small sample recruited by each birth position. A discussion and future research tactics are discussed.

#### **5.2 Discussion**

According to the researcher's findings there was not a statistically significant relationship between birth order and academics. In fact through the researchers data it was discovered that third born children had the highest mean gpa over each birth order category. This could be due to the fact that each category did not have an equal value of participants. Appendix A will shows that the Demographics survey was slightly confusing. One question stated: "What position are you in the family please circle?" Some data had to be disqualified due

to the fact that some students listed their place in their family, including mom and dad, and not their birth order. Also, another confusing question, "Do you think that you are more success in school than your siblings? If yes, briefly explain why." Some students listed that they performed better than their siblings even if they listed their g.p.a as lower. This caused some subjects information to be thrown out as well. Many students also forgot to include their siblings gpa but answered this question stating that their sibling performed way better than them in school. If the question was written more clearly, the results may have been different.

As far as the relationship between birth order and locus of control, the results did not turn out as hypothesized. The first born children had an external locus of control just as the second born children did. What was interesting was that third born children had an internal locus of control. Finding out that there is almost a statistically significant difference between locus of control and academics can lead someone to want to further investigate this with more subjects. Knowing that locus of control can determine the academic success of someone is just as important as knowing that birth order determines academic success. This is important information for future educating staff and family members. The more research done to determine this allows educators and family

members to education their students and children with proper knowledge of the best way to interact with their child based on their genetic academic ability.

### **5.3 Conclusions and Suggestions for Future Research**

There are a few suggestions that the researcher would recommend to future researchers. In reference to academic success besides requesting the grade point average of the siblings an academic achievement test should be handed out. This will provide more accuracy for academic achievement as opposed to asking the subjects to give their grade point average. Also, it would provide more data to compare as far as academics and locus of control are concerned. With specific data, the researcher can investigate if a person with a high academic achievement also has an internalized locus of control and a person with low academic achievement has an externalized locus of control.

Another issue that was encountered was the accuracy of the gpa that the subjects submitted about their siblings. It would be best if in the future if about 20 or more families with three or more children were compared. For example, family one has three children, all three children would fill out the academics survey and the Rotter's Locus of Control Scale. Their results would be compared against one another and the other families. Perhaps, if the researcher has enough

time to do this study the hypothesis that first borns have internalized locus of control and later borns have external locus of control would be clearly seen.

Lastly, it is important to know the ages of all siblings. It may be best if all siblings from highschool on participate. It would be interesting to see if the actual birth order characteristics changes based on a large age gap. For example, if there are seven or more years in between the first born and second born, would the second born then be the first born to any other siblings? This question is raised because many times a child that is in the middle of siblings may have characteristics of the first born due to the fact that they are the eldest in the house when other siblings are born. If no other siblings are born, they may have the characteristics of an only child. This is only a prediction that may need more investigation because not too much research discusses birth order to that extent.

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## Appendix A

### Demographics Survey

1. Are you the only child? YES NO
2. If not, how many siblings do you have, not including yourself?
3. What position are you in the family please circle? (Write in your place if not listed)

First, Second, Third, Fourth, Fifth, Sixth

4. Based on your best knowledge, list your grade point average and your siblings next to the proper position. (Please do not include any names).

First

Second

Third

Fourth

\*If you need to add more siblings please feel free to use the back of the paper.

5. Do you think that you are more success in school than your siblings?

YES NO If yes, briefly explain why.

## Appendix B

### Rotter's Locus of Control Scale

Directions: Circle the letter from each set of questions that you believe to be true.

1. a. Children get into trouble because their parents punish them too much.  
1. b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.  
2. b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.  
3. b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.  
4. b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.  
5. b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks, one cannot be an effective leader.  
6. b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try, some people just don't like you.  
7. b. People who can't get others to like them don't understand how to get along with others.
8. a. Heredity plays the major role in determining one's personality.  
8. b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.  
9. b. Trusting fate has never turned out as well for me as making a decision to take a definite course of action.
10. a. In the case of the well prepared student there is rarely, if ever, such a thing as an unfair test.  
10. b. Many times, exam questions tend to be so unrelated to course work that studying is really useless.
11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.  
11. b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.  
12. b. This world is run by the few people in power, and there is not much the little guy can do about it.
13. a. When I make plans, I am almost certain that I can make them work.  
13. b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. a. There are certain people who are just no good.  
14. b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.  
15. b. Many times we might just as well decide what to do by flipping a coin.
16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.  
16. b. Getting people to do the right thing depends upon ability - luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.  
17. b. By taking an active part in political and social affairs the people can control world events.

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.  
18. b. There really is no such thing as "luck."
19. a. One should always be willing to admit mistakes.  
19. b. It is usually best to cover up one's mistakes.
20. a. It is hard to know whether or not a person really likes you.  
20. b. How many friends you have depends upon how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.  
21. b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.  
22. b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.  
23. b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.  
24. b. A good leader makes it clear to everybody what their jobs are.
25. a. Many times I feel that I have little influence over the things that happen to me.  
25. b. It is impossible for me to believe that chance or luck plays an important role in my life.
26. a. People are lonely because they don't try to be friendly.  
26. b. There's not much use in trying too hard to please people, if they like you, they like you.
27. a. There is too much emphasis on athletics in high school.  
27. b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.

28. b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.

29. b. In the long run the people are responsible for bad government on a national as well as on a local level.

**Score one point for each of the following:**

2.a, 3.b, 4.b, 5.b, 6.a, 7.a, 9.a, 10.b, 11.b, 12.b, 13.b, 15.b, 16.a, 17.a, 18.a, 20.a,  
21.a, 22.b, 23.a, 25.a, 26.b, 28.b, 29.a.

A high score = External Locus of Control

A low score = Internal Locus of Control