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A CORRELATIONAL STUDY OF THE RELATIONSHIP BETWEEN BIRTH  
ORDER AND INDIVIDUAL'S LOCUS OF CONTROL

by  
Rachel Heiblim

A Thesis

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

Approved by \_\_\_\_\_

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## ABSTRACT

Rachel Heiblim

### A CORRELATIONAL STUDY OF THE RELATIONSHIP BETWEEN BIRTH ORDER AND INDIVIDUAL'S LOCUS OF CONTROL

2005 / 2006

Dr. Roberta Dihoff and Dr. John Klanderman

The purpose of the current study was to uncover any possible correlational relationships between Individual's birth order and their locus of control. The Austrian psychologist, Alfred Adler, had some theories concerning birth order which were of particular interest to the author as the ideas for this study were unfolding. Fifty adults ( $n = 50$ ) from a major northeastern university, eighty four percent of whom were female and sixteen percent of whom were male, served as participants. Subjects completed Rotter's twenty nine question internal / external locus of control scale as well as a demographic survey which provided the researcher with the pertinent ordinal positioning information. Kendall's tau-b and Spearman's rho were utilized and with results remaining in the insignificant range, the null hypothesis failed to be rejected.

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## CHAPTER ONE

### The Problem

#### Need

While observing the overall lack of correlational research between birth order and individual's locus of control, the author has noted that much knowledge can and should be gained with further investigation. Considering the dominant role both variables continuously play in the lives of individuals, it is surprising that studies linking the two are so sparse. The events in one's life, their successes and failures, are often influenced by various characteristics of their locus of control; be it internal / external, constant / changing, positive / negative, or specific / global. Consequently, any possible role ordinal positioning may play on this variable should be acknowledged so that moving forward, individuals may benefit from striving to obtain more advantageous combinations than may occur naturally.

#### Purpose

One purpose of this study is to expand the existing literature on this topic, to contribute more knowledge to that which has already been gained. Additionally, on a more practical level, this study also strives to better the lives of individuals by discovering the possible control birth order exerts over locus of control. By doing so, this study aspires to put the power back into the hands of the individuals where it can more aptly be used, as opposed to the random distribution that occurs without intervention. To elaborate, it can be assumed that individuals benefit greatly from having an internal,

constant, positive locus of control. Conversely, individuals suffer from possessing an external, global, negative locus of control. Birth order is a variable that may contribute to the make up of one's locus of control. Without knowing what influence birth order has, individuals passively assume whichever characteristics their ordinal position dictates. However, armed with the knowledge that a particular birth placement is more likely to yield a negative combination of locus of control characteristics, that individual could take precautionary measures to avoid what would occur by default. In essence, individuals who might otherwise spend their lives suffering from feelings of helplessness could, if they choose, accept the challenge of taking responsibility for their situation, for deciding on their own which paths they want their lives to follow.

### Hypothesis

The researcher in this study is interested in discovering the relationship between the dependent variable, birth order, and the independent variable, locus of control. It is hypothesized that there is a correlation between first born individuals and an internal locus of control. Additionally, it is hypothesized that there is a correlation between last born individuals and an external locus of control. Lastly, it is hypothesized that in situations where there is a third child born in between the first and last, that middle child will experience an external sense of locus of control stronger than that of the youngest child.

### Theory / Background

The Austrian psychologist, Alfred Adler, had some theories concerning birth order that are of interest to us now. He found that a first born child often receives large

amounts of attention and works hard to achieve goals. Perhaps Adler's notion of first born children working hard will correlate to an internal sense of locus of control. Adler found that the second child in a family is born already sharing the love and attention the first born enjoyed all to themselves. Consequently, the second child behaves as if they were in a race with the first born, always competing for the much desired love of the parents. Second children often succeed where the first child has failed and therefore appear to possess characteristics quite opposite of their earlier born siblings. Perhaps if the current hypothesis is accurate and first born children possess an internal locus of control, second born children will assume the opposite role and take on an external locus of control. Concerning the middle child in a family of three or more, Adler suggested that these children often feel lost or neglected and, therefore, go on to become a problem child. Perhaps these feelings of being lost or neglected will correlate with an external negative sense of locus of control. When studying the youngest in a family, Adler suggested that they develop in ways entirely unlike the previous children in a family. This choosing of one's own path might imply an internal sense of locus of control, which differs from the hypothesis suggested in the current study.

### Definitions

The degree to which an individual takes responsibility for the events which occur in their life refers to locus of control. Internal locus of control is demonstrated when individuals claim responsibility. For example, scoring high on a standardized test because ample time was spent studying. External locus of control is apparent when individuals fail to take responsibility. For example, suggesting the high score was rewarded because the test was exceptionally easy, as opposed to any knowledge the

individual may possess.

Constant versus changing is another relevant dimension of locus of control. Constant suggests that the condition, whatever it may be, is a permanent state, while changing suggests that the condition vacillates. For example, if an individual accidentally performs a dangerous maneuver while driving, the individual with a constant state of locus of control might think they are always a dangerous driver and constantly putting others at risk. However, the individual with a changing locus of control might recognize the maneuver as dangerous, but readily be able to realize that next time they will handle a similar situation in a safer manner.

Positive versus negative is another dimension found in locus of control. This dimension is very straightforward and uses the term positive to indicate events that are desirable while it uses the term negative to indicate events which are undesirable.

A final dimension of locus of control is that of global versus specific. To illustrate, if an individual has a negative global sense of locus of control in regard to academics, that individual would believe all areas of academia to be more than they can handle. However, if that same individual has a negative specific sense of locus of control in regard to academia, they might view one particular subject as out of their ability, however readily accept that they can succeed in the remaining subjects.

#### Assumptions

During the course of this research project there were many conditions that, although assumed, the investigator believes to be valid. One such assumption is that while completing the measure, all participants understood fully that which they were

reading. Additionally, it is assumed that participants chose to support this thesis by answering the questions accurately, as opposed to indicating false answers for silly, immature reasons. Further, it is assumed that not only did the participants strive to complete the measure in a truthful and accurate manner, but that the participant's ability to comply was not being compromised by factors such as personal illness, family drama or national crisis. That is, it is assumed that at the time of completion there were no confounding variables which were preventing the participants from giving the measure their full and uncompromised attention. Another assumption made by the author is that although the study used only adult college students from a north eastern state university, these subjects are representative of the population at large and consequently this study has strong external validity.

#### Limitations

It is important to acknowledge the limitations this study faces. Primarily, this project looks only at individuals coming from a two, three, four or five child household. Therefore, the dynamic relationship between locus of control and birth order for individuals who come from larger than five child families will not be discovered. Additionally, this study is limited in that there are surely many variables which influence locus of control and, due to time restrictions, this study will only be looking at one of them. Another limiting factor is that, due to extenuating circumstances, a situation may arise such that individuals from different birth placement may be found to poses a similar locus of control profile. In this circumstance, it will be hard to draw definitive conclusions as to which birth order yields the most optimal combination of locus of control characteristics. Lastly, it may be perceived birth order, as suggested by Adler,

rather than chronological birth order which dictates individual's locus of control.

### Summary

Moving forward, in chapter two the reader will find a review of currently available literature on relevant topics. Information can be found on birth order independently and how it relates to other variables. Information can also be found on the nature of locus of control and how it relates to other variables. Perhaps most pertinent, there will also be a review of current literature that discusses the two variables as they relate to each other. In chapter three the reader can find the design of the current study. Specifically, the reader will gain insight by understanding the sample, measures, procedures, design, hypothesis and analysis of the study. In chapter four the reader can view the results, and in chapter five the reader will find a discussion which touches on conclusions, limitations, suggestions for future research and a summary of the study.

## CHAPTER TWO

### Review of the Literature

This chapter will provide the reader with a deeper understanding of various factors which relate either loosely or directly to the present study. The researcher will begin with an exploration of birth order. Birth order is a variable which has been studied extensively in past research. The relationship birth order has with sexuality, psychological birth order, speech, parental interactions, disorders and interpersonal relationships will be explored. Next, a closer look will be taken at the concept of locus of control. The reader will find a summary of the relationship locus of control has with depression and anxiety, tragedy, health, work place and well-being as it is reflected in past literature. Lastly, the author will review some articles which pertain to the current study in that they directly examine the relationship between birth order and locus of control. Finally, a summary of findings will be presented.

#### *Birth Order*

##### Sexuality

Some studies have sought to examine the effect birth order may have on various facets of sexuality. Two such studies were conducted in 2002 and then again in 2003 by Anthony F. Bogaert with very similar results. In the first study Bogaert explored the connection between fraternal birth order and homosexual orientation in men. Here, fraternal birth order refers specifically to the amount of older male siblings one has, and not to the amount of younger male siblings, or female siblings of any age. The study

found that with an increase in the number of older male siblings, participants were more likely to experience homosexual attraction but not necessarily homosexual behavior. Lastly, Bogaert found no connection between fraternal birth order and sexual orientation in women.

The second study published by Bogaert in 2003 looked specifically at the relationship between fraternal birth order and body size in male sexual orientation. The study found a significant correlation between increasing number of older male siblings and shorter stature in individuals who demonstrate homosexual attraction. As in the 2002 study, no significant relationship was found between fraternal birth order and sexual behavior, nor was there a relationship in adult stature and fraternal birth order amongst women.

An earlier study conducted by Bogaert in 1997 was interested in determining if homosexual women tend to have a later birth order as compared to their heterosexual counterparts, as is the case with homosexual men. The study failed to find any significant birth order effect.

A final study examining the effect of birth order on sexuality was conducted by Kris H. Poasa, Ray Blanchard and Kenneth J. Zucker in 2004. These researchers observed a similar phenomena outside of the western world. They found that in Samoa transgendered males often had a relatively large number of older siblings, specifically male siblings.

### Psychological Birth Order

Psychological birth order is referred to here as the role an individual perceives him or herself to be filling within the family, as opposed to chronological order of birth.



In 2001 Alan E Stewart, Elizabeth A. Stewart, and Linda F. Campbell studied the relationship between family atmosphere and psychological birth order. The study found various traits of the family atmosphere to be correlated with scores on the Psychological Birth Order Inventory (Campbell, White, and Stewart, 1991). Specifically, family achievement emphasis and orderliness were common in individuals who scored as a first child. General family dysfunction was likely in individuals who had a psychological middle score while neediness for attention and recognition was likely in individuals who had a psychological youngest score. Only child scores were found among individuals whose family atmosphere was dictated by decreased need for affiliation and a controlling family environment.

Another study by Jeffrey S. Ashby, Kenneth A. LoCicero, and Mary Catherine Kenny in 2003 looked at the relationship between psychological birth order and perfectionism. The study specifically explores three distinct styles of striving for perfection; adaptive perfectionists, maladaptive perfectionists, and nonperfectionists. The investigators found psychological middle child birth order to be common amongst maladaptive perfectionists and nonperfectionists. Additionally, nonperfectionists had higher rates of youngest child birth order than maladaptive perfectionists.

In 1997 a study by JoAnna White, Linda Campbell, Alan Stewart, Mardy Davies and Lloyd Pilkington used the White-Campbell Psychological Birth Order Inventory to examine the relationship between psychological birth order and career interests. They found that individuals with oldest child scores were drawn to careers which incorporated social and business contact areas as well as data driven and conventional fields. They also found that individuals with middle child scores tended to be uninterested in data-

driven and conventional fields. Further findings suggest that individuals scoring in the youngest child range had little interest in mathematical and investigative centered fields.

Kelly P. Gfroerer, Coleman A. Gfroerer, William L. Curlette, JoAnna White and Roy M. Kern did a study in 2003 which looked at the relationship between psychological birth order and scores on the Basic Adlerian Scales for Interpersonal Success. Their findings were largely consistent with Adlerian theory concerning the effect of one's perceived position in a family unit as opposed to one's actual chronological order of birth.

### Speech

Some studies have looked at ways in which birth order can affect various speech related abilities. One such study conducted by Yuriko Oshima-Takane, Elizabeth Goodz and Jeffery L. Derevensky in 1996 set out to see if first born as compared to second born children develop language at a similar rate. It was found that second born children produce pronouns at an earlier age, but there is no significant difference between the two birth orders for general language development.

Another study explored speech within the framework of autism and specifically in multiplex families, or families who have more than one autistic child. Donna Spiker, Linda J. Lotspeich, Sue Dimiceli, Peter Szatmari, Richard M. Myers and Neil Risch found a strong negative correlation between birth order and nonverbal IQ. Indeed, less than half of the firstborn subject's nonverbal IQ scores were located in the mental retardation range, while close to seventy percent of the second or later born children held such scores.

A third study by Julian M. Pine in 1995 sought to explore further the possible connection between birth order and vocabulary development. The study found a small, albeit significant, relationship between birth order and the age at which fifty vocabulary words were mastered. However, more noticeable were the correlations among siblings within family units.

### Parental Interaction

The interaction between birth order and parental factors is another subject studied in the literature. One study in particular, conducted by Toshiyuki Someya, Toru Uehara, Maho Kadowaki, Sui Wong Tang and Saburo Takahashi in 1999, examined perceived parental styles as a function of offspring's birth order. They found that earlier born male children interpret parenting styles to be more rejecting than their female counterparts. Another study conducted in 2002 by Heidi Keller and Ulrike Zach noted that earlier born children hold an advantage over later born siblings in terms of the presence of both parents and the face to face behavior of fathers when mothers are also present. It was noted that these conditions, which are overly representative in the case of first born children, are advantageous because parental treatment may extend great influence over developmental trajectories.

A final study, conducted by Liat Kulik in 2004 explored the transmission of attitudes from parents to adolescent sons. It was found that a father's attitudes are most present in their first born adolescent son, and less so with each additional son. For mothers, a transmission of attitudes was barely present in the first born adolescent son, but appeared more often with later born sons.

## Disorders

Many researchers have sought to explore the relationship birth order has with various disorders. In 1998 K. Zucker, S. Lightbody, K. Pecore, S. Bradley and R. Blanchard conducted a study which explored the relationship between birth order and gender identity disorder in females. The study found a significant relationship between gender identity disorder and early birth order. Another study conducted by Darryl Britto, David Meyers, Jennifer Smith and Robert Palmer in 1996 examined correlations between anorexia nervosa and bulimia nervosa to birth order. No correlations were found. In a 2002 study that examined birth order as a possible risk factor for epilepsy, significant associations were found. T. Obeid, A. Awada, P. Amene and G. Oni noticed that epilepsy, specifically cryptogenic type, was more likely to be found in individuals who had a low birth order. It was demonstrated that it was in fact the low birth order which was connected to the disorder, and not a small family of origin, how it was originally speculated. The possible relationship between suicide among schizophrenics and birth order was examined in a 2000 study conducted by Tatsuhide Funahashi, Yasuo Ibuki, Yuji Domon, Tsutomu Nishimura, Daiji Akehashi and Hideo Sugiura. Their findings demonstrated a higher risk for suicide among middle born children.

## Interpersonal Relationships

Interpersonal relationships are another facet of life which may be influenced by birth order. Catherine Salmon conducted a study in 2002 to study this precise phenomena. Her findings suggest that individuals who are middle born have more positive feelings towards their friends, and less positive feelings towards their family, as compared to their older or younger siblings. Consequently, middle born individuals were

found to be less likely to help a family member in need than their first born or last born siblings. Another study, conducted by Bryce Sullivan and Andrew Schwebel in 1996, was interested in determining if there were any significant correlations between birth order and irrational relationship beliefs. Here, irrational relationship beliefs are understood as unrealistically optimistic notions about future relationships which may lead to disappointment. It was found that middle born children were significantly more likely to hold irrational relationship beliefs.

### *Locus of Control*

#### Depression, Anxiety

Many studies have been conducted in an effort to better understand the relationship between depression, anxiety and locus of control. In one study, conducted by Peter Muris, Cor Meesters, Erik Schouten and Elske Hoge in 2004, the interactions between perceived level of control, perceived parental rearing behaviors and anxious or depressed experiences were compared. The investigators found the interaction to be such that low levels of perceived control combined with highly anxious rearing techniques yielded relatively high levels of anxiety. Additionally, high levels of perceived control combined with lower anxiety prone techniques yielded lower levels of anxiety in nonclinical youths.

Another study, conducted in 2004, sought to explore the relationship between depression, life satisfaction, and perceived control in Central-Eastern and Western Europe. In this study, Jane Wardle, Andrew Steptoe, Gabriel Gulis, Gudrun Sartory, Helena Sek, Irina Todorova, Claus Vogele and Michal Ziarko found that low internal and

high external locus of control was related to depression and low levels of life satisfaction.

A recent investigation conducted by Alessandra Pokrajac-Bulian and Ivanka Zivcic-Becirevic in 2005 studied the relationship between self esteem, body dissatisfaction and locus of control among men and women. Findings suggested that women experience higher levels of external control in regards to their body satisfaction than men do. This lack of perceived personal control was associated with feelings of helplessness, lower levels of self esteem and possible depression.

### Tragedy

The relationship between locus of control and tragedy has also been studied. In 2004 Gidi Rubinstein conducted a study which explored the interplay of locus of control and helplessness among parents who have experienced the tragedy of loosing a child in a war related situation. Findings suggested that locus of control was significantly more external for bereaved parents than parents in a control group. However, feelings of hopelessness were found to be lower for bereaved parents then for those parents serving as the controls. Further, mothers demonstrated a more external locus of control and more exaggerated feelings of hopelessness than did fathers in both the control and experimental group. And more specifically, bereaved mothers felt less personal control and more hopeless than did any other subgroup.

Another study which focused on the interaction of locus of control and various tragedies was conducted by Siobhan L. McEwan, Anton F. De Man and Paul Simpson-Housley in 2005. This study explored the correlations between acquaintance rape, ego-identity achievement and locus of control. The study's results showed a significant

correlation between survival of acquaintance rape, low levels of ego-identity and a largely external locus of control.

In 2004 Patricia Frazier, Jason Steward and Heather Mortensen examined the perceived control of individuals who had been victims of sexual assault versus the perceived control of individuals who had suffered the sudden loss of a loved one. They found that individuals in both groups believed they would have more control if the adverse situations attempted to repeat themselves in the future. Additionally, it was found that a greater internal locus of control is present in the case of sexual assault than it is for bereavement. Lastly, individuals who suffered the loss of a loved one had a higher internal sense of control concerning their healing process than did victims of sexual assault.

A study conducted in 2004 linked locus of control to domestic violence offenders. Specifically, Erica Bowen and Elizabeth Gilchrist sought to explore whether self-referred or court-referred domestic violence offenders had a more internal or external sense of locus of control. It was found that self-referred offenders tend to acknowledge their problem and are more likely to be motivated towards change. These self-referred offenders additionally have a higher internal sense of control than do their court-referred counterparts.

Finally, a 2004 study conducted by Caroline M. Clements, Caryn M. Sabourin and Lorinda Spiby examined the relationship between perceived control and the feelings of hopelessness and dysphoria following domestic violence. They noted that while most participants experienced high levels of dysphoria after an episode, the women who had high levels of perceived control over future episodes experienced a decrease in their

dysphoria. Conversely, the women who had low levels of perceived control over future domestic abuse tended to feel more dysphoric. Also, it was noted that high levels of personal control for the future were associated with lowered levels of hopelessness.

## Health

Health locus of control refers to the expectation that an individual's health status either is or is not related to that individual's behavior. One study, conducted in 2005, explored the relationship between health locus of control and perceived risk for breast cancer. Jennifer L. Rowe, Guy H. Montgomery, Paul R. Duberstein and Dana H. Bovbjerg found that specifically breast cancer perceived control, and generally, internal locus of control overall yielded a perceived likelihood of remaining breast cancer free.

In 2003 Pamela Williams-Piehot, Tamera R. Schneider, Judith Pizarro, Linda Mowad and Peter Salovey set out to study the relationship between locus of control and matching health messages for the purposes of increasing mammography utilization. They found that when the presented health messages matched a woman's own health locus of control, the chance that she would receive a mammogram greatly increased. This finding was particularly significant for participants who exhibited an internal locus of control.

Lastly, Chia-Chin Lin and Hsiu-Fen Tsay conducted a study in 2005 in which they studied the relationships between patients' perceived diagnostic disclosure, health locus of control and levels of hope. They found that an internal locus of control was more likely when patients believed they had been made aware of their medical diagnosis. Additionally, the internal health locus of control was significantly correlated with a higher level of hope.



## Work Place

The role locus of control has in the work place is also of interest. In 2004 a study was conducted which explored the relationship between work locus of control and how it effects participant's health and job satisfaction. Tuija Muhonen and Eva Torkelson found a positive correlation between external work locus of control and symptoms of ill health. Additionally, a negative correlation was found between external work locus of control and job satisfaction in both women and men.

Another study, conducted in 2005 examined leader-member exchanges in terms of locus of control and work reactions. R. Martin, G. Thomas, K. Charles, O. Epitropaki and R. Mcnamara found that workers with an internal locus of control tended to report higher levels of satisfaction with their managers. These better relationships with managers, in turn resulted in more desirable work related reactions. Lastly, the advantageous reactions were correlated with job satisfaction, work related well being and organizational commitment.

## Well-Being

Another area of interest is how locus of control might effect individuals well being. Kimya S. Lee conducted a study in 2004 which explored the effect of social activism on the occupational experience, locus of control, and overall well-being of black midlife women. While the study found a connection between social activism and occupational attainment, it failed to find a correlation between social activism and locus of control or well-being. Perhaps of more interest to the present study, however, Lee's study found a positive relationship between an internal locus of control and overall well-being in the participants.

An experiment conducted in 2004 studied the relationship between locus of control and spiritual well-being in self declared individuals. Ana Wong-McDonald and Richard L. Gorsuch found a greater sense of spiritual well-being amongst religious individuals who did not report acting independently from a deity (external god locus of control).

#### *Interactions Between Birth Order and Locus of Control*

Most relevant to the current study is literature that examines the direct relationship between the two variables of birth order and locus of control. A dated study, published in 1978, took a closer look at the relationship which exists between locus of control and individuals birth order. The study used eighty nine young men who were applying for positions in a graduate program in India. In this study, H. S. Eswara found that middle born subjects had the greatest amount of perceived internal control, followed by last born individuals, and finally first born candidates, with the greatest amount of external control. When compared to each other with t tests, it was found that the difference between first born and last born, as well as middle born and last born level of locus of control was not significant. A significant finding was, however, found between first born and middle born individuals. When the middle born and last born locus of control scores were combined and compared to first born scores, the difference was significant.

Just around the same time, in 1974, another study explored the same two variables, birth order and locus of control. This study, conducted by Robert C. Newhouse, however, studied how the two variables would interact in upper elementary

school aged children. Specifically, the amount of responsibility the children would claim for their successes was investigated. The Children's Intellectual Achievement Responsibility Questionnaire was given to eight hundred fourth, fifth and sixth graders. After the post-hoc tests were completed, it was found that only children tended to claim less responsibility for their successes than did first or later born subjects. Additionally, it was found that there was no significant difference in the amount of responsibility being claimed between first and later born participants.

Another study, conducted in 1983, was also interested in the effects of birth order and locus of control. A third variable, sex, was also included in this study. Rita Fraser and Michael S. Nystul used the Levenson Locus of Control Scale to measure participants' perception of control. This scale, a revision of Rotter's scale, actually goes a step further and assesses subjects on three locus of control orientation. Instead of limiting itself to internal and external, this scale takes into consideration internal, powerful others, and chance. An internal score on the Levenson scale is very similar to an internal score on the Rotter scale. The difference is found in the latter two scores. Here, a powerful other score implies the participant believes there is indeed order to the world, but they lack the ability to control that order. A chance score, however, implies the participant believes the world is lacking in any order. The study's sole significant finding was that when combined with the sex variable, prediction about locus of control could be made for ordinal positioning. Specifically, female participants who were the last to be born in their families tended to have a chance locus of control, implying they did not have a sense of control over their lives, and they believed the world to be intrinsically lacking in order.

A final study, conducted by Antoinette S. Phillips and Carl R. Phillips also explored the relationship between ordinal positioning and self-attributes for achievement. This 2000 study was interested in the credit various birth ordered individuals took for their positive performances as compared to their negative performances. The experiment found that all individuals, regardless of their birth order, took more responsibility for their accomplishments than their failures. A difference was found in exactly how much credit was taken for positive accomplishments. Findings suggest that first born individuals tended to take more credit for their positive actions than did their later born counterparts. Concerning the lowered amount of self attribution for poor performances, no significant difference was found between the birth orders.

#### Summary

The knowledge gained from past literature can help the reader understand the current study in its proper context. By viewing findings of experiments which compared birth order and locus of control to many other variables, the reader is better able to appreciate the two variables when compared to one another. Given the four studies presented above which compare the two variables of interest, it is difficult to tie together any strong conclusions which may predict the outcome of the current study. Indeed, diverse outcomes have been found amongst the various experiments. One finding, which states that last born females possess a chance locus of control, is partially consistent with Adlerian theory, and consequently might possibly serve as a prediction for the present study.

## CHAPTER THREE

### The Design

#### Sample

Fifty students from a major northeastern university served as participants. Most participants were young adults, with only a few exceptions. Specifically, forty seven individuals were at least eighteen years of age but younger than twenty five. The three remaining participants had a larger variation in their ages, which ranged from thirty through sixty. The distribution of females as compared to males was largely unequal. Eighty four percent of the sample was female while the remaining sixteen percent was male.

#### Measures

For the purposes of the current study, Rotter's twenty nine question internal / external locus of control scale was utilized. The Rotter's scale asks the test taker twenty nine different questions to gauge the extent to which the individual claims responsibility for the events which occur in their life or, contrarily, the degree to which they allot the responsibility to other people or events. Some of the questions are relatively straight forward, while other questions are somewhat hidden. A study published in 1981 considered the reliability of the Rotter internal-external scale. The "test-retest reliability of the I-E scale was .61. Therefore, the results of the above mentioned study suggest that the Rotter scale of internal-external locus of control is "stable over a considerable period of time."

There are many reasons why the Rotter internal-external locus of control scale was chosen for this experiment. One main reason is that, since the measure's creation in 1966, it has demonstrated a fair amount of reliability. Equally important, however, this scale was chosen due its wide spread use among studies dealing with locus of control. To clarify, this measure was not chosen solely due to its frequent presence in modern studies, it was indeed chosen because of the merit it possesses. However, its widespread use appealed to the author because of the ease at which past finding can be compared to the current findings if a similar measure is used. Therefore, the significant role the Rotter has played in past internal-external studies has largely contributed to the decision to utilize the measure once again in the current study.

#### Procedures

For the current study, access to participants was granted via permission from professors to utilize a section of their lectures for the purpose of this masters thesis. However, for future research, access to participants does not need to be limited solely to in-class activities. Rather, participants can be obtained through the Introductory to Psychology experimental requirement, or any other way a researcher can attract participants providing the Institutional Review Board deems it appropriate. For the current study, however, participants were approached in the above mentioned manner. Upon arrival, the students present were given a description of the nature of this study. It was further explained to them that if they so chose, their participation in the experiment would be greatly appreciated. Alternatively, if they chose not to participate they were encouraged to wait quietly and respectfully while their classmates completed the survey. Before the Rotter scales were passed out every participant read over and signed a release

form stating that they understood their role in the study and freely chose to participate. Once the permission forms were collected each participant received a packet containing both the Rotter internal-external locus of control scale and an additional form used to gather pertinent demographic information. The demographic information gathered included the participant's sex, age and birth order. No where on the demographic information sheet did subjects provide their name or any other identifying information. The subjects were given ample time to complete the Rotter scale and the additional demographic information form. When they were done, packets were collected and the professors resumed regular classroom proceedings.

#### Hypothesis

There are many relationships which may be found between individual's birth order, sex and locus of control. Concerning sex specifically, I hypothesis that a stronger correlational relationship will be observed between males and internal locus of control than with females and internal locus of control. And, conversely, I propose females will correlate with higher levels of external locus of control than will males. Concerning birth order, I hypothesis that first born participants will demonstrate high levels of internal locus of control while last born individuals will demonstrate an external locus of control. Additionally, I propose that middle children will have the greatest levels of external locus of control.

## CHAPTER FOUR

### Results

As mentioned in the previous chapter, there are many relationships which may be found between individual's birth order, sex and locus of control. In regards to sex, I hypothesize that females experience greater levels of external locus of control, while males experience greater levels of internal locus of control. Concerning birth order, I hypothesize that the strongest correlational relationship will be found between first born children and internal locus of control. I hypothesize further that a significant correlation will be observed between external locus of control and last born children. Lastly, I hypothesize that a stronger correlation will be observed between middle born children and external locus of control.

In reference to my first hypothesis concerning participant sex, an insufficient representation of males in the sample resulted in inadequate data and a subsequent lack of results. Further comments on this matter can be found in the following chapter.

My next hypothesis questioned the correlational relationship between birth order and locus of control. Spearman's rho and Kendall's tau-b were utilized and results, which can be viewed in figure 4.1, were not significant.



**Figure 4.1**

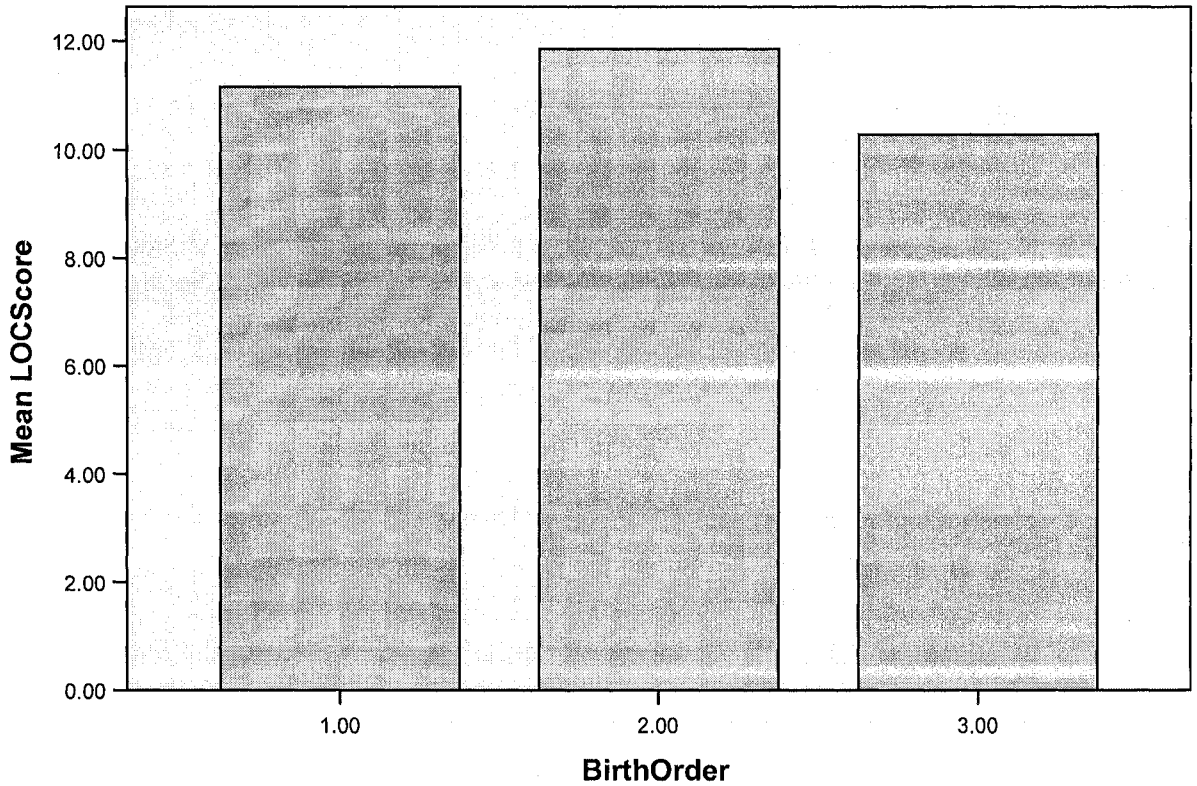
**Correlations**

			SCORE	ORDER
Kendall's tau_b	SCORE	Correlation Coefficient	1.000	-.085
		Sig. (2-tailed)	.	.456
		N	50	50
	ORDER	Correlation Coefficient	-.085	1.000
		Sig. (2-tailed)	.456	.
		N	50	50
Spearman's rho	SCORE	Correlation Coefficient	1.000	-.103
		Sig. (2-tailed)	.	.477
		N	50	50
	ORDER	Correlation Coefficient	-.103	1.000
		Sig. (2-tailed)	.477	.
		N	50	50

Spearman's rho =  $-.103$ ,  $n = 50$ ,  $p > .05$ , two tails. Kendall's tau-b =  $-.085$ ,  $n = 50$ ,  $p > .05$ , two tails. These results can be seen in figure 4.2 where a birth order of 1, 2, or 3 represents individuals who are first born, middle born and last born, respectively. A higher score implies external locus of control while a lower score implies internal locus of control.

**Figure 4.2**

**Correlation Between Birth Order and Locus of Control**



In the following frequency table, located in figure 4.3, the reader can view the degree to which each birth order is represented in the current study. Representation was fairly equal with nineteen participants being the first born offspring in a family, thirteen participants being middle born, and eighteen participants being the last born offspring in their family.

**Figure 4.3**

**BirthOrder**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	19	38.0	38.0	38.0
	2.00	13	26.0	26.0	64.0
	3.00	18	36.0	36.0	100.0
Total		50	100.0	100.0	

Figure 4.4 visualized these frequencies.

**Figure 4.4**

**BirthOrder**

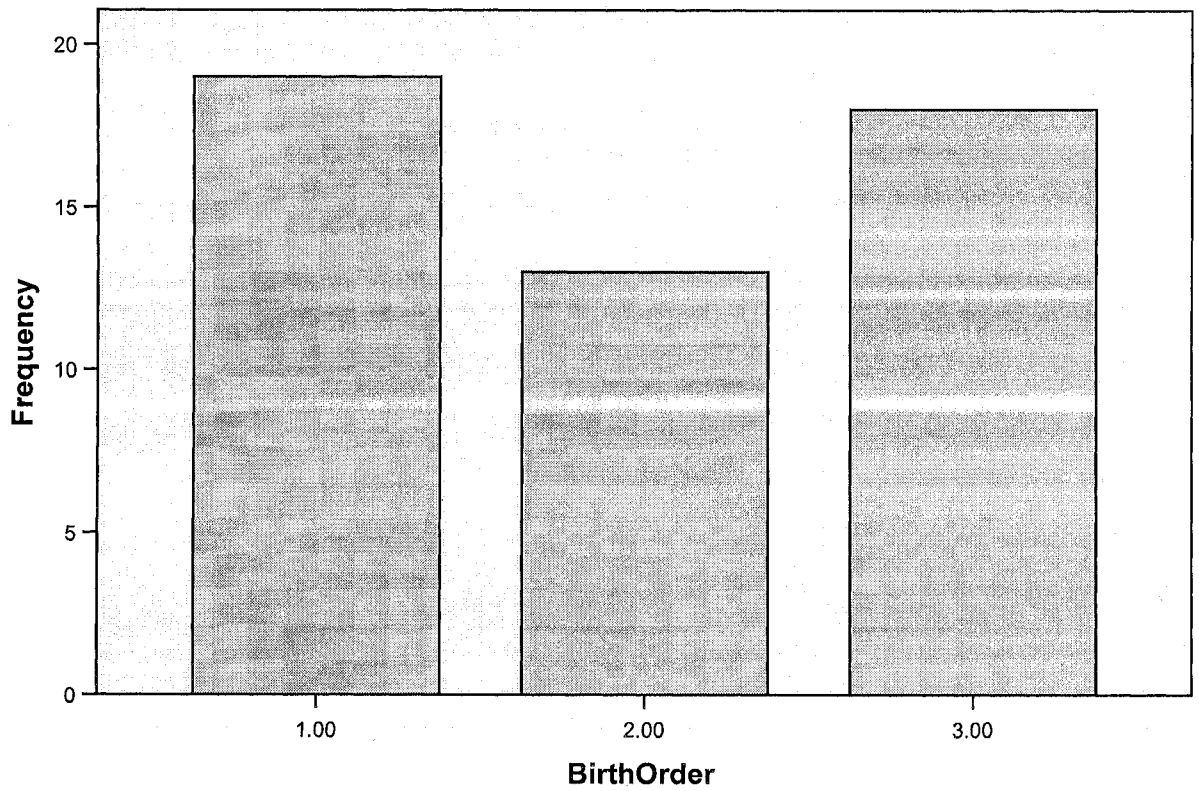


Figure 4.5 presents the frequencies of various locus of control scores across the

fifty participants. As the reader can see, scores range all the way from an internal score of two, up to an external score of twenty two.

**Figure 4.5**

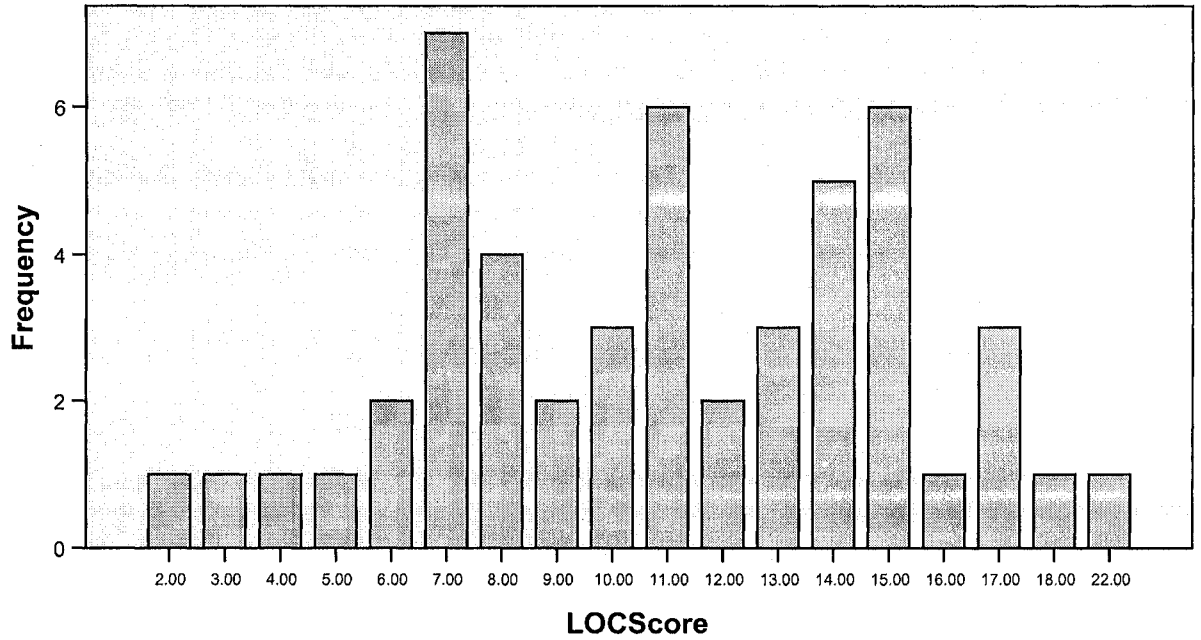
**LOCScore**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	1	2.0	2.0	2.0
	3.00	1	2.0	2.0	4.0
	4.00	1	2.0	2.0	6.0
	5.00	1	2.0	2.0	8.0
	6.00	2	4.0	4.0	12.0
	7.00	7	14.0	14.0	26.0
	8.00	4	8.0	8.0	34.0
	9.00	2	4.0	4.0	38.0
	10.00	3	6.0	6.0	44.0
	11.00	6	12.0	12.0	56.0
	12.00	2	4.0	4.0	60.0
	13.00	3	6.0	6.0	66.0
	14.00	5	10.0	10.0	76.0
	15.00	6	12.0	12.0	88.0
	16.00	1	2.0	2.0	90.0
	17.00	3	6.0	6.0	96.0
	18.00	1	2.0	2.0	98.0
	22.00	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Figure 4.6 visualizes these frequencies.

Figure 4.6

LOCScore



Summary

To conclude, a lacking representation of males in the current study resulted in inadequate data and subsequent lack of results. Further, correlations between individual's birth order and locus of control proved to be insignificant. These results will be discussed further in chapter five, along with limitations and suggestions for future research.

## CHAPTER FIVE

### Discussion

#### Conclusions

As noted in the previous chapter, significant correlations between participant birth order, sex and locus of control failed to be identified. These results have important implications. In chapter one a possible benefit of understanding the role birth order plays on individual's locus of control was discussed. To recap, an assumption was made that individuals benefit greatly from having an internal, constant, positive locus of control. Conversely, an assumption was also made that individuals suffer from possessing an external, global, negative locus of control. It was suggested that if various ordinal birth positioning correlated to a particular locus of control profile, actions could be taken to increase awareness of this phenomena and consequently improve the quality of individual's lives. This could be done by identifying which birth positions are at a greater risk for developing an external, global, negative locus of control and intervening at an early age before the individual begins to experience the undesirable locus of control profile.

The lack of significant results in the current study is very helpful in terms of working towards the above mentioned change. Armed with the knowledge this study has provided, individuals working towards improved locus of control can now divert their focus from birth order to other areas which will hopefully demonstrate stronger correlations.

There are certain relationships in the current data which while not at a significant

level, are still interesting. These relationships will be discussed here. As the researcher hypothesized, middle born participants did indeed demonstrate the largest amount of external locus of control. Contrary to what the researcher hypothesized, last born participants demonstrated the greatest level of internal locus of control, followed by first born participants showing the next greatest level of internal locus of control.

### Limitations

While the lack of significant correlations has served to increase the knowledge available on this topic, there are still limitations which should be considered. Sample size is one such limiting feature. While fifty participants were adequate, an increased sample size would typically more closely resemble the population it is drawn from. Therefore, additional participants would have been beneficial.

Restricted external validity is another variable which might have served as a limitation in the current study. All of the participants used in the current study are adults from a similar region of the country who attend the same university and are registered for the same limited number of classes. These circumstances might weaken the study's external validity and consequently serve as a limiting factor.

### Suggestions

The experience of conducting the current study has made apparent to the author some suggestions which may serve to facilitate the success of future research. One such suggestion relates closely to an above mentioned limitation. This suggestion refers specifically to sample size. In future studies researchers should strive to obtain as many participants as possible. The increased sample size will enable future samples to more

accurately reflect population characteristics and consequently will bolster the usefulness of a study.

Another suggestion also relates back to an idea mentioned as a limiting factor, that of external validity. It is suggested that in future studies researchers go to great lengths to obtain data from participants who possess great diversity and therefore more adequately reflect the population. One step a researcher can take to reach this goal is to get permission from various elementary and secondary schools to utilize their student population as participants in a study. The influx of children into the correlational study would add great insight into any possible results. Similarly, a researcher could obtain permission from a facility which caters to senior citizens to ask if any of the individuals would be willing to participate in the study. Another way to increase external validity might be to contact universities around the country via phone or email and request the participation of professors to administer the locus of control measure to their students. With the additional support across the country, results would not be limited by geographic constraints. Another useful suggestion might be to avoid limiting one's sample to individuals currently enrolled in college. Indeed, not all citizens attend college and ignoring that reality might skew future results.

A final suggestion might be to conduct studies searching for correlations between locus of control and many other variables, not only sex or birth order. With each additional study more knowledge will be gained and a clearer understanding of the circumstances surrounding individual's locus of control will be reached. In regards to the current study, the researcher's original purpose of expanding the literature on this topic and contributing more knowledge than was previously gained has indeed been achieved.



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Appendix A  
Informed Consent Form

### Informed Consent Form

I agree to participate in a study entitled "A Correlational Study of the Relationship Between Birth Order and Individual's Locus of Control," which is being conducted by Rachel Heiblim, a candidate for a masters degree at Rowan University.

The purpose of this study is to discover any possible correlation between individual's birth order and their locus of control. The data collected in this study will be used in Ms. Heiblim's thesis.

I understand that I will be asked to fill out Rotter's internal/external measure of locus of control. Further, I understand that I will be asked to fill out a brief demographic survey.

I understand that my responses will be anonymous and that all the data gathered will be confidential. I agree that any information obtained from this study may be used in any way thought best for publication or education provided that I am in no way identified and my name is not used.

I understand that there are no physical or psychological risks involved in this study, and that I am free to withdraw my participation at any time without penalty.

I understand that my participation does not imply employment with the state of New Jersey, Rowan University, the principal investigator, or any other project facilitator.

If I have any questions or problems concerning my participation in this study I may contact Rachel Heiblim at (732) 599-6799.

\_\_\_\_\_  
(Signature of Participant)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature of Investigator)

\_\_\_\_\_  
(Date)



Appendix B

Rotter's Locus of Control Scale

# Rotter's Locus of Control Scale

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1.
  - a. Children get into trouble because their parents punish them too much.
  - 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.
  - 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.
  - 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
  - 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.
  - 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.
  - 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.
  - 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
  - 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.
  - b. Trusting to 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.
  - 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.
  - 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.
  - 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.
  - 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.
  - b. There is some good in everybody.
15.
  - a. In my case getting what I want has little or nothing to do with luck.
  - 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.
  - 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.
  - 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.
  - b. There really is no such thing as "luck."
19.
  - a. One should always be willing to admit mistakes.
  - 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.
  - 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.
  - 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.
  - 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.
  - 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.
  - 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.
  - 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.
  - 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.
  - b. Team sports are an excellent way to build character.
28.
  - a. What happens to me is my own doing.
  - 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.
  - b. In the long run the people are responsible for bad government on a national as well as on a local level.

Appendix C  
Demographic Survey

## Demographic Survey

Age of participant \_\_\_\_\_

Sex of participant \_\_\_\_\_

Birth order of participant (check all that apply)

Only child

First born of \_\_\_\_\_ children

Second born of \_\_\_\_\_ children

Third born of \_\_\_\_\_ children

Fourth born of \_\_\_\_\_ children

Fifth born of \_\_\_\_\_ children

If there is a significant age gap between siblings (more than or equal to 5 years), please note it here.

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