

Birth Order: A Factor in Determining Parental Attention and Academic Achievement

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Abstract

This study explored the relationship between birth order, parental attention, and academic achievement. Results were obtained through a survey of school-age individuals. The researchers expected results to indicate that parental attention decreases incrementally with birth order-in other words, that parents give the most attention to their firstborn children, with less attention given to each subsequent child-and that as a result of this decreased parental attention, middle- and lastborn children display diminished academic performance. Contrary to these expectations, however, results showed that parental attention neither diminishes with birth order nor seems to affect academic achievement. However, as separate variables in the study, parental attention and grade average do vary according to birth order.

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Problem

Extensive research has been done on many aspects of birth order, parental attention, and academic achievement, beginning with Sir Francis Galton's study *English Men of Science* (1874), which established that firstborns pursue higher levels of education than laterborns (Ernst & Angst, 1983). Subsequently, Alfred Adler (1920) explored and recorded the relationship between birth order, gender, family size, and personality traits (Claxton, 1994). As research methods improved, birth-order research advanced, and "the 1960s and 1970s sparked attempts to relate birth order to differences in attitudes and opinions, creativity, job selection, personality, sex-role identity, socialization, and psychiatric problems" (Claxton, 1994, p. 477). R. B. Zajonc's "confluence hypothesis" (1975) expanded the basic idea that firstborns had a higher IQ due to extended contact with their parents to include the effect that relative position to the younger siblings and family size had on the intelligence of firstborn children (Ernst & Angst, 1983). However, researcher Dee Burton (1968) noted that studies involving birth order and intelligence have produced contradictory findings, with some studies indicating higher intelligence in firstborns, and others showing more intelligent laterborns.

Since intelligence can be measured in several different ways, the researchers in this study chose academic grades as a standard that illustrates a person's intellectual achievement and potential. According to Cornell University researchers, there is a "high correlation between general intelligence and years of schooling"; thus, school is "primarily a marker for intelligence" (Ceci & Williams, 1997). This means that academic grades can be used as reliable indicators of the general intelligence of participants in a study such as this one.

Past researchers have found that the more social interaction with adults or societal members (including, of course, parents) a child receives, the better that child will be at solving

problems (Fagot & Gauvain, 1997). It is evident, however, that parents interact differently with each of their children (Moore, Cohn, & Campbell, 1997). Ernst and Angst (1983) note, as a result of R. Peuckert's research, that different birth order elicits different methods of socialization from parents toward their children. More specifically, research has indicated that "mothers were found to engage in more social, affectionate, and caretaking (except feeding) behavior with firstborns than with second-borns" (Jacobs & Moss, 1976, cited in Moore, Cohn, & Campbell, 1997). This points to the possibility that birth order, parental attention, and intelligence are linked; yet, as Ernst and Angst (1983) point out, there is a deficit in research on the effect of socialization on children's intelligence.

Thus, this study attempted to determine the relationship between birth order, parental attention, and academic achievement. The hypothesis was that birth order and the corresponding degree of parental attention a child receives directly affects that child's academic achievement.

Method

Participants

Twenty-seven individuals, ranging in age from 13 to 39 years, completed the survey; however, of these participants, only 20 were included in the analysis. Those included 9 males and 11 females, ranging in age from 16 to 22. Six of the 20 participants analyzed were firstborns, 4 were middleborns, and 10 were lastborns. Each participant completed the full academic school year of 2000–2001 and had a grade average established. To be included in this study, each participant needed to have living parents and at least one sibling. The majority of volunteers for this study were students at Bucks County Community College. Several others were students at Moravian College, University of Delaware, or Archbishop Wood High School. Participants answered the surveys voluntarily; no compensation was provided.

Materials

This study involved the use of a survey (see Figure 1). Basic demographics were obtained along with information on birth order, parental attention, and academic achievement.

Procedure

The survey was distributed to a sample of high school- and college-aged individuals in families with two parents and two or more siblings. The study targeted participants aged 15 to 25 to increase the likelihood that they would be students residing with their parents. If a participant indicated on the survey that one or both parents were deceased or that he/she was an only child or multiple birth, then the data was not included in this study. As a result, analysis did not include three surveys filled out by individuals outside our age range, three surveys filled out by only children, and one survey filled out by an individual with a deceased parent. Additionally, the research measured differences between families: the researchers did not issue surveys to multiple siblings within the same family.

The participants in the survey were categorized into three sections: the first child was considered the firstborn, the last child was the lastborn, and all children in between were considered middleborn. The researchers gave each participant an anonymous survey in an envelope, to assure confidentiality and promote honest responses. Surveys were conducted in person to ensure that any questions the participants had could be addressed.

Once all of the completed surveys were received, the responses were entered into Excel. Not all of the data were used to calculate the correlation and means; only the total parental attention scores, birth order, and grade scores were used in this research. The unused data will be used for future research. Excel data was imported into SPSS for further statistical analyses. A composite score of each participant's responses to survey questions 13a, 13b, 14a, and 14b, relating to current parental attention, was then compiled, providing a total score for the amount

of attention the participant received from his or her parents. A higher calculated number corresponded with more parental attention. The maximum attention score possible was a score of 20. Each participant's score for academic achievement was calculated by assigning a score to each answer in question 21, their overall grade for the 2000–2001 school year. A score of 1 equaled a grade of F, 2 equaled a D, 3 equaled a C, 4 equaled a B, and 5 equaled an A.

Data were then analyzed using a univariate correlation between the total attention score, birth order, and academic achievement score. Individual results were divided into three groups: firstborn, middleborn, and lastborn. The researchers then took the academic achievement and attention scores and compared them using the mean of each birth-order group.

Results

As shown in Figure 2, the firstborn group had a mean attention score of 11.5, the middleborn group had a mean attention score of 10.75, and the lastborn group had a mean attention score of 11.67. Figure 3 shows that the mean grade for the firstborn group was 4.1(B), the middleborn group was 4.6 (A–), and the lastborn group was 4.4 (B+). Figure 4 shows the mean attention score alongside the mean grade score for each of the groups. The firstborn group had a mean attention score of 11.5 and a mean grade of B, the middleborn group had a mean attention score of 10.75 and a mean grade of A–, and the lastborn group had a mean attention score of 11.67 and a mean grade of B+. Table 1 shows the univariate correlation test results, which indicate that the relationship between birth order, parental attention, and academic achievement for our sample reached a significance level of .423.

Discussion

The results do not support the hypothesis that birth order and the corresponding degree of parental attention directly affect a child's academic achievement. The relationship between the birth order of the participant, the amount of parental attention received, and the participant's

success in school was not significant enough to show a correlation between these variables. However, these research findings did indicate that lastborns had the highest mean attention score, followed closely by firstborns, and then middleborns. Interestingly, middleborns had the highest mean grade scores, followed by lastborns and then firstborns. Therefore, even though these findings did not reach a significant level, birth order remains a meaningful covariate.

Further research on this subject should include a greater number of participants, with each birth-order position equally represented. This study fell short in this regard, only 20 applicable participants were included, and half of these were lastborns, making them over-represented. Future researchers should also use more valid methods of measuring academic achievement than participants' self-reporting of grade averages. Similarly, first-hand observation of parental attention levels should replace this study's subjective self-reporting of participants.

Due to the limited availability of participants, this study was confined to a between-family research design, which is essentially flawed: one cannot, of course, assume that similar family dynamics exist among the families of all participants. Researchers Rodgers, Cleveland, van den Oovd, and Rowe (2001) concluded that while results of between-family designs indicate a negative relationship between birth order and intelligence, within-family studies (the preferable method of research) decrease variation from extraneous variables and reveal "that birth order is unrelated to intelligence" (Michalski & Shackelford, 2001, p. 520). Therefore, future psychological research involving birth order should strictly use within-family participants. Researchers should also differentiate between middle children and the spacing between each child.

A related area that future investigators should concentrate on is the influence of sibling relationships on academic grades. Lack of parental attention may cause siblings to rely on one

another; alternately, parental favoritism and expectations may lead to intellectual competition between siblings. Tucker, McHale, and Crouter (2001) note that “younger siblings whose parents have lower education levels rely on older siblings for support with schoolwork” (p. 256).

Aside from advancing birth-order research, the findings of this study may be useful to parents who are interested in fostering the utmost intellectual capabilities of each of their children. It is crucial that parents give each of their children appropriate amounts of attention; several negative emotional and personality traits are associated with children who feel less favored than their siblings (Kiracofe, 1990). An understanding of the correlation between birth order and parental attention will help parents adjust their parenting techniques and maximize the development of each of their children.

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Table 1. Univariate correlation test results

Dependent Variable	Df	Mean Square	<i>F</i>	Significance
Total Attention Score	1	0.328	0.677	0.423
Birth Order Rank	2	0.465	0.959	0.404
Error	16	0.485		
Total	20			

Figure 1.
Survey

Survey of American Individuals in 2002

This survey is completely confidential. All of the responses will be anonymous and will only be used for this study. Please answer every question to the best of your ability. Please do not put your name on the answer sheet. If you have any questions, please ask.

1. What is your sex?
 - A. Male
 - B. Female
2. How old are you?
3. What ethnic background are you?
 - A. African America
 - B. Asian
 - C. Caucasian
 - D. Hispanic
 - E. Other
4. What is your socioeconomic status?
 - A. Upper class
 - B. Middle class
 - C. Lower class
5. What is your birth order within your immediate family?
 - A. Only child
 - B. Firstborn
 - C. Middleborn (if you are not firstborn, lastborn, or only child)
 - D. Lastborn
6. Are you a twin or another form of multiple birth?
 - A. Yes
 - B. No

7. What is the total number of children, including yourself, in your family?
8. Your mother is:
 - A. Living
 - B. Deceased
9. Your father is:
 - A. Living
 - B. Deceased
10. Do you reside with your parents?
 - A. Always
 - B. Sometimes
 - C. Never
11. Do all of your siblings reside with your parents?
 - A. Always
 - B. Sometimes
 - C. Never
12. In school, what grade are you in? (if in college, please label yourself according to your credit status as a college freshman, sophomore, junior, or senior)

Answer questions 13–15 by circling the appropriate measure from 0 to 5 (0 being none and 5 being maximum)

13. How much individual attention do you currently receive from your mother?
 - A. Positive attention 0 1 2 3 4 5
 - B. Negative attention 0 1 2 3 4 5
14. How much individual attention do you currently receive from your father?
 - A. Positive attention 0 1 2 3 4 5
 - B. Negative attention 0 1 2 3 4 5
15. How much attention do you currently receive from your sibling(s)?
 - A. Positive attention 0 1 2 3 4 5
 - B. Negative attention 0 1 2 3 4 5
16. Do you feel that you have lost attention from your parents as a result of having sibling(s)?
 - A. Yes
 - B. No
 - C. Uncertain
17. Has the amount of attention you receive from your mother increased or decreased over the past five years?
 - A. Increased
 - B. Decreased
 - C. Remained the same

18. Has the amount of attention you receive from your father increased or decreased over the past five years?
- A. Increased
 - B. Decreased
 - C. Remained the same
19. Do you feel that you received _____ from your mother in comparison with your siblings?
- A. More attention
 - B. Less attention
 - C. The same amount of attention
20. Do you feel that you received _____ from your father in comparison with your siblings?
- A. More attention
 - B. Less attention
 - C. The same amount of attention
21. What was your overall grade for the 2000–2001 school year?
- A. A
 - B. B
 - C. C
 - D. D
 - E. F
22. Do you consider yourself a(n) _____ student?
- A. Above average
 - B. Average
 - C. Below average
23. Does your mother help you with school work if necessary?
- A. Always
 - B. Sometimes
 - C. Never
24. Does your father help you with school work if necessary?
- A. Always
 - B. Sometimes
 - C. Never
25. Do your parents help your sibling(s) with their homework if necessary?
- A. Always
 - B. Sometimes
 - C. Never
26. If so, which sibling?
- A. Firstborn
 - B. Middleborn
 - C. Lastborn
 - D. All other siblings
 - E. Not applicable

- 27. Does your mother work outside of the home?
 - A. Yes
 - B. No

- 28. Does your father work outside of the home?
 - A. Yes
 - B. No

- 29. Do you work outside of the home?
 - A. Yes
 - B. No

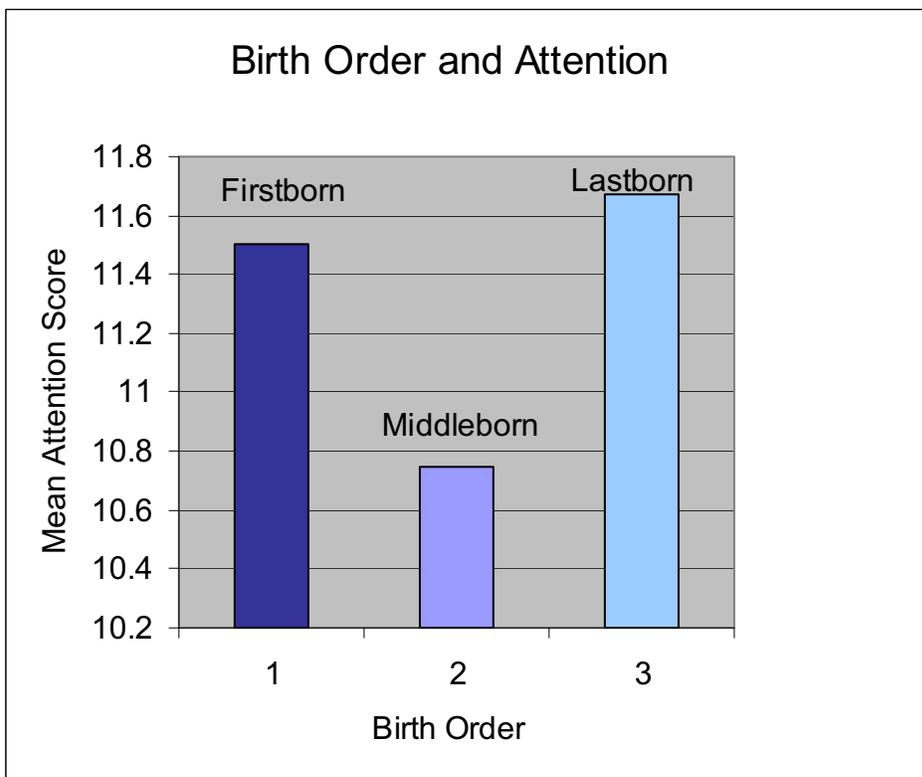


Figure 2. Mean attention score based on birth-order rank

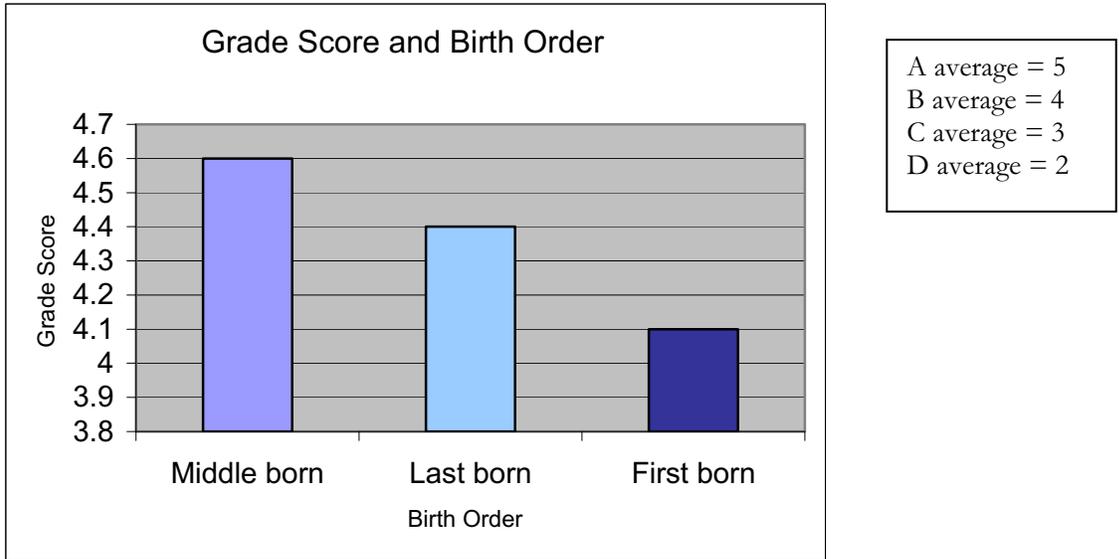


Figure 3. Mean score based on birth order

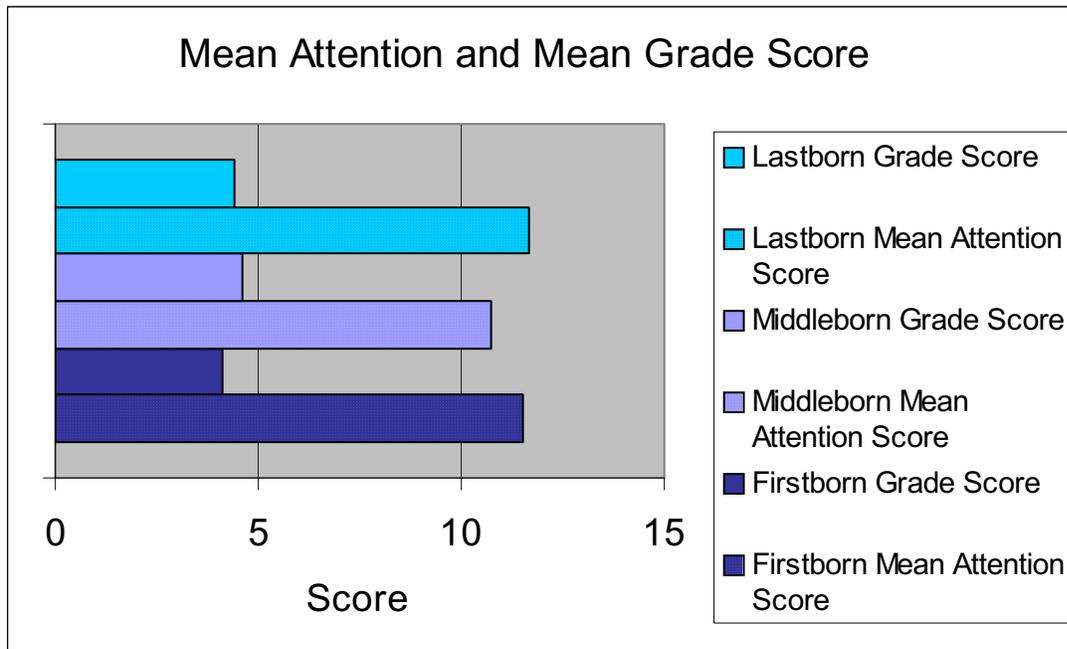


Figure 4. Mean attention and mean grade score.