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# The Effect of Birth Order Perceptions on the Evaluation of Personality

Emily E. Case  
*Northern Michigan University*

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THE EFFECT OF BIRTH ORDER PERCEPTIONS ON THE EVALUATION OF PERSONALITY

By

Emily E. Case

THESIS

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2011

BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

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ABSTRACT

THE EFFECT OF BIRTH ORDER PERCEPTIONS ON THE EVALUATION OF PERSONALITY

By

Emily E. Case

The effect that manipulating a hypothetical child's stated birth order has on evaluations of that child's personality was examined. The 239 undergraduates were asked to read a short description of a hypothetical child in which the child's birth order was implied as either oldest, middle, or youngest. Participants were then asked to evaluate that child's personality on 11 different dimensions used in a previous study on birth order perceptions (Herrera et al., 2003) in an extension of this previous research. Participants' evaluations of the child were not affected by the implied birth order of the child. This finding suggests that participants' evaluations of another individual may be biased only, or more heavily, when asked to directly consider the birth order of the individual being evaluated than when not specifically asked to take the birth order into account .

Keywords: birth order, birth rank, sibling status, stereotype, bias

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BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

To My Family,

With thanks for their continuous support and love.

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

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## INTRODUCTION

While stereotypes of birth order positions are common to popular culture, the majority of research on birth order positions has addressed actual rather than perceived differences between these positions (Ernst & Angst, 1983). Although there are thousands of studies examining actual differences found between the birth order positions, (Ernst & Angst, 1983) (alternatively labeled as sibling statuses or birth ranks) studies investigating perceptions of birth order positions are extremely limited, with only four publications covering this topic (Baskett, 1985; Musun-Miller, 1993; Nyman, 1995; Herrera, Zajonc, Wieczorkowska, & Cichomski, 2003). However, such research has the potential to be important. While overt discrimination against birth positions is not generally identified as a problem, stereotype threat is still present. If persistent stereotypes about these positions exist, many parties could benefit from being aware of these preconceptions. Parents could use this knowledge to actively avoid un-deserved favoritism, clinicians to avoid biases in diagnosis, and employers to avoid unfairly hiring or promoting one employee above another.

The existence of such stereotypes becomes evident in one study in which university undergraduates were asked what personality traits they would expect out of a typical first-born, youngest and only child (Baskett, 1985). The most commonly listed traits were then selected and paired with their opposite description (such as responsible with irresponsible) to create 50 pairs of traits. These traits were used to create a questionnaire featuring 50 adjective pairs, each on a seven point scale, in which the more favorable trait was presented at the high end of the scale. These questionnaires were then handed out to either parents of preschool children or participants enrolled in an undergraduate psychology course. The study found all sibling statuses tended to rate the first-born position in the most

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positive terms, and as being the most likely to be outgoing, obedient, and unspoiled. By contrast, youngest children were seen as likable, reserved, disobedient, and nonacademic. Only children were viewed as unlikable and spoiled. Only children and youngest children demonstrated a bias towards their own sibling group, while eldest children demonstrated a bias against their sibling group. However, all groups rated eldest children in the most positive terms. Parents gave more favorable ratings to each group than did non-parents, but maintained the finding of giving the highest ratings to the eldest children. There was no interaction between sibling status and parenthood. There was no correlation between responses and the sex of the rater.

While the aforementioned study addressed perceptions of first-borns, last-borns, and only children, it did not address stereotypes regarding middle-born children. This lack of data regarding perceptions of middle-born children was addressed by a study including the oldest, middle, youngest and only child birth positions. Participants in this study were asked to describe children of these birth positions of both sexes using three self-produced adjectives for each birth position (Nyman, 1995). After providing these adjectives, the subjects were asked to rate the favorability of these adjectives on an eleven-point scale. Results indicated that the eldest position was viewed in the most favorable terms, followed by the middle, youngest, and only positions respectively. Eldest children were described as dominant-aggressive, friendly, caring, responsible, independent, intelligent and ambitious. The eldest position was the only sibling order linked directly with leadership and the only birth order associated with few negative characteristics. The eldest female position was viewed as spoiled, nurturing and responsible. The eldest male position was viewed as spoiled, self-centered, dominant and independent. Middle-borns were viewed as sociable, thoughtful, responsible, independent, ambitious, neglected, confused, insecure and rebellious. Male middle children were viewed as dominant, open-minded, and irresponsible, whereas female middle children were viewed as intelligent. The youngest position had the fewest consistent positive adjectives - sociable and thoughtful. This position had a greater frequency of

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negative descriptions (when compared to the eldest and middle), including spoiled, dependent, irresponsible, immature and rebellious. Youngest males were also described as self-centered, lazy and insecure, while females were described as passive. The only child sibling status position was described as independent, ambitious, dominant, sociable, responsible, thoughtful, intelligent, self-centered, spoiled, alone, and dependent. Additionally, female only children were described shy and males as closed-minded and insecure. There were no differences found based on the sex or birth order of the rater.

While the previous research included data on perceptions of hypothetical children, it did not include stereotypes present in descriptions of actual children. In the first birth order perception study to include descriptions of actual children as well as hypothetical children (Musun-Miller, 1993), parents enrolled in undergraduate psychology courses were given the adjectives pairs used by Baskett (1985). Parents were asked to describe what they would expect of a typical eldest, youngest and only child. Parents were also asked to describe each of their children on the same scale. These separate requests were made one week apart, the order of the requests was counterbalanced. Under the hypothetical child condition, youngest children were seen as the most likable, and only children as the least likable. Only children were viewed as more outgoing and spoiled than youngest children. Youngest children were also viewed as the least obedient and least academic. In the actual child condition, eldest children were described in more positive terms than youngest children or only children, particularly in labeling them as less self-centered and less spoiled. The sex and birth order of the participants did not have an effect. Parents described their actual eldest and youngest children and hypothetical eldest and youngest children in similar ways. However, the parents of only children did not have a high degree of similarity between their descriptions of hypothetical only children and their actual children.

The most recent publication on birth order perceptions presents three separate studies covering beliefs about birth ranks (Herrera et al., 2003). In the first study, undergraduates who were

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predominantly non-parents were asked to describe what they would expect of an eldest, middle, youngest, only child. Additionally, they were surveyed on how they viewed themselves. All participants were given a 5-point scale and asked to indicate their expectations about the birth orders on the following aspects: agreeable-disagreeable, bold-timid, creative-uncreative, emotional-unemotional, not-envious-envious, extraverted- introverted, intelligent-unintelligent, obedient-disobedient, responsible-irresponsible, stable-unstable, and talkative-silent. Results indicated that participants viewed the eldest children as the most intelligent, responsible, obedient, stable, least emotional, and least creative, only children as the least agreeable, middle children as the most envious, least bold and least talkative, and last-borns as the most creative, emotional, extraverted, disobedient, irresponsible, and talkative. Additionally, participants rated their own birth order in the most positive terms. The second study (Herrera et al., 2003) focused on the expected occupations of first-born or last-born children. Participants and teachers at a high school in rural Wisconsin were given a list of 25 occupations, and asked whether they would expect an eldest child or a youngest child to hold such a position. All occupations were then ranked in prestige using the Standard International Occupational Prestige Scale (Treiman, 1977). Results indicated that first-borns were believed to be the most likely to hold occupations of higher prestige, while youngest children were viewed as the most likely to hold positions of lower prestige. The third study described (Herrera et al., 2003) replicated the aforementioned study, but in an urban setting. This study questioned undergraduates from Stanford University. The list of original occupations was narrowed to eleven occupations, and participants were again asked to indicate whether they would expect the position to be held by a first-born, or last-born. Results again indicated that the eldest children were viewed as the most likely to hold positions of higher prestige, and last-borns to hold positions of lower prestige.

While the above studies provide an excellent basis for further research, the relative scarcity of birth order stereotype research leads to many unanswered questions, and some conflicting data. Much

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research has yet to be done to see how generalizable results are across different populations. Additionally, the research by Baskett (1985) and Musun-Miller (1993) did not include data on perceptions of only children, and Herrera's second two studies did not include data on either middle children or only children. Conflicting data were found in the fact that Baskett (1985), and Herrera (2003) found biases towards or against one's own sibling status group, while Nyman (1995) and Musun-Miller (1993) found no biases. Finally, the current data is limited in that all participants were asked out-right to consider the birth order in their perceptions (with the exception of the own-children condition in the Musun-Miller (1993) ) thus it is impossible to determine if participants held any more subtle biases of which they were unaware. Current research does display a high degree of shared perceptions of the birth orders with first-borns being consistently viewed as obedient, responsible and intelligent, last-borns being viewed as likable, disobedient, non-academic, sociable, and irresponsible, while only children are viewed as unlikable and spoiled. No trends in the perception of middle children were shared throughout the studies. Additionally, an enduring trend to be biased towards the eldest position was found.

While the area of actual birth order differences is a popular area of study, it is marked by contradictory findings (Rubin, 1970). The possibility of researchers being biased towards their own birth order position was disconfirmed when a group of judges were asked to rank the results of 40 studies in terms of their favorability to each birth order position. These rankings were then compared to the researchers' birth order positions. Results indicated that first-born researchers were actually less likely than other birth order positions to have a favorable conclusion about first-borns, while only child and latter born researchers were no more likely to have researched a favorable conclusion about their birth order than any other researchers.

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One area of interest in the study of birth order differences is the birth order positions' interactions with family. Birth order is related to differences in the relationship of adult children and their mothers. In a study of 426 mothers and their 1,823 adult children, mothers reported being most emotionally attached to their youngest child, but most likely to look to their oldest child for emotional support (Suitor & Pillemer, 2007). Middle children were also much less likely than their older or youngest siblings to be named as either the favorite, or the one turned to for support. The spacing between siblings did not affect this difference. A subsequent study investigating contact with grandparents with regard to parents' birth orders revealed that children of middle-born parents have less contact with their grandparents (Salmon, 1998). The maternal care received by children may also be correlated with their birth order. In one study, 45 pairs of biological and adopted siblings were videotaped interacting with their mother in their homes at 24 months of age. Interaction included playing with a doll house provided by the investigators, and teaching the child to play a toy xylophone. No difference was found in the maternal affection or verbal responsiveness the mothers provided to the two siblings. While the level of "controlling behavior" exhibited by the mothers to their two children did differ significantly, the birth order of the siblings was not a significant factor in this behavior (Dunn, Plomin & Daniels, 1986). In another study preterm infants were observed at one, three and eight months after their expected due-dates. Infants were observed in their homes interacting with their mother. At one month post due-date, no difference was found in the maternal attention offered to infants, but by three and eight months, children with no older siblings were found to receive significantly more maternal attention (Cohen & Beckwith, 1977). Sibling relationships also have the potential to be related to birth orders. Although middle-borns are often cited as being the neglected sibling status, a study of 794 Dutch adults suggested that they have a relationship with their siblings and parents comparable to those of other birth positions in terms of preferring to spend time with a parent or sibling rather than a friend (Pollet & Nettle, 2009). In contrast to this finding, another study of 245

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undergraduates found that middle-born children were more likely as adults to have a less favorable view of their family and a more favorable view of friends than the oldest or youngest siblings did (Salmon, 2003)

Like family relations, the life choices, ideals, and ambitions between first and last-born children have been found to differ. First-born children tend to marry later, desire fewer children, and attain higher levels of education than their younger siblings (Davis, 1997). Additionally, oldest children were found to have the strongest interest in attaining high status positions, while each subsequent birth order position had a lessened interest in attaining higher status positions. One study found working class women are no less likely to graduate from college if they have an older sister, though they are less likely to do so if they have an older brother (Jacob, 2010), while another study found that oldest birth order positions were the most likely to complete higher education, and the most likely to receive family resources to help them do this (Booth & Kee, 2008). A child's birth order position may also correlate to his acceptance of parental ideals. In one study of 98 Israeli sons and their parents, a positive correlation was found between the first-born position and an agreement with the father's views on controversial topics, with this correlation weakening with every subsequent birth order. However, the reverse effect was seen with regard to the mother's beliefs, with the youngest child showing the strongest agreement (Kulik, 2004).

Another area of possible birth order differences is that of differences in the intellectual development of the birth orders. A controversial model of explaining the consistently higher intelligence scores of the older birth positions is provided in the confluence model (Zajonc, Markus, & Markus, 1979). The confluence model provides a formula for understanding these differences, claiming that a child's intellectual development will be aided or hindered by the "intellectual environment" of her household, and that this intellectual environment will be best if it is comprised of adults who have



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reached their full intellectual capabilities. Thus, according to the confluence model, the first child in a family is given the intellectual advantage, while subsequent children are increasingly disadvantaged. The spacing of children in the confluence model also comes into play, as younger siblings are at less of a disadvantage if their siblings are closer to adulthood, and thus able to contribute more intellectually to the child's environment. The confluence model also attributes an additional handicap to the youngest child. While some researchers have supported the confluence model, claiming that birth order differences in intelligence are mainly within-family effects (Berbaum & Moreland, 1980; Zajonc, Markus, Berbaum, Bargh, & Moreland, 1991; Zajonc, Markus, & Markus, 1979; Zajonc & Sulloway, 2007; Zajonc, 1983), others have argued that differences found in intelligence among birth orders are the results of differences between families, not of differences within families (Wichman, Rodgers, & MacCallum, 2006; Wichman, Rodgers, & MacCallum, 2007). The size of a family may also lead to birth order position differences being misrepresented. While first-born children are overrepresented among academically advanced students, much of this gap in advancement among the birth orders disappears when adjusted for family size (Parker, 1998). In one seven-year longitudinal study, 53,000 children were given Intelligence quotient exams at age four, and again at age seven. The birth order of these children, as well as the age spacing between children was noted. Results indicated that when socio-economic status was controlled for there was no correlation between birth order intervals and IQ, with exception of twins. Twin children were found to have a slightly lower IQ than their peers, although this difference was also found in children whose twins had died at birth, suggesting a prenatal cause for the slightly reduced IQ (Brackbill & Nichols, 1982). Birth order may also correlate with a difference in non-verbal IQ scores of children with autism (Spiker et al., 2001). In a study of 144 families with more than one child with autism, tests of non-verbal IQ found that second born children with autism were more likely to have a lower score than first-born children with autism, regardless of the differences in age of the siblings.

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While intellectual differences have been controversially linked with birth orders, the effects of birth order on non-IQ tests are even less conclusive. SAT scores are not significantly linked with birth order positions (Zajonc & Bargh, 1980) While female first-borns have a higher mean score on the Verbal Aptitude Test –a college entrance exam, no difference is found for the Mathematical Aptitude Test (Altus, 1965). Another study examining the spacing between children found that for females, sibling spacing, but not birth order was a predictor of college entrance scores (Rosenberg & Sutton-Smith, 1969). Additionally, oldest children may have a better memory for both recognition and recall as an adult than their younger siblings (Holmgren, Molander, & Nilsson, 2008).

The current study aimed to expand on the existing data by examining the effects that beliefs about birth ranks can have upon evaluations of personalities when the evaluator is not asked directly to take the birth order position into account. The researcher addressed the following research questions: What effect does claiming a child is of a particular birth rank have on evaluations of that child? Is there an interaction between the stated gender, birth rank and evaluation made of that child? Is there an interaction between the evaluations of the child and the gender of the participant and stated gender of the child? Is there an interaction between the birth order of the participant, the stated birth order of the child, and the evaluations of the child? Results are predicted to mirror those of previous research (Herrera et al., 2003), with eldest children being rated as the most intelligent, obedient, responsible and least emotional, the middle children being rated as the most envious, and youngest children being rated as the most extraverted and talkative, as well as the least obedient and responsible. Additionally, the researcher hypothesizes that participants will again be biased towards their own sibling status as in previous research (Herrera et al., 2003).

All participants were given one of six short descriptions of a hypothetical child. The six descriptions were identical with exception of the implied birth order and sex of the child, with all

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combinations of sex and first-born, middle-born and last-born status being used. The descriptions of the child were designed to provide no clear information on the child's personality in order to allow the ratings of her personality to be affected more by the designations of birth rank. After reading this description, the participants were asked to rate the child on the eleven different personality aspects used by Herrera et al., (2003); agreeableness, boldness, creativity, emotionality, enviousness, extroversion, intelligence, obedience, responsibility, stability, and talkativeness. A ten-point Likert-style scale was used to measure the participants' ratings. All surveys were administered online.

### **Pretest**

### **Method**

#### **Participants**

Participants were 20 (12 female, 7 male, 1 unknown) undergraduate participants (mean age = 21.35; range = 18-31 years) in a Behavior Analysis class at a mid-sized Northern Midwestern university. A total of 10 participants (50%) identified as the oldest child in their families, 5 participants (25%) as the youngest child, 1 student (5%) as the only child, and 4 participants (20%) as being somewhere in the middle of their siblings. Participants were recruited in class by the experimenter. The experimenter briefly invited the participants to participate in the pretest portion of the study. Participants were informed that the study would be comprised of an on-line description of a hypothetical child, and that they would read this description and then answer questions about the child, as well as answer several questions about themselves. Participants were informed that participation would take fifteen minutes or less. All participants were offered extra credit in their psychology class for accessing the survey online, whether or not they chose to complete it. Participants received the internet link to the survey through an email sent by the class's professor. The invitation was sent in the afternoon, and was available until midnight the next day. An additional person accessed, but did not take the survey.

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### Materials and Procedure

After receiving the link to the online survey, participants accessed and took the survey on their own time. Upon accessing the survey, an invitation page (see Table 1) was displayed, again informing participants that they would be presented with a hypothetical child, and then asked to give their assessment of that child's personality. Participants in the survey were then given a description of a hypothetical child, and told to read it carefully (see Appendix 2). The description of the child included information on the child's family, likes, dislikes, hobbies, desires, age, friends and the parents' view of that child. The child was not assigned a sex or name, and was referred to only as "the child" or "they". No information was given about the child's sibling status, beyond the statement that the child had two siblings. Participants had as long as they wished to read the description, but were unable to return to it after they indicated that they were ready to continue.

After reading the description, participants were asked to evaluate the child on 11 different traits, presented in the following order: disagreeableness versus agreeableness, timidity versus boldness, lack of creativity versus creativity, lack of emotionality versus emotionality, enviousness versus lack of enviousness, introversion versus extroversion, lack of intelligence versus intelligence, disobedience versus obedience, irresponsibility versus responsibility, instability versus stability and silence versus talkativeness (See Appendix 3). Evaluations were made using a 10-point Likert-style scale for each trait, with the first anchor point of each pair corresponding to a 1 on the Likert-style scale, and the second anchor point of each pair corresponding to the 10 on the Likert-style scale. Upon evaluating the child on a dimension, the student was presented with the next dimension, and was unable to return to the previous question.

After ranking the child on these 11 traits, the participants were then asked for their birth order, age, and sex (See APPENDIX 4). Participants were asked simply "What is your birth order?" rather than

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given a description of what would constitute each birth rank, thus allowing participants to view half-sibling, step-siblings, foster-siblings, or other family configurations in a manner consistent to how the participants normally view their siblings. Upon providing this information, participants who completed the survey were thanked for their participation, provided with the researcher's contact information, informed of the purpose of the study and provided with the link to the secondary survey asking for the student's name (See APPENDIX 5). The second survey asked only for the student's name. This secondary survey was used to ensure that participants could receive credit for taking the main survey without their names being matched to their answers. The class's professor was provided with the list of participants who completed this secondary survey in order to allow him to award these participants credit in their classes.

### **Results and Discussion**

Analysis of the pretest data focused on participants ratings of the hypothetical child's personality traits. Participants rated each trait on a one to ten scale. Results showed that participants viewed the hypothetical child to be agreeable (M= 7.10), bold (M= 6.80), creative (M= 6.95), emotional (M= 6.10), not envious (M= 5.55), extroverted (M= 6.10), intelligent (M= 7.35), obedient (6.90), responsible (M= 6.70), stable (M= 7.40), and talkative (M=6.45).

The data from this pretest were used to assure that the description being used in the study would not lead participants to rate the child as extreme on any given trait. An average score on any trait that fell to either extreme side of the Likert-style scale would indicate that the description provided would have to be modified for the main study in order to make analysis of the main study results more effective. Although the hypothetical child was given a mean rating above the central 5.5 for each trait, no single trait was given a mean rating above 8, or below 3. These data were determined to be within an

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acceptable range to allow for analysis, and no changes were made to the description between the pretest and the main study, other than the addition of information on the child's sex and birth order.

### **Main Study**

#### **Participants**

Participants were 239 (134 female, 103 male, 2 unknown) undergraduate students (mean age= 20.61 years; range= 18 years - 41 years). A total of 80 participants (33.47%) identified as the oldest child in their families, 81 participants (33.89%) as the youngest child, 21 participants (8.79%) as the only child, and 57 participants (23.85%) as being somewhere in the middle of their siblings. Participants in an undergraduate Introductory Psychology class at the same university as the pretest subjects were recruited by having their psychology laboratory instructor announce the study during their psychology laboratory time. Additionally, all participants in the class were sent an email through the online survey system, Qualtrics, providing a brief description of the study, and an invitation to participate. Due to a technical problem, some of the participants received blank emails. Participants who responded to the blank emails by sending a reply to the investigator were sent a new email with the link to the survey. Because the investigator was unable to know who had received blank emails, the laboratory instructors for the class sent out a second email re-inviting the participants to participate. Participants were informed that the study would be comprised of an on-line description of a hypothetical child, and that they should read this description, and then answer questions about the child. Participants were also informed that participation would take fifteen minutes or less. All participants were offered credit in their psychology class for accessing the survey on-line, regardless of their choice to complete or not complete the survey. Participants were given one week from the initial email to complete the survey. The criteria for including survey responses in the data analysis was failing to answer no more than three

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questions, and completing the survey within a fifteen minute timeframe; the data for 16 participants were excluded because of failure to meet these criteria.

Participants were randomly assigned to one of six conditions, in which the hypothetical child was the oldest female (39 participants), middle female (37 participants), youngest female (42 participants), oldest male (45 participants), middle male (38 participants), or youngest male (38 participants). Participants were randomly assigned to these conditions through the Qualtrics survey system. The decision to use random assignment rather than blocked assignment was made due to the limitations of the survey system.

### **Materials and Procedure**

After receiving the link to the online survey, participants accessed and took the survey on their own time. Upon accessing the survey, an invitation page (See Appendix 1) was displayed, again informing participants that they would be presented with a hypothetical child, and then asked to give their assessment of that child's personality. Participants who wished to participate in the survey were then given a description of a hypothetical child, and told to read it carefully. Participants had as long as they wished to read the description, but were unable to return to it after they indicated that they were ready to continue. Participants were then given one of six descriptions of a hypothetical child (See Appendices 6-11), and told to read it carefully. Each description was identical to the one used in the pretest, except that information was now provided on the child's sex and sibling status. The child was now labeled as a girl or boy, referred to as "she" or "he", and assigned the name of either Sarah or Kevin. The child was also said to be living with two older siblings, two younger siblings, or one older sibling and one younger sibling. Participants were randomly assigned to be in either the oldest female, middle female, youngest female, oldest male, middle male, or youngest male condition.

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After reading the description, participants were asked to evaluate the child on same 11 different traits as in the pretest. Evaluations were made using the same 10-point Likert-style scale that was used with the pretest. Upon evaluating the child on a dimension, the student was presented with the next dimension, and was unable to return to the previous question. After ranking the child on these 11 traits, the participants were asked for their birth order, age, and sex (See Appendix 4). Upon providing this information, participants who completed the survey were thanked for their participation, provided with the researchers' contact information, informed of the purpose of the study and provided with the link to the secondary survey asking for the student's name (See Appendix 12). The second survey asked only for the student's name and laboratory instructor. This secondary survey was used to ensure that participants could receive credit for taking the main survey without their names being matched to their answers. The classes' professor or laboratory instructors were provided with the list of participants who completed this secondary survey in order to allow them to award these participants credit in their classes.

### **Results**

Analysis of the data for the main study examined participants' condition assignment and their ratings of the hypothetical child on the study's 11 traits. Additionally, interactions between participants' sex, birth order, condition and trait were noted. A 6 x 2 x 4 x 11 mixed-model analysis of variance (ANOVA) was performed, revealing no significant effects. No main effect was found for condition  $F(5, 177) = 1.472, p = 0.201$ , participant birth order  $F(3, 177) = 1.619, p = 0.187$ , or participant sex  $F(2, 177) = 0.543, p = 0.582$ . Additionally, no significant interactions were found between participants' ratings, condition, participants' sex and participants' birth order (See Table 1). No significant effects were found when data were collapsed across sex.



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### Discussion

The study found no effect of birth order on the perception of personality. There are several possible reasons why no difference was found in the trait ranking based on birth order condition, including the possibility of limited sample sizes, participant disinterest, lack of birth order salience, the implication rather than statement of the child's birth order, the lack of a direct inquiry about birth rank, and the inclusion of information about the child not pertaining to birth order.

One possible factor is that the design of the experiment may not have allowed for this difference to be evident. The procedures used may have resulted in too small sample sizes for each condition, and thus a limited power. Future expansions of this study may increase power by not making statements or implications as to the child's sex. As with the pretest condition, the child could be referred to as "the child" or "they" in order to avoid having to present the child as a female or a male. This would result in participants being assigned to only one of three conditions (oldest child, middle child or youngest child) instead of the previous six conditions, doubling the possible sample size, and increasing power.

Another factor resulting from the design of the experiment that may have limited the effects of the birth order condition was the subjects' interest in the experiment. Subjects knew that they would receive credit for their participation in the survey regardless of the amount of time they spent taking it. It is possible that some subjects simply rushed to complete the task, skipping past the child description page without reading it carefully. The fact that the participants were also able to take the survey at any time within the week period may have also resulted in some participants taking the survey when they were not at their personal peak levels of attentiveness. Very late night or early morning participation may have resulted in a lack of focus on the survey. As the survey was not timed, participants may also have been performing other tasks as they were taking the survey, or stepped away from the survey to

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complete a different task, returning to the survey later. If participants were completing other tasks at the time of the survey, they may have lacked the attention necessary to read over the description carefully. The implied birth of the child may have lost salience in the case of stepping away from the survey and returning to it later. In any subsequent additions to this study, the investigator may consider asking participants bring their computers into the laboratory in order to take the survey in a more controlled setting, and to ideally add to the perceived prestige of the study, thus hopefully discouraging participants from rushing through the study.

There is also possibility that although birth order may alter perceptions of hypothetical individuals (Baskett, 1985; Musun-Miller, 1993; Nyman, 1995; Herrera, Zajonc, Wiczorkowska, & Cichomski, 2003), it may not alter these perceptions when it is implied rather than stated. The child in the descriptions was said to live at home with either two younger siblings, two older siblings, or one older and one younger sibling, but the child's birth order is never actually stated in order to mask the purpose of the study, and to better allow birth order stereotypes to be tested implicitly. The description of the youngest child allows for the possibility that the child has other younger siblings not mentioned, and the description of the oldest child allows for the possibility of unmentioned older siblings, such as those who have already left home. Thus only the middle child condition provides clear evidence of the child's birth order. Any future continuations on this study might choose to state the child's birth order outright.

Another potential factor may have been a lack of birth order salience provided by the description of the child. The child's birth order was implied only twice in the description, which may not have been enough to make the birth order salient to the participants.

Although birth order may, again, affect perception of a hypothetical individual (Baskett, 1985; Musun-Miller, 1993; Nyman, 1995; Herrera, Zajonc, Wiczorkowska, & Cichomski, 2003), it may not play

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

a role in altering these perceptions when individuals are not asked directly about the birth rank.

Previous studies on birth order perceptions have directly asked participants to give their perceptions of these birth orders. Knowledge of an individual's birth order may not produce such an effect when participants are not asked to directly consider this birth rank.

Finally, with exception of one study (Musun-Miller, 1993), previous research in the area of birth order perceptions has asked participants to evaluate an individual when the only information being provided about that individual was the individual's birth order. Such limited knowledge of an individual might cause participants to rely solely on their views on birth order, thus exaggerating their views of that individual.

While the current study found no effect of birth order on the perception of personality, sample sizes, levels of participant interest, birth order salience, the implication of the child's birth order, the absence of a direct inquiry about birth rank, and the inclusion of additional information about the child may have contributed to this lack of effect. Future studies will ideally address each of these factors, in order to further explore the possibility of birth order on the perception of personality.

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

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## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

You have been invited to participate in a research study. In this study you will be presented with a description of a hypothetical child, and asked to give your assessment of that child's personality. You will then be asked three questions about yourself. Participation in this study is completely voluntary. All information you provide will be averaged with other respondents, and only group results will be discussed, presented or published. You have the right to discontinue this survey at any point.

Any questions you have regarding the nature of this research project will be answered by Emily Case at [ecase@nmu.edu](mailto:ecase@nmu.edu) or Dr. Maya Sen, at [msen@nmu.edu](mailto:msen@nmu.edu). If you have any further questions regarding your rights as a participant in a research project, you may contact Dean Cynthia Prosen of the Institutional Review Board of Northern Michigan University, at [cprosen@nmu.edu](mailto:cprosen@nmu.edu) or (906) 227-2300.

Your decision to participate in this study is purely voluntary. If you do not want to participate, please stop the survey.

-I understand the above statement, and wish to participate in this research. I am at least 18 years of age.

-I do not wish to participate in this research, or am under the age of 18.

*Appendix 1. Pretest Invitation Page*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

**Please read the following scenario carefully. You will not be able to return to it once you click the "Next" button.**

There is a ten year old child in the fifth grade who lives at home with a mother, father and two siblings. The child's favorite subjects in school are math and reading, their least favorite subjects are science and English. The child enjoys school, but dislikes spending time on homework. The child is involved in soccer and piano lessons. Lately they have been spending extra time practicing these activities as they desire to be as skilled in these areas as their friends. In the fourth grade the child also enjoyed and was involved in softball and drama classes, but has since quit those activities. The child has a few close friends at school.

The child has been petitioning their parents to get them and their two siblings a pet dog. The child insists that they will take it for walks every day and is very excited about the idea of having a dog, but the child's parents are not certain that the child will really take the dog out for walks

*Appendix 2. Pretest Description*





BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

On a scale from 1-10 would you describe the child you just read about as:

	Unintelligent					Intelligent				
Unintelligent or Intelligent?	1	2	3	4	5	6	7	8	9	10

On a scale from 1-10 would you describe the child you just read about as:

	Disobedient					Obedient				
Disobedient or Obedient?	1	2	3	4	5	6	7	8	9	10

On a scale from 1-10 would you describe the child you just read about as:

	Irresponsible					Responsible				
Irresponsible or Responsible?	1	2	3	4	5	6	7	8	9	10

On a scale from 1-10 would you describe the child you just read about as:

	Unstable					Stable				
Unstable or Stable?	1	2	3	4	5	6	7	8	9	10

On a scale from 1-10 would you describe the child you just read about as:

	Silent					Talkative				
Silent or Talkative?	1	2	3	4	5	6	7	8	9	10

*Appendix 3. Trait Questions*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

What is your birth order?

- I am the oldest child.
- I am the youngest child.
- I am an only child.
- I am somewhere in the middle

What is your sex/gender?

- Female
- Male
- Prefer not to answer

How old are you?

*Appendix 4. Participant Data*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

Thank you for completing this survey. This survey was designed to determine how a specific description of a child would be evaluated when no information was provided about that child's sex or birth order. The results of this survey will be used to create a study testing the effect that information a child's birth order has on evaluations of that child. Please do not discuss this survey with members of any psychology course at Northern Michigan University.

Any questions you have regarding the nature of this research project will be answered by Emily Case at [ecase@nmu.edu](mailto:ecase@nmu.edu) or Dr. Maya Sen, at [msen@nmu.edu](mailto:msen@nmu.edu). If you have any further questions regarding your rights as a participant in a research project, you may contact Dean Cynthia Prosen of the Institutional Review Board of Northern Michigan University, at [cprosen@nmu.edu](mailto:cprosen@nmu.edu) or (906) 227-2300.

This study was approved by Northern Michigan University's Institutional Review Board (#HS10-326).

To receive credit, please access the following site, where you will be asked for your name. Your name will not be matched with the responses you have previously given:

*(Link omitted)*

*Appendix 5. Pretest Debriefing Page*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

**Please read the following scenario carefully. You will not be able to return to it once you click the "Next" button.**

Sarah is a ten year old girl in the fifth grade who lives at home with her mother, father and two older siblings. Her favorite subjects in school are math and reading, her least favorite subjects are science and English. She enjoys school, but dislikes spending time on homework. She is involved in soccer and piano lessons. Lately Sarah has been spending extra time practicing these activities as she desires to be as skilled in these areas as her friends. In the fourth grade she also enjoyed and was involved in softball and drama classes, but has since quit those activities. Sarah has a few close friends at school.

Sarah has been petitioning her parents to get her and her two older siblings a pet dog. Sarah insists that she will take it for walks every day and is very excited about the idea of having a dog, but her parents are not certain that she will really take the dog out for walks.

*Appendix 6. Female/Youngest Child Description*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

**Please read the following scenario carefully. You will not be able to return to it once you click the "Next" button.**

Sarah is a ten year old girl in the fifth grade who lives at home with her mother, father, older sibling and younger sibling. Her favorite subjects in school are math and reading, her least favorite subjects are science and English. She enjoys school, but dislikes spending time on homework. She is involved in soccer and piano lessons. Lately Sarah has been spending extra time practicing these activities as she desires to be as skilled in these areas as her friends. In the fourth grade she also enjoyed and was involved in softball and drama classes, but has since quit those activities. Sarah has a few close friends at school.

Sarah has been petitioning her parents to get her and her older sibling and younger sibling a pet dog. Sarah insists that she will take it for walks every day and is very excited about the idea of having a dog, but her parents are not certain that she will really take the dog out for walks.

*Appendix 7. Female/ Middle Child Description*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

**Please read the following scenario carefully. You will not be able to return to it once you click the "Next" button.**

Sarah is a ten year old girl in the fifth grade who lives at home with her mother, father and two younger siblings. Her favorite subjects in school are math and reading, her least favorite subjects are science and English. She enjoys school, but dislikes spending time on homework. She is involved in soccer and piano lessons. Lately Sarah has been spending extra time practicing these activities as she desires to be as skilled in these areas as her friends. In the fourth grade she also enjoyed and was involved in softball and drama classes, but has since quit those activities. Sarah has a few close friends at school.

Sarah has been petitioning her parents to get her and her two younger siblings a pet dog. Sarah insists that she will take it for walks every day and is very excited about the idea of having a dog, but her parents are not certain that she will really take the dog out for walks.

*Appendix 8. Female/Oldest Child Description*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

**Please read the following scenario carefully. You will not be able to return to it once you click the "Next" button.**

Kevin is a ten year old boy in the fifth grade who lives at home with his mother, father and two older siblings. His favorite subjects in school are math and reading, his least favorite subjects are science and English. He enjoys school, but dislikes spending time on homework. He is involved in soccer and piano lessons. Lately Kevin has been spending extra time practicing these activities as he desires to be as skilled in these areas as his friends. In the fourth grade he also enjoyed and was involved in softball and drama classes, but has since quit those activities. Kevin has a few close friends at school.

Kevin has been petitioning his parents to get him and his two older siblings a pet dog. Kevin insists that he will take it for walks every day and is very excited about the idea of having a dog, but his parents are not certain that he will really take the dog out for walks.

*Appendix 9. Male/Youngest Child Description*



## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

**Please read the following scenario carefully. You will not be able to return to it once you click the "Next" button.**

Kevin is a ten year old boy in the fifth grade who lives at home with his mother, father, older sibling and younger sibling. His favorite subjects in school are math and reading, his least favorite subjects are science and English. He enjoys school, but dislikes spending time on homework. He is involved in soccer and piano lessons. Lately Kevin has been spending extra time practicing these activities as he desires to be as skilled in these areas as his friends. In the fourth grade he also enjoyed and was involved in softball and drama classes, but has since quit those activities. Kevin has a few close friends at school.

Kevin has been petitioning his parents to get him and his older sibling and younger sibling a pet dog. Kevin insists that he will take it for walks every day and is very excited about the idea of having a dog, but his parents are not certain that he will really take the dog out for walks.

*Appendix 10. Male/Middle Child Description*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

**Please read the following scenario carefully. You will not be able to return to it once you click the "Next" button.**

Kevin is a ten year old boy in the fifth grade who lives at home with his mother, father and two younger siblings. His favorite subjects in school are math and reading, his least favorite subjects are science and English. He enjoys school, but dislikes spending time on homework. He is involved in soccer and piano lessons. Lately Kevin has been spending extra time practicing these activities as he desires to be as skilled in these areas as his friends. In the fourth grade he also enjoyed and was involved in softball and drama classes, but has since quit those activities. Kevin has a few close friends at school.

Kevin has been petitioning his parents to get him and his two younger siblings a pet dog. Kevin insists that he will take it for walks every day and is very excited about the idea of having a dog, but his parents are not certain that he will really take the dog out for walks.

*Appendix 11. Male/Oldest Child Description*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

Thank you for completing this survey. This survey was designed to examine the impact that knowledge of a child's birth order has on evaluations of that child. Please do not discuss this survey with members of any psychology course at Northern Michigan University.

Any questions you have regarding the nature of this research project will be answered by Emily Case at [ecase@nmu.edu](mailto:ecase@nmu.edu) or Dr. Maya Sen, at [msen@nmu.edu](mailto:msen@nmu.edu). If you have any further questions regarding your rights as a participant in a research project, you may contact Dean Cynthia Prosen of the Institutional Review Board of Northern Michigan University, at [cprosen@nmu.edu](mailto:cprosen@nmu.edu) or (906) 227-2300.

This study was approved by Northern Michigan University's Institutional Review Board (#HS10-326).

To receive credit, please access the following site, where you will be asked for your name and laboratory instructor. Your name will not be matched with the responses you have previously given:

*(Link Omitted)*

*Appendix 12. Main Study Debriefing Page*

## BIRTH ORDER PERCEPTIONS AND PERSONALITY EVALUATION

Table 1. Tests of Between-Subjects Effects

### Tests of Between-Subjects Effects

	df	F	Sig
Condition	5	1.472	0.201
Sex of Participant	2	0.543	0.582
Birth Order of Participant	3	1.619	0.187
Condition * Sex of Participant	5	0.974	0.435
Condition * Birth Order of Participant	15	0.758	0.722
Sex of Participant * Birth Order of Participant	3	2.172	0.093
Condition * Sex of Participant * Birth Order of Participant	13	1.537	0.108
Error	177		