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Birth Order and Locus of Control

Adler (1929, as cited in Ansbacher & Ansbacher, 1956) proposed the idea that birth order contributes to the later development of personality. Rotter (1966) developed the Internal/External (I/E) Control Scale, which measures an individual's locus of control. He found that internally controlled individuals felt more responsible for their life circumstances, whereas externally controlled individuals felt they were controlled by luck or fate (Engler, 1999). Studies have indicated a possible relationship between birth order and locus of control, but the results have been mixed (Walter & Ziegler, 1980). Researchers administered the I/E Control Scale to participants. In addition, demographic information was acquired including birth order. Research findings indicated that individuals occupying the "firstborn" position were not more likely to possess an internal locus of control, as compared to children occupying the position of "laterborn."

SINCE THE EARLY DEVELOPMENT OF PSYCHOLOGY as a scientific discipline, personality theorists have researched ways to predict personal attributes and the way that these attributes contribute to interactions with the environment. Adler (1929, as cited in Ansbacher & Ansbacher, 1956) proposed the idea that birth order contributes to the later development of personality. He believed that *firstborn* children (i.e., individuals who were the first children born living to the parents, or adopted by the parents) would have more motivation, be better students, assume more leadership roles, and associate more with others than children who were born or adopted later within that same family. *Laterborns* (i.e., individuals who were born or adopted into a family with a previous child/children) were thought to exhibit different personality traits, and some were believed to display more dependence than firstborn children. Rotter (1966) developed the Internal/External Control Scale, which measures an individual's perception of locus of control. He found that internally controlled individuals (i.e., those who believe that most occurrences in daily life are controlled by one's own behavior) felt more responsible for their life circumstances, whereas externally controlled individuals

(i.e., those who believe that most occurrences in daily life are controlled by outside forces) felt that they were controlled by luck, fate, or other people (Engler, 1999).

Researchers have investigated a possible relationship between locus of control and birth order. However, the results of the studies have conflicting conclusions. Several studies have concluded that because of additional social pressures experienced by firstborns, they exhibit more dependence and responsibility (Eisenman & Platt, 1968; Moore & Cox, 1990; Moran, 1967; Warren, 1966). Other researchers have suggested that earlier born children were

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somewhat more internally oriented than laterborn children (Crandall, Katkovsky, & Crandall, 1965). Additionally, studies suggest that firstborn children develop a more external locus of control due to the fact that they receive more parental attention, and then must compete with laterborn siblings to maintain the same level of attention (Eisenman, 1992; Lasko, 1954; Sears, 1950).

Explanations for the inconsistencies in results have been attributed to such things as varied family size, not distinguishing between middleborns and lastborns, and the ages of the participants. An example is Walter and Ziegler (1980), who looked at 9-year-old elementary school students, and Fraser and Nystul (1983), who surveyed undergraduate psychology students. These age differences could have contributed to the varied results.

Studying locus of control is important because having an internal locus of control has been found to positively impact an individual's ability to deal with setbacks (Myers, 1999). Also, those with internal locus of control have been found to have greater mastery tendencies, better problem-solving abilities, and more likelihood of achievement (Agarwal & Misra, 1986).

This study examined the relationship between birth order and locus of control. It was hypothesized that individuals occupying the firstborn position in the family would be more likely to possess an internal locus of control, as compared to children occupying the position of laterborn. This study also examined any differences regarding age and locus of control. This topic is important because if a link were discovered, it would support the Adlerian theory of birth order as well as provide insight into the psychological influences of birth order upon individuals.

Method

Measure Design

This study used a self-report questionnaire, which consisted of Rotter's (1966) 29-item Internal/External Control Scale and a basic demographic page. The demographic page acquired information such as gender, age, program affiliation, and birth order. This study looked at descriptive and *t* distribution aspects of the questionnaire. The independent variables in the study were the birth order positions, firstborn and laterborn. The dependent variable was the personality score of the participant, as measured by Rotter's (1966) Internal/External Control Scale.

Participants

In total, 154 undergraduate and graduate students, 10 faculty, and 5 staff members of Bastyr Uni-

versity, a school of naturopathic medicine in Western Washington, responded to our survey distributed schoolwide in student and faculty mailboxes during the winter quarter of 2001. The total number of surveys received was 169. There were a total of 131 female participants, 35 male participants, and 3 who did not specify their sex. The ages of the participants ranged from 19 to 54, with a mean age of 31 years.

Materials

Approximately 1,100 copies of our survey entitled "Birth Order and Personal Beliefs" were distributed to all student and faculty mailboxes on the Bastyr University campus. The survey consisted of two parts. The first part of the survey included a brief statement at the top of the page, which outlined the purpose, risks, and benefits of the study. Additionally, information regarding confidentiality and voluntary participation was provided. The first section also included five demographic questions about gender, age, program affiliation, status (i.e. student, faculty, or staff), and birth order.

To obtain birth order information, participants were asked one question regarding what position they held in their family birth order compared to all the children raised with them in their household as they were growing up. This was done to allow for the inclusion of such factors as stepsiblings, deceased siblings, and multiple-birth siblings. Individuals who specified they were only children were excluded from the sample because of the small number of responses. They were also excluded due to the inconclusive evidence available, as reported by Phares (1976) and Eisenman (1992), with regard to what position assignment they actually held. The question is still unresolved as to whether only children should be excluded as a category or included with firstborns.

Following the demographic information there were instructions on how to complete the Personal Beliefs Scale, referred to earlier as the Rotter Internal/External Control Scale. The title of the scale was changed to disguise the research hypothesis from the participants.

The second part of the survey consisted of the Internal/External Control Scale. The scale is a 29-item dichotomous assessment that measures locus of control. Twenty-three of the items actually measure locus of control, whereas six are filler items that are designed to disguise the purpose of the questionnaire. A total of two purple drop boxes were made available for completed questionnaires, one box available in each mailroom. Each box was labeled "Birth Order Survey." SPSS 10.0 computer software was used to analyze the data.

Procedure

Data collection occurred through the distribution of surveys to all available student and faculty mailboxes. This method of data collection was used to reduce experimenter bias; thus, participants were not approached, but rather participated voluntarily based on their own interest. A brief statement at the top of the first page of each survey outlined the purpose, risk, and benefits of taking the survey, and also contained information regarding confidentiality and voluntary participation. In addition, a statement informed participants that by choosing to complete the survey, they gave permission to use their questionnaire for data analysis. Instructions for completing the Internal/External Control Scale specified to participants to select the one statement from each pair of answers in each question that they more strongly believed to be true. Participants were also instructed not to spend too much time on any one item, and were informed that in many instances they might find that they believe both statements or neither one. They were instructed to select the one answer they most strongly believed.

Surveys were distributed at the beginning of the week, and each specified the date when the completed surveys were due in the provided purple drop boxes labeled "Birth Order Survey." Surveys were then picked up the following week. The estimated time it took to complete the survey was approximately 10 min for each person. In scoring the Internal/External Control Scale, participants were given one point for each answer chosen that held an external value. An example of a question is "Many unhappy things in people's lives are partly due to bad luck." The highest possible external score available on the survey was 23.

Results

It was predicted that individuals occupying the firstborn position in the family would be more likely to possess an internal locus of control, as compared to children occupying the position of laterborn. This hypothesis was tested using a *t* test to compare the mean scores of locus of control with firstborns ($n = 64$) versus laterborns ($n = 88$). The results showed that firstborns had a mean locus of control score of 9.73 ($SD = 4.19$), whereas laterborns had a reported mean score of 8.98 ($SD = 3.83$). An alpha level of .05 was used for all statistical tests. The *t* test was not significant $t(148) = 1.142, p = .255$. The results showed that there was no statistically significant difference between firstborns and laterborns in their mean internal score of locus of control. Both groups scored in the internal direction.

A correlational test was also conducted to examine the relationship between age and the total locus of control score. The results showed that there was a negative correlation between variables, $r(164) = -.231, p = .003$, indicating age may be related to a person's internal or external locus of control score.

Discussion

As indicated in the Results section, the analysis of the data indicated no statistically significant differences between firstborns and laterborns regarding locus of control. In fact, the data indicated that participants tended toward an internal locus of control, regardless of birth order. Several different factors may have affected our study results.

The most obvious influential factor is the fact that the research was conducted in a university of the natural health sciences. Therefore, most of the participants may have very similar core beliefs as compared to the general population. For example, the researchers believe that most individuals at Bastyr University would have more favorable opinions of complementary medicine than one would find in the students, faculty, and staff of a more traditional school, who may not have had the same exposure to concepts that are studied at Bastyr. The outcome of the study may have been influenced by the views and biases that the Bastyr community shares.

Also, the researchers found that many individuals who completed the survey indicated displeasure with the testing instrument we used. Many participants changed the wording of several statements, or added statements of their own that indicated an alternative view of why events occur. Many members of the Bastyr community believe in the concept of *karma*, which can be defined as getting from the universe what one invests in it. An individual who believes that karma is a universal law may be frustrated, for example, by the statements that comprise the second question of the survey: "Many of the unhappy things in people's lives are partly due to bad luck" and "People's misfortunes result from the mistakes they make." Many people today may feel that people's misfortunes are influenced by the decisions that they make, and the karmic repercussions these decisions cause. This type of reading of the statements seemed to cause difficulty for some participants. For example, one student wrote on the survey, "The soul is in control." The researchers understood this to mean that the individual felt that although they have control of decisions and actions, those decisions and actions have far-reaching, universal consequences. The Rotter Internal/External Control Scale was written in the 1960s, and therefore it may be antiquated.

Although approximately 1,100 surveys were distributed, only 169 (15%) were returned. This low return rate could have had an influence on the results. Because survey participation was voluntary, and a convenience sample was obtained from college students, the responses might have contained sampling biases, which occur commonly in survey research. Leary (1995) states that volunteers have a tendency to vary in systematic ways from students who choose not to volunteer. Bell (1962) reports that volunteers are likely to be more unconventional, more self-confident, more extroverted, and higher in need for achievement. Leary (1995) also suggests that college students tend to be more intelligent and hold more liberal attitudes compared to the general population.

Perhaps people who took the time to complete the survey were those with a stronger internal locus of control. There is a possibility that externally focused individuals didn't bother to complete the survey because they may have thought that their contribution wouldn't make much of a difference. Studies also suggest that internally focused individuals are more motivated to complete tasks (Angelini, 1967; Phares, 1976; Rosen, 1961).

Possibly another limitation was the distribution method. Although we probably obtained more responses than we would have by recruiting participants individually, this method prevented us from personally explaining to each participant how to complete the Rotter Internal/External Control Scale. The researchers would have preferred to be able to stress the fact that participants may have believed both statements or neither one, and that the participant should select the one they more strongly believed to be the case. Although this was explicitly detailed in the instructions, there were indications that a sizeable number of the participants did not read the directions, or at least did not understand them. Many surveys were received in which participants wrote, "I believe both," or "I don't believe either one," or "It depends on the situation." Surveys were also received in which the wording of the statements was changed, or altogether new statements were added and circled.

Also discovered were several questions that stood out as the most frequently unanswered. The one question that was left blank the most was Question 25. The statements that comprise this question are: "Many times I feel that I have little influence over the things that happen to me" and "It is impossible for me to believe that chance or luck plays an important role in my life." Nineteen participants did not complete this question.

Other frequently unanswered questions were #5 ("The idea that teachers are unfair to students is

nonsense"; "Most students don't realize the extent to which their grades are influenced by accidental happenings"), #20 ("It is hard to know whether or not a person really likes you"; "How many friends you have depends on how nice a person you are") and #26 ("People are lonely because they don't try to be friendly"; "There's not much use in trying too hard to please people, if they like you, they like you"). The rates of incompleteness on these questions ranged from 9 to 13 participants. The researchers were unable to determine why these questions were the most frequently unanswered.

Regardless of the limitations of the survey, the researchers feel that invaluable experience was gained by developing a survey, administering it, and analyzing the data collected using statistical software. The researchers are still interested in the subject of birth order and its possible influence on personality. As evidenced by the references, research on birth order and personality has periodically been reawakened and then abandoned by the scientific community. Claxton (1994) believes this is partially due to the revival of the nature-versus-nurture debate and partially due to inconsistent findings. Little empirical research has been conducted on the direct effects of birth order on personality in many years, and future research would be beneficial.

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