

Birth Order and Personality Traits: Relationships and Methodology

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Abstract

The purpose of this study was twofold: first, to test Sulloway's (1996) predictions about the relationship between birth order and personality, and second, to examine the effects of different birth-order categorization methods. Thai nationals ($n = 246$ including only children, $n = 215$ excluding only children) completed a birth-order questionnaire and a 28-item personality measure. When participants were categorized in the method recommended by Sulloway (laterborns versus firstborns, excluding only children), our results confirmed two of Sulloway's predictions, but one finding directly contradicted his predictions, and many of his other predictions were not supported. We found even less support for Sulloway's theory when different birth-order categorization methods were used. When laterborns were divided into middleborns and lastborn, some of the findings were congruent with Sulloway's theory: firstborns were different from middleborns on three personality variables; however, lastborn children were not significantly different from either firstborns or middleborns, contradicting Sulloway's predictions. As well, when an only-child category was added into the analyses, the results changed dramatically: first, only children were significantly different from children with siblings on several personality variables; second, middleborns were different from both only children and firstborns on several personality variables; and third lastborn children were not significantly different from either firstborns or middleborns on any of the variables. This last finding directly contradicts Sulloway's predictions. Thus, the method of categorizing siblings and the inclusion or exclusion of only children has a substantial impact on the results found. We recommend that all children be included in future analyses and that the finest possible divisions between birth orders be made. Thus, this study has not provided much support for Sulloway's theory, but if researchers incorporate a more detailed categorization scheme this may reconcile the contradictory findings in past research.

Introduction

It has become clear that genes play a vital role in the formation of an individual's personality traits, determining approximately 50% of each person's personality (Harris, 1998; Plomin, 1989; Plomin & Daniels, 1987). The other half must therefore come from the environment. One environmental factor that has been the source of much contention is birth order. Thousands of studies have focused on the relationship between birth order and personality, and results have been mixed at best (see e.g., Ernst & Angst, 1983; Beer & Horn, 2000). Many studies found specific connections (Abernethy, 1940; Baskett, 1985; Herrera, Zajonc, Wiczkorkowska, & Cichomski, 2003) while others found no relationship at all (Crozier & Birdsey, 2003; Harris & Morrow, 1992; Jefferson, Herbst, & McCrae, 1998, Study 1; Parker, 1998). Researchers often attribute significant findings to differences in parental treatment among birth positions (Lasko, 1954) and/or different interactions each birth position experiences relative to other positions (Abramovitch, Corter, Pepler, & Stanhope, 1986). Frank Sulloway (1996) suggests that these explanations reflect a larger evolutionary phenomenon. He contends that because of age and physical differences, siblings struggle for power and parental favor in different ways, ultimately developing specific firstborn and laterborn strategies. These strategies influence children's personality traits.

Sulloway's (1996) theory and findings from his own study suggest that firstborns learn to identify with their parents' authority and conform to parental norms. Laterborns, however, utilize alternative, usually more rebellious, strategies to overcome the inherent vulnerability of being a younger sibling. As a result, according to Sulloway, firstborns tend to be more Conscientious, Extraverted, and Neurotic, while laterborns tend to be more Open to Experience and Agreeable. Sulloway estimated that these personality domains could correlate as high as .40 for Openness to Experience, .35 for Conscientiousness, .30 for Agreeableness, .20 for Neuroticism, and .10 for Extraversion. Specifically, Sulloway predicts that firstborns will be more traditional, assertive, antagonistic, tough-minded, anxious, angry, vengeful, fearful, dominant, ambitious, conservative, jealous, aggressive, conventional, careful, reliable and well-organized. In contrast, laterborns will tend to be more liberal, flexible, creative, imaginative, unconventional, rebellious, adventurous, empathetic, altruistic, mellow, tenderminded, warm, risk-taking, cooperative, and selfless.

Other research provides mixed support for Sulloway's theory. Recent studies found that firstborns are more Conscientious (Beer & Horn, 2000; Paulhus, Trapnell, & Chen, 1999; Saroglou & Fiasse, 2003), and that laterborns are more Agreeable (Jefferson, Herbst, & McCrae, 1998; Michalski & Shackelford, 2002; Paulhus et al., 1999) and Open to Experience (Jefferson et al., 1998). For specific traits, laterborns have been found to be more altruistic (Jefferson et al., 1998; Saroglou & Fiasse, 2003), rebellious (Paulhus et al., 1999), tenderminded (Jefferson et al., 1998), and liberal (Paulhus et al., 1999). Many recent studies, however, have found no significant relationships (Freese, Powell, & Steelman, 1999; Jefferson et al., 1998; Parker, 1998; Phillips, 1998). Furthermore, the findings of some studies contradict Sulloway's predictions (Jefferson et al., 1998; Michalski & Shackelford 2002). This study is intended to further test Sulloway's theory to clarify these mixed results.

It is noteworthy that Sulloway's research and much of the research conducted to test his theory focuses on a dichotomy between firstborns and laterborns. Grouping all laterborn children together in this way may hide specific relationships between middleborns and certain personality traits (Saroglou & Fiasse, 2003). Also, Sulloway's analyses exclude only children altogether. Yet, only children have been a major part of other birth-order research (Alder, 1927; Roberts, 1998), and findings about only children may be as important and useful as findings about firstborns and laterborns, considering the trend toward having fewer and fewer children. Hence, the second purpose of this study is to examine whether classification methods influence results.

Method

Participants

In total, 246 people (98 males, 148 females) who grew up in Thailand and have lived in Thailand all their lives volunteered to participate in this study. Their ages ranged from 12 to 57 years (mean 26.0, standard deviation 9.4).

Design

The demographic/birth-order questionnaire asked participants whether they were the only, lastborn, firstborn, or middleborn, as well as sex and age. The Big-Five Personality Measure (Gosling, Rentfrow, & Swann, 2002) listed 28 different personality traits. For each, participants responded using a 9-point scale, with 0 "not at all like me" and 8 "completely like me."

The two questionnaires were first compiled in English and then translated into Thai by a bilingual Thai with a Master's Degree in English Language. Another bilingual Thai then translated them back into English. Appropriate alterations were then made. All participants completed the questionnaires in Thai.

Data Analysis

Each participant was classified as being a firstborn, middleborn, lastborn, or only child, based upon their responses to the self-report question. Participants were then further classified as laterborn if they were either middleborn or lastborn.

Based upon these categories, data were analyzed using four different classification methods. First, firstborn and laterborn groups were compared. Second, firstborn, middleborn, and lastborn were compared. Third, lastborn, firstborn, laterborn, and only children were compared. Finally, the most inclusive and detailed analysis was conducted: firstborn, middleborn, lastborn, and only children were compared. For each classification method, one-way

ANOVA's were used to compare the means of the groups, for each of the 28 personality traits. Significant findings were examined in further detail using Tukey's Honestly Significant Difference post hoc test.

Results

Firstborn and Laterborn

There were three significant differences between the two birth-order groups in terms of personality traits (see Table 1). Firstborns score significantly higher than laterborns on Emotional ($F(215) = 5.13, p < .05$), Dependable ($F(215) = 4.41, p < .05$), and Uncreative ($F(215) = 4.06, p < .05$). The finding that firstborns score higher on Dependable and Uncreative confirms Sulloway's predictions; however, the finding that firstborns score higher on Emotional directly contradicts Sulloway's prediction. Furthermore, many other significant relationships that Sulloway predicted – Conscientiousness, Openness to Experience, and Rebelliousness – were not found. Hence, these results provide little support for Sulloway's evolutionary theory of birthorder's influence on personality.

Firstborn, Middleborn, and Lastborn

There were three significant differences between the three birth-order positions: Emotional ($F(215) = 4.15, p < .05$), Dependable ($F(215) = 4.10, p < .05$), and Reserved ($F(215) = 3.68, p < .05$). Post hoc testing using Tukey's Honest Significant Difference Test (HSD) revealed that for all three variables, firstborns score significantly higher than middleborns. However, there were no significant differences between the lastborn and either the middle or firstborn (see Table 2).

Importantly, when the laterborn group was split into a middleborn group and a lastborn group, the personality trait of Uncreative was no longer significant, but Reserved was now significant, revealing how sensitive the results are to changing classification methods. Also, it is noteworthy that all three significant differences were between firstborns and middleborns, and did not involve lastborn. These findings suggest that differences found when using the firstborn-laterborn classification may actually be hiding more specific results: differences between firstborns and middleborns.

Firstborn, Laterborn, and Only Children

There were four significant differences: Dependable ($F(246) = 3.78, p < .05$), Complex ($F(246) = 7.02, p < .05$), Careless ($F(246) = 5.43, p < .05$), and Uncreative ($F(246) = 8.13, p < .05$). Tukey's HSD showed that for Dependable, only children score significantly higher than laterborn children. For Complex, Careless, and Uncreative, Tukey's HSD revealed that only children score significantly higher than both firstborns and laterborns (see Table 3).

Hence, incorporating only children into the analysis substantially changed the findings. None of the significant differences from the firstborn-laterborn classification were still significant. Instead, there were four significant findings involving only children. Thus it appears that only children are the most distinct of the birth-order positions.

First, Middle, Lastborn, and Only Child

There were five significant differences: Emotional ($F(246) = 2.95, p < .05$), Dependable ($F(246) = 3.79, p < .05$), Complex ($F(246) = 5.46, p < .05$), Careless ($F(246) = 4.36, p < .05$), and Uncreative ($F(246) = 5.40, p < .05$). Tukey's HSD revealed that for Emotional, firstborns score significantly higher than middleborns. For Dependable, both only children and firstborns score significantly higher than middleborns. For both Complex and Uncreative, only children score significantly higher than both middleborns and lastborn. For Careless, only children score significantly higher than middleborns (see Table 4).

Compared to the other classification methods, this classification scheme was the most detailed and most inclusive, including all people in the analyses, and making the finest possible distinctions between their birth orders. This method had the most significant findings. All five of the significant findings show a difference between middleborns and some other birth-order position. This demonstrates how important it is to distinguish between middleborn and lastborn children, rather than grouping middleborns with other children in a laterborn category. Four of the five significant findings exist between only children and some other birth-order position, demonstrating the distinctiveness of only children and the importance of including them in birth order studies. Overall, these results suggest that the two most distinctive birth-order positions are only children and middleborns.

General Discussion

The first objective of this study was to test Sulloway's predictions and add to the body of research that already exists on the relationship between birth order and personality. Using Sulloway's classification method (comparing firstborns and laterborns), we found three significant findings, two of which matched Sulloway's predictions. However many of his other predictions were not supported: Conscientiousness, Openness to Experience, and Rebelliousness did not have significant differences between firstborn and laterborn children, despite the relatively large sample size that should have assured relatively high power. Furthermore, firstborns scored significantly higher on Emotional, contradicting Sulloway's prediction.

It could be that the reason for the differences between our study and Sulloway's is that our study was conducted in Thailand with Thai nationals, whereas Sulloway's was conducted in Western cultures. Because families raise children differently in different cultures, we would expect birth-order effects to be different in different cultures. This, of course, would argue against Sulloway's claim that birth order effects are largely due to evolutionary forces.

The second objective of this study was to determine whether classification methods influence results of birth-order research. The remarkably different findings from the four classification methods demonstrates that classification methodology has a major influence on birth-order research results. Specifically, failing to separate laterborns into a middleborn and a youngest group leads to overgeneralizations about all laterborn children, since middleborns differ from firstborns and youngest do not. Also, failing to include only children in the analyses hides significant differences between children with siblings and ones without them, an issue of increasing importance in light of the current trend toward single-child families. Hence, these results indicate that any future birth-order research should use a classification method that separates laterborns into a middleborn group and a youngest group, and also includes only children in the analyses. This is the only classification system that includes all people, and is the most detailed classification system that is likely to be practical.

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Table 1
Firstborn and laterborn classification

Trait	Firstborn	Laterborn	F	p
Independent	6.49	6.47	0.02	.90
Emotional	5.09	4.47	5.13	.03
Assertive	5.01	5.35	1.90	.17
Sensitive	5.32	4.88	2.31	.13
Competitive	4.59	4.35	0.65	.42
Nurturing	5.96	5.95	0.01	.93
Masculine	4.45	4.93	1.44	.23
Feminine	4.50	3.95	1.81	.18
Extraverted	4.70	4.91	0.48	.49
Critical	5.54	5.62	0.15	.70
Dependable	4.24	3.50	4.41	.04
Anxious	5.40	5.62	0.96	.33
Open to new experiences	6.07	6.36	1.95	.16
Reserved	4.54	4.08	2.44	.12
Sympathetic	6.27	6.13	0.55	.46
Disorganized	3.49	3.13	1.16	.28
Calm	4.62	4.59	0.01	.91
Conventional	3.41	3.40	0.00	.96
Enthusiastic	5.41	5.41	0.00	.98
Quarrelsome	4.93	4.40	3.33	.07
Self-disciplined	5.25	5.62	2.27	.13
Easily upset	4.67	4.50	0.34	.56
Complex	4.37	3.91	2.45	.12
Quiet	3.70	4.01	0.97	.33
Warm	5.39	5.68	1.85	.18
Careless	3.90	3.66	0.87	.35
Emotionally stable	3.95	4.29	1.57	.21
Uncreative	2.94	2.34	4.06	.05

Table 2
Firstborn, middleborn, and lastborn classification

Trait	Firstborn	Middleborn	Lastborn	F	p
Independent	6.49	6.48	6.45	0.02	.98
Emotional	5.09 ^a	4.17 ^b	4.76	4.15	.02
Assertive	5.01	5.63	5.09	2.49	.09
Sensitive	5.32	4.92	4.84	1.18	.31
Competitive	4.59	4.13	4.57	1.07	.34
Nurturing	5.96	5.97	5.92	0.02	.98
Masculine	4.45	5.40	4.49	2.39	.09
Feminine	4.50	3.45	4.40	2.65	.07
Extraverted	4.70	4.65	5.15	1.19	.31
Critical	5.54	5.72	5.53	0.36	.70
Dependable	4.24 ^a	3.06 ^b	3.91	4.10	.02
Anxious	5.40	5.68	5.57	0.56	.57
Open to new experiences	6.07	6.36	6.36	0.97	.38
Reserved	4.54 ^a	3.67 ^b	4.47	3.68	.03
Sympathetic	6.27	6.09	6.17	0.32	.72
Disorganized	3.49	3.15	3.12	0.58	.56
Calm	4.62	4.58	4.61	0.01	.99
Conventional	3.41	3.48	3.32	0.10	.91
Enthusiastic	5.41	5.35	5.47	0.08	.92
Quarrelsome	4.93	4.17	4.61	2.42	.09
Self-disciplined	5.25	5.69	5.55	1.24	.29
Easily upset	4.67	4.52	4.48	0.18	.84
Complex	4.37	3.63	4.16	2.31	.10
Quiet	3.70	4.28	3.75	1.41	.25
Warm	5.39	5.52	5.84	1.67	.19
Careless	3.90	3.42	3.89	1.54	.22
Emotionally stable	3.95	4.30	4.28	0.78	.46
Uncreative	2.94	2.31	2.36	2.03	.13

Note. For each trait, groups with different superscripts had significantly different means.

Table 3
Firstborn, laterborn and only child classification

Trait	Only child	Firstborn	Laterborn	F	<i>p</i>
Independent	6.81	6.49	6.47	0.64	.53
Emotional	5.06	5.09	4.47	2.91	.06
Assertive	5.61	5.01	5.35	1.65	.19
Sensitive	5.16	5.32	4.88	1.15	.32
Competitive	5.23	4.59	4.35	2.40	.09
Nurturing	5.84	5.96	5.95	0.09	.92
Masculine	4.90	4.45	4.93	0.79	.46
Feminine	4.29	4.50	3.95	0.97	.38
Extraverted	5.39	4.70	4.91	1.28	.28
Critical	5.58	5.54	5.62	0.08	.92
Dependable	4.65 ^a	4.24	3.50 ^b	3.78	.02
Anxious	5.45	5.40	5.62	0.53	.59
Open to new experiences	6.13	6.07	6.36	1.10	.34
Reserved	4.55	4.54	4.08	1.57	.21
Sympathetic	6.00	6.27	6.13	0.49	.61
Disorganized	3.74	3.49	3.13	1.11	.33
Calm	4.65	4.62	4.59	0.02	.99
Conventional	3.61	3.41	3.40	0.12	.88
Enthusiastic	5.19	5.41	5.41	0.24	.79
Quarrelsome	4.63	4.93	4.40	1.73	.18
Self-disciplined	5.26	5.25	5.62	1.41	.25
Easily upset	4.47	4.67	4.50	0.20	.82
Complex	5.39 ^a	4.37 ^b	3.91 ^b	7.02	.00
Quiet	4.74	3.70	4.01	2.40	.09
Warm	5.29	5.39	5.68	1.25	.29
Careless	4.87 ^a	3.90 ^b	3.66 ^b	5.43	.01
Emotionally stable	4.81	3.95	4.29	2.25	.11
Uncreative	4.06 ^a	2.94 ^b	2.34 ^b	8.13	.00

Note. For each trait, groups with different superscripts had significantly different means.

Table 4
Firstborn, middleborn, lastborn and only classification

Trait	Only child	Firstborn	Middleborn	Lastborn	F	<i>p</i>
Independent	6.81	6.49	6.48	6.45	0.43	.73
Emotional	5.06	5.09 ^a	4.17 ^b	4.76	2.95	.03
Assertive	5.61	5.01	5.63	5.09	2.14	.10
Sensitive	5.16	5.32	4.92	4.84	0.78	.51
Competitive	5.23	4.59	4.13	4.57	2.13	.10
Nurturing	5.84	5.96	5.97	5.92	0.07	.98
Masculine	4.90	4.45	5.40	4.49	1.68	.17
Feminine	4.29	4.50	3.45	4.40	1.85	.14
Extraverted	5.39	4.70	4.65	5.15	1.53	.21
Critical	5.58	5.54	5.72	5.53	0.25	.87
Dependable	4.65 ^a	4.24 ^a	3.06 ^b	3.91	3.79	.01
Anxious	5.45	5.40	5.68	5.57	0.41	.75
Open to new experiences	6.13	6.07	6.36	6.36	0.73	.54
Reserved	4.55	4.54	3.67	4.47	2.78	.04
Sympathetic	6.00	6.27	6.09	6.17	0.36	.79
Disorganized	3.74	3.49	3.15	3.12	0.74	.53
Calm	4.65	4.62	4.58	4.61	0.01	1.00
Conventional	3.61	3.41	3.48	3.32	0.14	.93
Enthusiastic	5.19	5.41	5.35	5.47	0.21	.89
Quarrelsome	4.63	4.93	4.17	4.61	1.67	.17
Self-disciplined	5.26	5.25	5.69	5.55	1.02	.39
Easily upset	4.47	4.67	4.52	4.48	0.14	.94
Complex	5.39 ^a	4.37	3.63 ^b	4.16 ^b	5.46	.00
Quiet	4.74	3.70	4.28	3.75	2.21	.09
Warm	5.29	5.39	5.52	5.84	1.28	.28
Careless	4.87 ^a	3.90	3.42 ^b	3.89	4.36	.01
Emotionally stable	4.81	3.95	4.30	4.28	1.49	.22
Uncreative	4.06 ^a	2.94	2.31 ^b	2.36 ^b	5.40	.00

Note. For each trait, groups with different superscripts had significantly different means.