



Birth Order and Selected Work-Related Personality Variables

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A possible link between birth order and various individual characteristics (e.g., intelligence, potential eminence, need for achievement, sociability) has been suggested by personality theorists such as Alfred Adler (1956) for well over a century. Since the publication of Sir Francis Galton's *English Men of Science* (1874), hundreds of researchers have relentlessly sought to replicate and extend his birth order findings. While Galton reported an overrepresentation of firstborn and only sons among British scientists, succeeding researchers have investigated the association between birth order and an almost endless array of psychological, physiological, and sociological factors. While much of the extant research conflicts, a limited number of generally agreed on findings have emerged. For example, it has been shown that relative to later borns, firstborns seek greater acceptance, have a stronger need for achievement, are more likely to achieve intellectual eminence, are judged as more dependent, more serious, more seclusive, and more sensitive. In contrast, relative to first borns, later borns are more popular, more gregarious, and more socially oriented (for a review, see Ernst & Angst, 1983).

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Since existing research has shown birth order to be related to various individual characteristics such as intellectual achievement and need for achievement, it would seem appropriate to investigate its

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association with different personality variables that may be related to various work outcomes. Of interest to managers is the question of whether birth order can result in predictable job-related behaviors. If this is the case, birth order data may take on significance in the employee selection process. Specifically, if certain sibship positions are shown to be more successful in specific professions, or more predictive of managerial potential, these data would constitute valuable input in employee selection decisions.

While general studies abound, few birth order investigations have been conducted in organizational settings. In a review of relevant literature, Heer (1985) reports that the results are nonsignificant or mixed between number of siblings and both job status and earnings. Along these same lines, Berger and Ivancevich (1973) studied the relationship between birth order and average rate of earnings progression. They found that middle managers who were firstborn or only children had the highest progression rates.

Dubno and his colleagues (Dubno, Bedrosian, & Freedman, 1969; Dubno & Freedman, 1971) have conducted two studies on birth order and managerial achievement. The first involved a simple correlation of managerial rank (middle or top) with ordinal position. Interestingly, they found a nonsignificant difference between numbers of firstborns and later borns at top levels, but a preponderance of firstborns in middle positions. They interpreted these findings in terms of conformity by positing that since firstborns are more likely to conform to expectations of others, they lack the creative genius necessary to advance in greater proportions to top management.

In his second study, Dubno (Dubno & Freedman, 1971) analyzed birth order frequencies using college education and managerial attainment as moderators. In line with previous findings (Altus, 1966) there was a strong birth order effect for college graduates, but none for non-graduates.

Hypotheses

The present study attempts to examine the association between birth order and a number of personality variables that may be related to various work outcomes. Of particular interest were two special-purpose scales derived from the California Psychological Inventory (CPI; Gough, 1975). Gough (1984) has developed and validated a managerial potential scale derived from CPI items found to differentiate managers from nonmanagers (Goodstein & Schrader, 1963). If we view managerial potential as a measure of achievement propensity, we would expect firstborns to rate higher than later borns.

Work orientation is a second special scale designed by Gough (1985) to assess "the sense of commitment and obligation to work that one finds in persons of exceptionally conscientious, dependable, and self-disciplined temperament" (p. 505). Given indications that firstborns are more approval-seeking than later borns, they should also rate higher on this scale.

Likewise, due to their stronger need for achievement, firstborns should rate higher than later borns in leadership potential. Leadership potential, including characteristics such as aggression, confidence, persistence, and persuasiveness, can be assessed using the CPI measure of dominance (Gough, 1975).

Good impression (Gough, 1975) identifies persons concerned with making a good impression and how others react to them. Firstborns would again be expected to score higher than later borns because of their desire to meet others' expectations and their vulnerability to others' opinions.

Observed differences between firstborns and later borns lead to two hypotheses concerning achievement. Firstborns should score higher than later borns on achievement via conformity (Gough, 1975), which includes being industrious and persistent, and valuing intellectual activity and achievement. In contrast, later borns should score higher than firstborns on achievement via independence (Gough, 1975), which is related to autonomy and self-reliance. Finally, later borns should score higher than firstborns on sociability (Gough, 1975), given their outgoing and sociable nature.

In summary, the following seven specific hypotheses are suggested:

Firstborns should score higher than later borns on:

1. Managerial potential
2. Work orientation
3. Dominance
4. Good impression
5. Achievement by conformity.

Later borns should score higher than firstborns on:

6. Achievement by independence
7. Sociability.

Method

Subjects. The study's sample consisted of 835 public, government, and industrial accountants responding to a national survey of accounting professionals. Participants in the survey were randomly selected from the membership rosters of the American Society of Certified Public Accountants, American Association of Women Accountants, National Association of Accountants, and Association of Government Accountants.

Measures. The California Psychological Inventory (CPI; Gough, 1975) was used to assess the personality characteristics of interest. The CPI contains eighteen scales subsumed under four categories: (1) Poise, Ascendancy, Self-Assurance, and Interpersonal Adequacy; (2) Socialization, Maturity, Responsibility, and Interpersonal Structuring of Values; (3) Achievement Potential and Intellectual Efficiency; and (4) Intellectual and Interest Modes. Five of these scales—dominance, good impression, achievement via conformity, achievement via independence, and sociability—were used in the present study. In addition, the managerial potential (Gough, 1984) and work orientation (Gough, 1985) special purpose scales of the CPI were used to measure these constructs.

All participants completed a biodata questionnaire in which birth order information was included along with general items such as gender, age, family data, and education-related questions.

Analysis

The focal hypotheses were examined using multiple analysis of variance (MANOVA). Birth order was treated as a predictor (independent variable), with the various identified personality variables serving as criterion (dependent variables). The Bartlett-Box *F*, Cochran's *C*, and Box's *M* tests were conducted to assess the homogeneity of the individual and pooled variance-covariance matrices. Univariate *F*-tests, followed by discriminant function analysis, were then performed to identify significant differences between firstborns and later borns relevant to the study's seven hypotheses.

Results

The study's sample included 373 firstborns (from families with two or more children) and 462 later borns. Only borns were excluded from the analysis although they are often collapsed into a single group along with firstborns (Sampson, 1965) because of supposed similarities between the two groups. While it is true that both first and only children have undivided access to parents (at least for a time, in the case of firstborns; Altus, 1966) only borns are similar to youngest children in that neither experiences superiority with respect to a younger, less-experienced sibling (Warren, 1966). To avoid possible contamination of results, this group was excluded from the ensuing analysis.

The Bartlett-Box *F*, Cochran's *C*, and Box's *M* tests supported the assumption of homogeneity of the individual and pooled variance-co-

variance matrices. MANOVA results indicated a significant main effect for birth order, $F(7,827) = 2.16, p < .05$.

Given the high intercorrelations ($r = .384$) among the study's dependent variables, structure coefficients rather than standardized discriminant function coefficients were utilized in the following discriminant analysis. As compared to standardized discriminant function coefficients, structure coefficients are less influenced by correlations. Moreover, when variables are correlated, discriminant function coefficients share discriminant weights, making interpretation difficult (Norusis, 1985, p. 214).

Differences between firstborns and later borns were found for dominance ($F[1,883] = 4.87, p < .05, \omega^2 = .005$); good impression, ($F[1,833] = 7.52, p < .01, \omega^2 = .008$); and achievement via conformity, ($F[1,833] = 5.23, p < .05, \omega^2 = .005$), with firstborns scoring higher on each measure. Hypotheses 3, 4, and 5 were thus supported.

Hypotheses 1, 2, 6, and 7 concerning managerial potential, work orientation, achievement via independence, and sociability were not supported, with no differences existing between firstborns and later borns.

Discussion

The present study was designed to determine if birth order is associated with selected personality variables that may be related to various work outcomes. Three of seven hypotheses were supported and the effect sizes for these were small. Firstborns scored significantly higher than later borns on measures of dominance, good impression, and achievement via conformity. No differences between firstborns and later borns were found in managerial potential, work orientation, achievement via independence, and sociability.

The nature of our sample may have been partially responsible for the results obtained. Its homogeneity may have caused any birth order effects to wash out. It can be argued that successful membership in the accountancy profession requires internalization of a set of prescribed rules and standards. If we follow the conformity argument of Dubno et al. (1969), it may be that accountants as a group are locked in to a behavioral framework. Any differentiation would then result from spurious interpersonal differences, not from predictable birth order-related characteristics.

A final interpretation is that birth order effects are nonexistent or statistical artifacts. Given the present data and particularistic sample, however, we have insufficient information from which to draw such a conclusion. Does birth order have a significant effect on life and work outcomes? Evidence at this point is inconclusive at best. Only after more careful, thorough research will this question be answered.

Table 1
 Characteristics of Firstborns and Later Borns

Variable	Firstborns (<i>n</i> = 373)	Later Borns (<i>n</i> = 462)	Total Sample (<i>n</i> = 835)
Managerial potential			
<i>M</i>	23.79	23.45	23.60
<i>SD</i>	5.21	4.93	5.06
Work orientation			
<i>M</i>	30.70	30.66	30.68
<i>SD</i>	4.79	4.45	4.60
Dominance			
<i>M</i>	31.70	30.76	31.18
<i>SD</i>	6.25	5.97	6.11
Good impression			
<i>M</i>	18.05	16.97	17.45
<i>SD</i>	5.81	5.56	5.69
Achievement via conformity			
<i>M</i>	29.40	28.78	29.06
<i>SD</i>	3.98	3.78	3.88
Achievement via independence			
<i>M</i>	21.84	22.00	21.93
<i>SD</i>	3.85	3.47	3.64
Sociability			
<i>M</i>	25.17	24.55	24.83
<i>SD</i>	5.26	5.25	5.26

Note: Firstborns coded = 1; later borns coded = 2.

Table 2
Univariate Analysis of Variance with Work-Related Personality Variables
as the Dependent Set

Variable	MS Between Groups	Univariate F^a	$p <$	Structure Coefficients
Managerial potential	22.976	.899	.343	.243
Work orientation	.323	.015	.902	.032
Dominance	181.314	4.872	.028	.566
Good impression	242.010	7.524	.006	.703
Achievement via conformity	78.158	5.225	.023	.586
Achievement via independence	4.550	.343	.559	-.150
Sociability	81.041	2.936	.087	.439

Note: Multivariate $F(7,827) = 2.16, p < .05$
^a $df = 1/833$.

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