

# Birth order, conscientiousness, and openness to experience Tests of the family-niche model of personality using a within-family methodology

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## Abstract

We investigated differences between firstborn and secondborn siblings on major dimensions of personality, in the context of the proposal of Sulloway [Sulloway, F. J. (1996). *Born to rebel: Birth order, family dynamics and creative lies*. New York: Pantheon] that personality is influenced by the specialized niches siblings adopt in the quest for access to parental resources. Using a within-family methodology, we tested two predictions from Sulloway's model: that firstborns are more achieving and conscientious than secondborns and that secondborns are more rebellious and open to new experiences than firstborns. To test an alternative prenatal hypomasculinization theory proposed by Beer and Horn [Beer, J. M., & Horn, J. M. (2000). The influence of rearing order on personality development within two adoption cohorts. *Journal of Personality*, 68, 769–819], we also examined the size of birth-order effects in sister–sister versus brother–brother pairs. The hypothesized effects of birth order on personality were found in both Study 1 ( $n=161$  sibling pairs) and Study 2 ( $n=174$  sibling pairs) and provided support for Sulloway's family-niche model. No support was found for Beer and Horn's hypomasculinization model.  
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## 1. Introduction

The influence of birth order on personality is an area of long-standing interest in psychology, generating over 2000 studies in the last 75 years (Beer & Horn, 2000; Sulloway, 2001). On the basis of a major review of 40 years of work on the topic, however, Ernst and Angst (1983) concluded that most birth-order effects on personality were methodological artifacts that disappeared when confounds such as socioeconomic status and family size were taken into account.

Sulloway (1996, 2001) strongly challenged this conclusion by offering a new theoretical perspective on birth order and conducting meta-analyses of the birth-order literature. Sulloway argued that competition between siblings for parental investment leads children to cultivate family niches that are associated with birth order. Firstborns tend to

receive greater investment from their parents and have their pick of niches within the family system. They tend to align their interests with their parents and show a strong motivation to fulfill parental expectations, often serving as surrogate parents for their younger siblings. Consequently, firstborns tend to be more amenable to their parents' wishes, values, and standards than their laterborn siblings, as well as more conscientious, responsible, ambitious, organized, and academically successful, more traditional and conservative, and more likely to endorse conventional morality.

The most pressing developmental challenge for laterborns, according to Sulloway, is to find a valued family niche that is not already occupied by an older sibling. Laterborns tend to identify less with their parents and are often subject to domination or bullying by older siblings, which is hypothesized to make them more open to experience than firstborns, and more likely to empathize with the downtrodden, to be supportive of egalitarian social change, to question the status quo, to resist authority and pressure to conform, and to be the “rebels” in the family.

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Sulloway's theorizing ignited a new wave of research on birth order and personality, with some studies supportive of the theory (e.g., Davis, 1997; Eckstein, 2000; Paulhus, Trapnell, & Chen, 1999; Rohde et al., 2003; Saroglou & Fiasse, 2003; Zweigenhaft, 2002; Zweigenhaft & Von Ammon, 2000) and others not (e.g., Beer & Horn, 2000; Freese, Powell, & Steelman, 1999; Jefferson, Herbst, & McCrae, 1998; Michalski & Shackelford, 2001). A possible reason for this inconsistency is that Sulloway's (1996, 2001) theory is more nuanced than it first appears and specifies a number of intervening factors (e.g., birth intervals, biological family composition, quadratic effects on personality differentiation within families) that influence the relation between birth order and personality development. Most previous research has sought to test general hypotheses about differences between firstborns and laterborns rather than specific predictions about the relationships between birth order and personality in the context of the intervening factors specified by the theory.

First and foremost, Sulloway's theory is about differences within families: Siblings in different birth-order positions generally differ in size, strength, and status within the family, and these disparities lead siblings to adopt different strategies for maximizing their parents' investment in their welfare. In a series of articles, Rodgers (1988, 2001) and Rodgers, Cleveland, Van den Oord, and Rowe (2000) have argued forcefully that within-family data must be used to evaluate theories of within-family processes and that between-family data are so riddled with potential selection biases as to be virtually useless. Consistent with this critique, within-family research designs, where individuals rate the personalities of their own family members, typically yield significant birth-order effects, whereas between-family designs typically do not (Ernst & Angst, 1983; Paulhus et al., 1999; Sulloway, 2001). Within-family designs avoid confounding effects associated with differences between families, such as socioeconomic status, race, and genetics.

Sulloway (1996, 2001) posits that competition between siblings promotes mutual differentiation as a way of avoiding direct conflicts and that siblings who are farther apart in age and ordinal position in the family have less need to compete. Wide birth intervals, therefore, may mitigate birth-order effects on personality. The other side of the coin is that narrow birth intervals may also alter systematic patterns of differentiation between siblings because the environmental cues that trigger birth-order strategies (e.g., sibling differences in physical and cognitive development) are often absent. Sulloway (1996, Figure 5.2) suggests that the effects of birth order on sibling strategies are greatest among offspring who are approximately 2 to 5 years apart in age. Furthermore, Sulloway (1996, 2001) states that processes of sibling deidentification (in which children differentiate themselves from their nearest-age siblings) can produce zigzag patterns of personality within families where, for example, differences between firstborns and secondborns and between secondborns and thirdborns are

greater than differences between firstborns and thirdborns (see Paulhus et al., 1999; Salmon & Daly, 1998; Saroglou & Fiasse, 2003). Thus, the clearest and most informative tests of Sulloway's theory may involve comparisons between firstborns (who should be most parent-identified) and secondborns (who should deidentify from firstborns and parents) in the same family, with birth intervals of approximately 2 to 5 years.

Finally, Sulloway (1996) emphasizes the importance of functional birth order (or rearing order), which may change due to sibling mortality, adoption, remarriage, or other events. The effect of other children (whether full sibling, half sibling, or stepsibling) leaving or entering the family environment at crucial times during development could disturb important environmental cues that covary with functional birth order. Furthermore, in blended families, where younger siblings are the genetic offspring of both parents, but older half siblings are not, the younger siblings are likely to receive higher-quality parental investment (see Daly & Wilson, 1998) and may therefore occupy more central and secure positions in the family than the older half siblings and, thus, be more likely to align themselves with parental interests and authority. In sum, changes in functional birth order and blending of families during childhood introduce confounds that preclude clear testing of Sulloway's theory. A strong test requires comparisons between siblings who were born and raised together in the same home in stable birth-order positions.

Beer and Horn (2000) have proposed an alternative theory of the effects of birth order on personality. Drawing on the observation that the number of older brothers is a positive predictor of male homosexuality and the theory that this effect is mediated by progressive immunization of mothers to the H-Y antigen by each succeeding male fetus (see Blanchard & Klassen, 1997), Beer and Horn suggest that men with older brothers are "hypomasculinized" in their personality characteristics and that this explains certain parallels between sex differences and birth-order effects, such as the fact that firstborns and males manifest higher levels of leadership and competitiveness, whereas laterborns and females exhibit more cooperation and flexibility (Sulloway, 1996). If this hypothesis is correct, then differences in personality between firstborn and secondborn brothers should exceed those between firstborn and secondborn sisters because female fetuses do not cause immunization of mothers to the H-Y antigen.

The main goal of the current research was to test the hypotheses, derived from Sulloway's (1996) theory of birth order and personality, that (a) firstborns are more Conscientious than laterborns (e.g., more responsible, organized, and academically achieving) and (b) laterborns are more Open to Experience than firstborns (e.g., more rebellious, unconventional, and liberal). Following Paulhus et al., (1999) and Sulloway (2001), we collected two within-family data sets by asking participants to rank-order themselves and their siblings with respect to certain

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