

Warren J R. Birth order and social behavior. *Psychol. Bull.* 65:38-49, 1966.
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Eminence, college attendance, intellectual achievement, and social responsiveness are more common among firstborn than later children. Schizophrenia, alcoholism, and delinquency are more common among the later born. Yet the evidence for those assertions is confused, and their implications are more cloudy still. [The Science Citation Index® (SCI®) and the Social Sciences Citation Index® (SSCI®) indicate that this paper has been cited over 190 times since 1966.]

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"While at the University of Nebraska in the early-1960s I was struck with the seriousness of purpose of the eldest sons coming from the farm to the College of Agriculture. Schachter's book¹ had recently appeared and sharpened my interest in the psychological effects of birth order and in the mechanisms that produced them. At a College of Agriculture seminar, I learned that rotifers, microscopic water animals, became less robust with increasing age of the mother. Since then, biochemical changes in human mothers have been found to be associated with age and number of pregnancies. Physiological origins of birth order effects cannot be dismissed, although current explanations tend to focus on family structure and intrafamilial relationships. This interplay of influences represented by a deceptively simple and easily observed concept may account for the appeal of birth order as a topic of study. Further, like sex, age, and birth date, everyone has it, and like birth date can attribute mystical powers to it, such as those of the seventh son of a seventh son. Benjamin Franklin took great satisfaction in being the youngest son of a youngest son for five generations. Daughters in those days had no apparent importance.

"People are intrigued on learning that Rhodes scholars show the expected overrepresentation of firstborns, no one from the seventh through twelfth birth positions, and then abruptly two thirteenth children. They then recall eminent people such as Samuel Taylor Coleridge who were thirteenth children. But while Coleridge was his father's thirteenth child, he was his mother's tenth. Myth gives greater weight to birth order counted from the father, as with the seventh son of a seventh son. Modern theory, such as that suggested by the rotifers, gives greater weight to the order counted from the mother.

"Birth order is a concept in which physiological, psychological, and social influences merge, making its study both complicated and potentially revealing. The age of the mother, the number of previous pregnancies, the spacing between children, the order of the sexes among siblings, the greater tendency for later born to be raised by single parents, and the density of the family structure in terms of age, may all contribute to the effects of birth order. Zajonc² has proposed that birth order affects intellectual achievement through the greater proportion of less mature persons in large families. While currently the most widely discussed theory in the birth order literature, the evidence is mixed.

"The attention given in the cited article to the complexity of birth order may account for its frequent citation. I would like to believe that it had influenced people to respect that complexity, yet only a few of the hundreds of studies of the past decade have done so. Are the schizophrenogenic properties of a late order of birth due to the physiological and biochemical environment of a heavily used uterus or to the social environment of a large family? And through what mechanism does either influence act? Recent advances in the analysis of data organized into ordered categories make questions like these more tractable than they have previously been."

1. Schachter S. *The psychology of affiliation: experimental studies of the sources of gregariousness.* Stanford, CA: Stanford University Press, 1959. 141 p.
2. Zajonc R B. Family configuration and intelligence. *Science* 192:227-36, 1976.