Birth order may not shape personality after all

By Ben Guarino
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Birth order, according to conventional wisdom, molds personality: Firstborn children, secure with their place in the family and expected to be the mature ones, grow up to be intellectual, responsible and conformist. Younger siblings work harder to get their parents’ attention, take more risks and become creative rebels.

That’s the central idea in psychologist Frank J. Sulloway’s “Born to Rebel,” an influential book on birth order that burst, like a water balloon lobbed by an attention-seeking third-born, onto the pop psychology scene two decades ago. Sulloway’s account of the nuclear family claimed that firstborn children command their parents’ attention and resources, so later-borns must struggle to carve out their niche. Sibling behaviors then crystallize into adult personalities.

“I thought — and I still think — it’s very plausible and intuitive,” said Ralph Hertwig, a psychologist at the Max Planck Institute for Human Development in Berlin, who published a study on unequal parental investment with Sulloway in 2002.

The trouble is the growing pile of evidence, Hertwig’s included, that’s tilted against it.

Birth order does not appear to influence personality in adults, according to several ambitious studies published in the past few years. This new wave of research relied on larger data sets and more robust statistical methods than earlier reports that claimed to find a relationship between birth order and personality. Hertwig, for his part, predicted he would find evidence that later-borns are daredevils when he embarked on a recent study of risky behaviors. He did not.

“Our results indicate that birth order does not influence the propensity to take risks in adults,” Hertwig’s collaborator Tomás Lejarraga, director of the Decision Science Laboratory at Spain’s University of the Balearic Islands, said of their study on birth order published this week in the Proceedings of the National Academy of Sciences. “There seems to be a growing consensus that birth order does not influence personality in a way that can be measured in adulthood.”

The latest study had three prongs: biographical data of explorers and revolutionaries; a survey of 11,000 German households; and an elaborate assessment, called the Basel-Berlin Risk Study, which measured risky behavior of 1,500 people through interviews and experiments.

The Basel-Berlin Risk Study, a day’s worth of about 40 psychological tests, “is one of the most exhaustive attempts to measure risk preference,” Lejarraga said. Researchers asked participants about driving too fast,
unprotected sex and other dicey behaviors. The participants also performed simple experiments. Hertwig gave the example of a game in which subjects had two options: receiving $10 (the safe choice) or gambling on a 10 percent chance to win $100.

“None of these behavioral measures showed any credible relationship between being a later-born and taking more risks,” the study authors wrote. The household survey didn’t find a relationship between self-reports of riskiness and birth order. Neither did examining the birth orders of almost 200 people who made the “risky life decision” to become revolutionaries or explorers, such as mountaineer Edmund Hillary, guerrilla fighter Che Guevara and socialist activist Rosa Luxemburg.

“This paper is very clear and it convincingly shows that there are no birth order effects on risk-taking,” said Stefan Schmukle, a psychologist at University of Leipzig in Germany who was not involved with this study.

Schmukle and his colleagues, in a study published in 2015, assessed birth order for about 20,000 people in the United States, Germany and Great Britain. The team found that birth order did not alter any of five broad personality traits. Those traits, what psychologists call the “Big Five,” were openness, conscientiousness, extroversion, agreeableness and neuroticism. A follow-up study on more specific characteristics, published by Schmukle two years later, did not find any effect of birth order, either.

Rodica Damian, a social psychologist at the University of Houston, studied more than 370,000 high school students and also concluded, in 2015, that birth order does not influence the Big Five. This sample size, Damian said, was “larger than all of the previous samples from the past hundred years put together.”

The studies by Schmukle and Damian found evidence that birth order does slightly influence intelligence. Firstborns, on average, had an advantage of an IQ point or two. Other birth order studies have found this, too. One hypothesis suggests that parents provide more mental stimulation to firstborns, especially before the parents’ energy and attention are divided among their other children.

It may seem strange that effects of experiences in very early childhood persist into adulthood. But well-designed, long-term studies such as the Abecedarian Project, which began in the 1970s, show the importance of enriched experience. Compared with a control group, infants and toddlers in the Abecedarian Project, who received high-quality child care and played educational games, performed better on reading and math tests in their 20s and were more likely to go to college.

But before all you firstborns lord your enhanced brains over your siblings, beware: The typical intelligence bonus from birth order is so small that “at an individual level it’ll never make a difference in your life,” Damian said.

One reason it has taken so long to challenge the idea that birth order influences personality is that, before 2011, social scientists struggled to publish “null effects,” Damian said. Null effects are results that show no statistically significant relationships among variables in a study. The social science community began to embrace null effects, she said, after it repeatedly failed to reproduce the results of classic experiments. There is
an increasing interest in good quality methods and increasing tolerance for people saying no,” Damian said. With that came studies like Damian’s, Schmukle’s and this week’s report. These, she said, represent the standard against which birth order effects should be judged.

Sulloway, a psychologist at the University of California at Berkeley, disputed the relevance of the biographical examples in the newest study. He made a distinction, not made by the study authors, between “technical” and “radical” revolutionaries. Technical revolutions are a firstborn’s game, he said, thanks in part to a “slight advantage in IQ.” Sulloway gave the example of Isaac Newton’s and Albert Einstein’s work in physics. Later-born radical revolutionaries, such as evolutionary theorist Charles Darwin or astronomer Nicolaus Copernicus, offer ideas so unorthodox they could upset social norms, he said.

Later-borns also take risks in sports as well as the sciences, Sulloway said. In a 1968 study, psychologist Richard Nisbett suggested that later-borns disproportionately played dangerous sports at Ivy League colleges because firstborns were “more frightened by the prospect of physical injury.” In 2010, Sulloway observed that Major League Baseball players are 10 times more likely to steal bases if they were later-borns.

The late researcher Judith Rich Harris, who did not support theories of birth order, argued that randomness explained such observations. “Chance is probably the reason why a larger-than-expected proportion of a sample of stripteasers, and a larger-than-expected proportion of the scientists who founded SETI (the Search for Extraterrestrial Intelligence), were firstborns,” she wrote. “Taking off one’s clothes in public and searching for extraterrestrials are not the sort of dull but prestigious occupations we usually think of in connection with the ‘firstborn personality’!”

As for large studies, Sulloway countered Schmukle’s null results by citing “a somewhat more impressive and well-controlled” 2018 study of Swedish siblings, which concluded that firstborns were more likely to hold leadership positions, whereas later-borne were more likely to be self-employed.

Schmukle said “this effect is rather small” and could be explained by cognitive, not personality, differences.

Even though birth order does not appear to shape grown-up personalities, we are not immune to it, Damian said. Thanks to cultural customs of primogeniture, firstborns may take over the family business or inherit the family fortune. Damian’s current work, which is not yet published, examines birth order and education.

There’s a persistent idea that Ivy League schools, for instance, are filled with firstborns. Harvard’s class of 2021 is 40 percent firstborns, 32 percent youngest children, 14 percent middle siblings and 12 percent only children, according to a 2017 survey of its incoming freshman. But wealthy, well-educated families are typically small (which means they have proportionately more firstborns) and this could explain Harvard University’s large firstborn population, two economists suggested in 2012.

“There is a small effect where firstborns get higher levels of education,” Damian said. “If you only pay for college for the firstborn, or the money runs out by the time the second-born is old enough, then that will influence their life.”
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Damian has described birth order personalities as a “zombie theory” that lurches forward despite the evidence against it. Once we’ve accepted an idea, it’s often hard to let go.

We’re also apt to confuse birth order and age. “Some of the birth order effects that we observe in everyday life are not birth order effects, but actually are age effects,” Schmukle said. Conscientiousness, for instance, increases during adolescence into young adulthood. “It is not surprising that, when you look at differences within families, that firstborns are more conscientious than later-borns,” he said. But take age out of the picture, and the effect disappears.

The possibility also remains that birth order influences personalities in children, Hertwig said, but those effects vanish when people become adults.

“Birth order research is 100 years old,” Hertwig said, with roots in Freudian psychoanalytic theory. “We are getting closer and closer to the truth. But I wouldn’t say yet that we have fully understood the true picture.”

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