

Beliefs About Birth Rank and Their Reflection in Reality

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Beliefs about birth rank reflect what the society regards as social reality, and they may also influence that reality. Three studies found that people believe those with different birth ranks differ in their personalities, that higher birth ranks are likely to attain higher occupational prestige, and that the personality characteristics attributed to the various birth ranks favor the actual attainment of higher occupational prestige. In one example of such beliefs, firstborns were rated as most intelligent but least creative whereas the opposite was true of last-borns. The 4th study found that those with higher birth ranks in fact attain more prestigious occupations and actually do complete more years of schooling.

If a man has two wives, the one loved and the other disliked, and they have borne him children, both the loved and the disliked, and if the first-born is hers that is disliked, then on the day when he assigns his possessions as an inheritance to his sons, he may not treat the son of the loved as the first-born in preference to the son of the disliked, who is the first-born, but he shall acknowledge the first-born, the son of the disliked, by giving him a double portion of all that he has, for he is the first issue of his strength; the right of the first-born is his.

—Deuteronomy 21.15–17 (Revised Standard Version)

In most societies, laws of inheritance, customs of intestacy, and practices of succession favor the male firstborn child. Such customs and laws reflect cultural beliefs that firstborns, only children, and later-borns differ from each other in some fundamental ways. A recent study by McAndrew, King, and Honoroff (2002) found that *namesaking*—that is, bestowing the parent's name onto the offspring, especially the male offspring—varies systematically with birth order. McAndrew et al. described namesaking “as a strategy for procuring future investment of resources from the father” (p. 851). McAndrew et al. found that among the undergraduates at a liberal arts college, 60.3% of male firstborns were namesaked, whereas only 37.5% of male later-borns were namesaked. Second-borns showed an intermediate pattern—50.0%. Balinese children are given names according to their birth order: *Wayan* for the firstborn, *Madé* for the second-born, *Nyoman* for the third, and *Ktut* for the fourth (Lansing, 1995).

Although studies on birth order number in the thousands (Ernst & Angst, 1983), research that has explored people's

beliefs about attributes related to birth order is scarce (Baskett, 1985; Musun-Miller, 1993; Nyman, 1995). Yet these beliefs are significant because they both reflect some reality about the correlates of birth order and may well influence the actual role of birth order in society. Important decisions in interpersonal interaction, mating, appointments, promotions, awards, and distinctions might well be made with birth rank entering, often unconsciously, as an important consideration. It has been demonstrated in research on self-fulfilling prophecies (Rosenthal & Jacobson, 1968) and behavioral confirmation (Snyder, 1984) that people's beliefs do influence their judgments of others and their actual behavior toward them. This article seeks to examine some significant beliefs about the correlates of birth order and their correspondence with actual empirical differences that these beliefs and stereotypes might reflect.

The birth order literature is characterized by conflict and ambiguity. For example, Sulloway (1996) and Zajonc (1983) have reported systematic and significant effects, whereas other authors claim that there are simply no effects of birth order on personality (Ernst & Angst, 1983; Schooler, 1972). In a recent review, Sulloway offered novel hypotheses about birth rank differences. Using the Big Five personality dimensions (Costa & McCrae, 1985), he claimed that firstborns are more achievement oriented, antagonistic, anxious, assertive, conforming, extraverted, fearful, identified with parents, jealous, neurotic, organized, planful, responsible, self-confident, and traditional. Moreover, they tend to affiliate under stress and are more likely than later-borns to assume leadership positions. Later-borns are, according to Sulloway, more adventurous, altruistic, cooperative, easygoing, empathetic, open to experience, popular, rebellious, risk-taking, sociable, and unconventional.

It is interesting to note that in their reviews, Ernst and Angst (1983) and Sulloway (1996) arrived at opposite conclusions from the same birth order research. Sulloway concluded that “the literature . . . exhibits consistent trends” (p. 74), whereas Ernst and Angst concluded that “birth order influences . . . have been widely overrated” (p. 242). In contrast, Harris (1998), who questioned the role of parental influence in personality development

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altogether,¹ stated that “popular stereotypes” about birth rank differences do exist and that they reflect empirical consistencies. She pointed out that “Sulloway’s description of the younger brother” (p. 374) as well as the results of studies reviewed by Ernst and Angst “in which parents were asked to describe their children’s personalities or children were asked to describe their siblings” (p. 375) agree with popular stereotypes. According to Harris, people believe that firstborns are “serious, sensitive, responsible, worried, and adult-oriented” (p. 375), and later-borns are “independent, cheerful, and rebellious” (p. 375). She also found that second-borns view their elder siblings as bossy and aggressive (p. 375).

Ernst and Angst (1983) reported that “based partially on speculation or clinical and personal uncontrolled experience and partially on research” (p. 85), people believe firstborns to be adult oriented, affiliative, conservative, creative, dependent, fearful, introspective, uncertain, vulnerable, and interested in abstract thought; that they tend to express anger indirectly; and that they are likely to become leaders, even though they have low self-esteem. Later-borns according to these authors, are ambitious, empathizing, extraverted, harmonious, leisurely, peer oriented, popular, inclined to new ideas, interested in practical problems, and ready to cooperate; unlike firstborns, they tend to express anger directly. Ernst and Angst derived these traits, primarily, from Adler’s theory of sibling rivalry (Adler, 1927, 1928).

In contrast to the ready conjectures about actual personality differences associated with birth rank, studies of people’s beliefs about birth rank differences in personality can be counted on the fingers of one hand, and studies about the psychological origins of these differences are, except for the original work of Alfred Adler (1927), virtually nonexistent. Yet it is of no trivial interest to determine the extent to which beliefs about birth order and actual differences due to birth order are correlated with each other, for it is a safe guess that some of the actual differences obtained for birth order can be, at least in part, attributed to the social beliefs and stereotypes about it and about their consequences. In an early study of people’s beliefs, Baskett (1985) had 278 participants complete three 50-item, 7-point adjective checklists. The checklists asked them “to describe what they would expect a child without brothers or sisters, a child who was the oldest in his or her family, and a child who was the youngest in his or her family to be like” (p. 442). The lists included the following items: *academic, adjusted, adventurous, agreeable, altruistic, cooperative, creative, doesn’t seek attention, dominant, easily disciplined, extroverted, flexible, good peer relations, happy, hard working, helping, high achiever, independent, intelligent, leader, likeable, neat, not demanding, not jealous, not prone to anger, not self-centered, not spoiled, obedient, organized, outgoing, outspoken, popular, relaxed, responsible, secure, self-confident, self-critical, sociable, socially skilled, and tough*. A factor analysis performed on the ratings yielded eight factors: academic, likeable, not jealous, obedient, outgoing, secure, relaxed, and unspoiled. Post hoc comparisons indicated that participants believed that (a) firstborns are the most obedient, outgoing, and secure and the least spoiled; (b) only children are the most academic and spoiled and the least likeable; and (c) last-borns are the most likeable but the least academic, obedient, outgoing, and secure. Among other findings, Baskett reported that participants described firstborns in more positive terms than only children or

later-borns and that “there was some bias toward one’s own sibling status group” (p. 443).

Two other studies have replicated most of Baskett’s (1985) findings. Using the same checklists that were used by Baskett, Musun-Miller (1993)² had 105 parents describe “what they would expect a hypothetical only, oldest, and youngest child to be like . . . [and] to describe their own children” (p. 191). A factor analysis performed on the ratings yielded five factors: academic, likeable, obedient, outgoing, and unspoiled. Post hoc comparisons indicated that participants believed that (a) firstborns are the most obedient and outgoing and the least spoiled; (b) only children are the most academic and spoiled and the least likeable; and (c) last-borns are the most likeable and the least academic, obedient, and outgoing.³ Among other findings, Musun-Miller also reported that parents gave more positive ratings to firstborns.

In a more recent study, Nyman (1995) had 139 participants “list three words that described the characteristics of each birth position” (p. 53). Nyman found that participants described (a) firstborns as achievers, aggressive, ambitious, caring, dominant, independent, leaders, maternal, nurturing, responsible, and thoughtful; (b) only children as independent, self-centered, selfish, and spoiled; (c) middle-borns as achievers, ambitious, caring, friendly, outgoing, and thoughtful; and (d) last-borns as caring, dependent, friendly, outgoing, passive, spoiled, and thoughtful. In addition, Nyman reported that firstborns received the most favorable ratings and that participants ranked their own birth position “in accordance with the ways others viewed that position” (p. 56).

The present studies sought to extend the previous research on people’s beliefs and stereotypes about birth rank, but more important, to explore the empirical reality of birth order differences and their reflection in people’s beliefs. In Study 1, as an extension of the studies by Baskett (1985) and Musun-Miller (1993), participants were asked about the personality traits of firstborns, only children, middle-borns, and last-borns. In Studies 2 and 3, people were asked about their beliefs about the kinds of occupations that would likely be held by firstborns, only children, middle-borns, and last-borns. Given that different personality patterns predispose people to seek and be directed into different careers, Study 4 examined just what sorts of occupations people of different birth rank do in fact hold and what was the level of their academic attainment.

Study 1: Personality Attributions to Birth Rank

This study examined beliefs about personality and ability differences in birth order. It differed from previous studies in a few important ways. First, the participants in Musun-Miller’s (1993) study and almost half of the participants in Baskett’s (1985) study were parents, and most of the participants in Nyman’s (1995) study

¹ Interestingly, Harris (1998) stated that “firstborns behave like firstborns, and laterborns like laterborns, only when they’re in the presence of their parents or their siblings Birth order effects on personality do exist: they exist in the home. People leave them behind when they leave home” (p. 375).

² Formerly L. M. Baskett.

³ Note that these findings are the same as those of Baskett (1985), with the exception of the findings that participants believed that firstborns are the most secure and last-borns are the least secure.

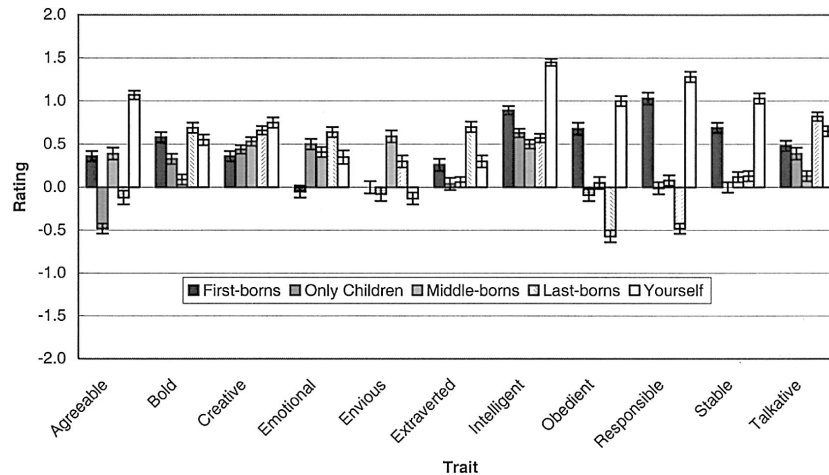


Figure 1. Personality attributes assigned to birth ranks. Ratings were made on a scale from 2 (*very*) to 0 (*neither*) to -2 (*not at all*). Error bars represent standard errors of the mean.

were either African American or Hispanic college students. The participants in the present study were, for the most part, young, childless, unmarried, and more representative of the ethnic diversity of the United States. Second, the effects of one's own birth rank on the participants' judgments about the attributes of people in their own and other ranks were investigated as well. Third, unlike in the Baskett or Musun-Miller studies, people's beliefs about middle-borns were also obtained. Finally, self-attributions were recorded to examine the possibility of self-serving biases.

Method

One hundred six (45%) of the participants were firstborns,⁴ 17 (7%) were only children, 41 (18%) were middle-borns, 68 (29%) were last-borns, and the birth rank of 2 (1%) of the participants is unknown. Thirty-six participants had to be discarded because of missing data, leaving a total of 196.

All participants (Stanford University undergraduates) completed four 11-item questionnaires that asked them to rate firstborns, only children, middle-borns, last-borns, and "yourself" on 5-point (2 to -2) scales. These ratings were made with respect to the following dimensions: agreeable-disagreeable, bold-timid, creative-uncreative, emotional-unemotional, not envious-envious, extraverted-introverted, intelligent-unintelligent, obedient-disobedient, responsible-irresponsible, stable-unstable, and talkative-silent.

Participants responded to each item by circling an answer; for example, answers for the question about the agreeable-disagreeable dimension were 2 = *very agreeable*, 1 = *moderately agreeable*, 0 = *neither*, -1 = *moderately disagreeable*, and -2 = *very disagreeable*. High scale values were always assigned to the positive end of the dimension.

Results

Figure 1 shows the results. The 196 participants rated firstborns, only children, middle-borns, last-borns, and themselves differently on the 11 traits, $F(40, 7760) = 19.57, p < .001$. They believed that (a) firstborns are the most intelligent, responsible, obedient, stable, the least emotional, and quite clearly the least creative; (b) only children are the most disagreeable; (c) middle-borns are the most envious and the least bold and talkative; and (d) last-borns are the

most creative, emotional, extraverted, disobedient, irresponsible, and talkative. Also, participants believed that the self exceeded all ranks for agreeableness, intelligence, obedience, responsibility, and stability.

It is of interest that personality ratings of the participants differed both from their own birth rank and from the birth rank of the targets they judged. These data are shown in Table 1, where the participants' judgments on a 2 to -2 five-point scale are tabulated. The Targets' Birth Order \times Raters' Birth Order \times Trait interaction was significant, $F(120, 7760) = 1.60, p < .0001$. In general, the participants gave the most positive ratings to themselves as individuals (see Column Y in Table 1). Also, participants gave the most positive ratings to people in the same rank as themselves. This last finding can be seen in Table 1 by inspecting the figures in bold along the diagonal. The following patterns of results are also evident from Table 1.

1. *Agreeable-disagreeable.* The highest rating was given by firstborns to themselves as individuals, and they also thought that firstborns are the highest on this dimension. Middle-borns rated themselves quite high on this dimension and also rated their own rank the highest. Both only children and last-borns rated their own rank quite low in agreeableness, but rated themselves, regardless of their rank, individually quite high.

2. *Bold-timid.* All ranks rated last-borns as the boldest, and firstborns rated themselves second highest on this dimension. Middle-borns were conspicuously low in their rating of their own rank, and other raters also thought of them as the least bold.

3. *Creative-uncreative.* Only children gave their own rank the highest rating, but rated themselves below only children in general. Firstborns believed last-borns to be the most creative, and the last-borns themselves also believed that their rank was the most creative.

4. *Emotional-unemotional.* Firstborns were viewed, in general, as the least emotional by other ranks and by firstborn partic-

⁴ Note that the proportion of firstborns (i.e., 45%) exceeds the population norm by more than 15%.

Table 1
Attributes Assigned by Various Ranks to the Various Ranks and to Self

Rater	Target					Rater	Target				
	FB	OC	MB	LB	Y		FB	OC	MB	LB	Y
Agreeable–disagreeable						Stable–unstable					
FB	0.60	-0.46	0.39	-0.12	1.14	FB	0.94	0.04	0.02	0.06	1.08
OC	0.24	0.06	0.18	-0.18	0.65	OC	0.71	0.71	0.00	-0.18	1.06
MB	0.10	-0.62	0.85	-0.32	1.20	MB	0.54	-0.24	0.59	0.15	1.00
LB	0.21	-0.56	0.19	0.06	0.99	LB	0.38	-0.12	0.03	0.32	0.96
Bold–timid						Talkative–silent					
FB	0.65	0.37	0.10	0.75	0.65	FB	0.51	0.40	0.14	0.85	0.72
OC	0.59	0.35	0.24	0.76	0.69	OC	0.53	0.53	0.00	0.94	0.59
MB	0.51	0.54	0.10	0.88	0.46	MB	0.45	0.50	0.10	1.05	0.55
LB	0.53	0.18	0.07	0.49	0.44	LB	0.43	0.31	0.18	0.63	0.62
Creative–uncreative						Intelligent–unintelligent					
FB	0.45	0.46	0.56	0.66	0.77	FB	1.04	0.64	0.43	0.52	1.49
OC	0.06	0.82	0.56	0.76	0.65	OC	0.82	1.06	0.53	0.47	1.59
MB	0.18	0.43	0.66	0.73	0.80	MB	0.93	0.59	0.83	0.63	1.41
LB	0.44	0.32	0.43	0.60	0.72	LB	0.68	0.54	0.43	0.66	1.37
Emotional–unemotional						Obedient–disobedient					
FB	-0.25	0.52	0.52	0.63	0.40	FB	0.98	-0.04	-0.09	-0.71	1.11
OC	0.00	0.06	0.18	0.59	0.41	OC	0.71	0.47	-0.18	-0.56	0.82
MB	0.17	0.88	0.02	0.83	0.24	MB	0.46	-0.27	0.32	-0.73	1.02
LB	0.14	0.35	0.53	0.57	0.34	LB	0.37	-0.18	0.18	-0.25	0.87
Not envious–envious						Responsible–irresponsible					
FB	0.14	0.15	-0.74	-0.41	0.16	FB	1.34	-0.02	-0.10	-0.68	1.41
OC	0.19	0.69	-0.76	-0.18	0.63	OC	0.76	0.56	0.12	-0.47	1.56
MB	-0.07	0.02	-0.32	-0.29	0.20	MB	0.78	-0.02	0.37	-0.59	1.12
LB	-0.24	-0.14	-0.47	-0.18	-0.12	LB	0.78	-0.13	0.21	-0.10	1.15
Extraverted–introverted											
FB	0.27	0.07	0.14	0.77	0.31						
OC	0.50	0.12	0.29	0.71	0.25						
MB	0.08	0.21	-0.05	0.83	0.20						
LB	0.26	-0.07	-0.06	0.54	0.40						

Note. Ratings were made on scales from 2 to -2, with most positive ratings on the positive end of the scale. Boldface highlights ratings of people in the same category as the rater. FB = firstborn; OC = only child; MB = middle-born; LB = last-born; Y = self.

ipants as well. In fact, firstborns were attributed the lowest rating on emotionality. Firstborns rated last-borns, and last-borns rated their own rank, as quite emotional, and participants of other ranks followed this rating as well.

5. *Not envious–envious.* Participants of all ranks, except last-borns, rated themselves individually as least envious. The ranks that were rated as envious were middle-borns and last-borns.

6. *Extraverted–introverted.* Most of the ratings for this dimension were moderate, with the exception of last-borns, who were rated highest on this dimension by all ranks.

7. *Intelligent–unintelligent.* All participants rated their intelligence as considerably higher than that of any of the four birth ranks. All ranks rated firstborns as the highest in intelligence.

8. *Obedient–disobedient.* As with intelligence, all participants rated themselves individually higher in obedience than they

rated the four ranks. Firstborns thought of firstborns as the highest in obedience, whereas last-borns thought of last-borns as the lowest in obedience. In fact, all ranks gave low scores on obedience to last-borns. These ratings support Sulloway’s (1996) hypothesis that last-borns are seen as rebellious.

9. *Responsible–irresponsible.* Sulloway’s (1996) “rebel” hypothesis also predicts that last-borns are seen as quite irresponsible. Participants’ beliefs agree in this respect. Last-borns were rated by all ranks as the least responsible—in fact, as irresponsible; firstborns believed that their rank is the highest in responsibility; and participants of all ranks rated themselves individually highest on this dimension.

10. *Stable–unstable.* Although all ranks rated themselves individually as the highest in stability, last-borns were rated the lowest. This finding was consistent with ratings of themselves

individually. Firstborns rated firstborns as the highest in stability.

11. *Talkative-silent.* No systematic patterns emerged for this dimension.

These results generally support some of the findings of Baskett (1985), Musun-Miller (1993), and Nyman (1995). Baskett (1985) and Musun-Miller (1993) found that last-borns are believed to be the least responsible. In the present study, the participants endorsed the irresponsible side of the scale for last-borns. These beliefs are also in overall agreement with Sulloway's (1996) hypothesis. Our data show a most interesting pattern, not previously reported, when we compare birth rank belief patterns for intelligence and creativity. Whereas ratings of intelligence decline with birth order, ratings of creativity increase.

This last finding is a clear indication that there is no overall positivity bias favoring higher birth ranks, although a strong and pervasive self-serving bias is evident for many attributes. Participants rated themselves as the most agreeable, intelligent, and responsible. They also rated themselves as relatively high on creativity and emotionality. In most cases, these ratings varied with the participants' own birth rank. Firstborns' beliefs about firstborns' intelligence, for example, were biased in their own favor.

Study 2: Stereotypes About Occupation and Birth Rank: The Wisconsin Sample

If one were to consider the personality attributes that might afford paths to various occupations, individuals of higher birth ranks should exhibit attributes likely to lead to occupations of higher prestige more than individuals of lower birth ranks. The findings of Study 1 suggest that firstborns are believed to exhibit attributes that are likely to be regarded as necessary in occupations requiring leadership and stability. On the other hand, last-borns, being regarded as emotional, disobedient, talkative, and the least responsible, would not qualify for positions of leadership and occupations high in prestige. Because firstborns are believed to be more intelligent than other ranks and because this belief has been

substantiated by data (e.g., Zajonc, 1983), we would expect first-borns to enter into occupations in which what is viewed as "intelligence" is a necessary or desired qualification. If last-borns, on the other hand, are seen as the most creative, as our data above show, and again if the stereotype reflects reality, we should find a preponderance of last-borns in occupations requiring creativity. The primary purpose of this study was to sample people's beliefs regarding the likelihood that different birth ranks might enter each of several occupations and to determine whether these beliefs reflect a bias in occupational prestige for higher birth ranks. If widespread beliefs about birth rank differences in occupational attainment exist in a given culture, one would expect these differences to be reflected in personality and ability differences.

Method

Two hundred thirty-one students and 10 teachers from Eleva-Strum Central High School completed 25-item questionnaires that asked them whether a firstborn or a last-born is more likely to work in each of several occupations. Eleva and Strum are two small towns located about 20 miles south of Eau Claire, Wisconsin, an agricultural area with many residents employed in Eau Claire. One hundred seventeen (49%) of the participants were female, 123 (51%) were male, and the gender of 1 of the participants is unknown. All but 10 of the participants were between the ages of 12 and 18 ($M = 16$, $SD = 7.1$). The questionnaire included the following occupations, which are ranked according to the Standard International Occupational Prestige Scale on a scale from 0 to 100 (Treiman, 1977): firefighter (35), musician (45), photographer (45), farmer (47), stunt man (49), computer programmer (51), actor (52), journalist (55), accountant (55), social worker (56), artist (57), police officer (60), clergy (60), veterinarian (61), author (62), engineer (62), politician (63), high school teacher (64), airline pilot (66), dentist (70), architect (72), lawyer (73), college professor (78), physician (78), and astronaut (80). Participants were simply asked whether a firstborn or a last-born was more likely to work in each of the occupations.

Results

The results are shown in Figure 2. We found that participants believed that a firstborn is more likely to work as an accountant

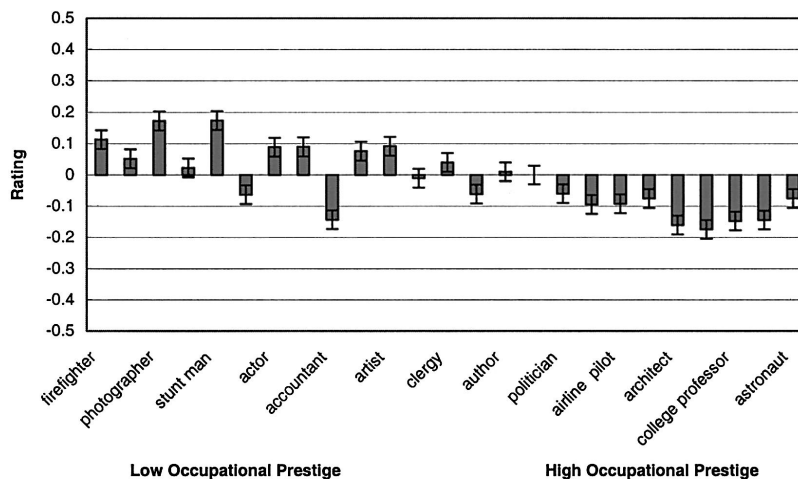


Figure 2. Birth rank stereotypes for occupations varying in prestige: the Wisconsin sample. The data are average likelihood proportions distributed between first- and last-borns. Ratings were made on a scale from 0.5 (last-born) to 0 (either) to -0.5 (firstborn). Error bars represent standard errors of the mean.

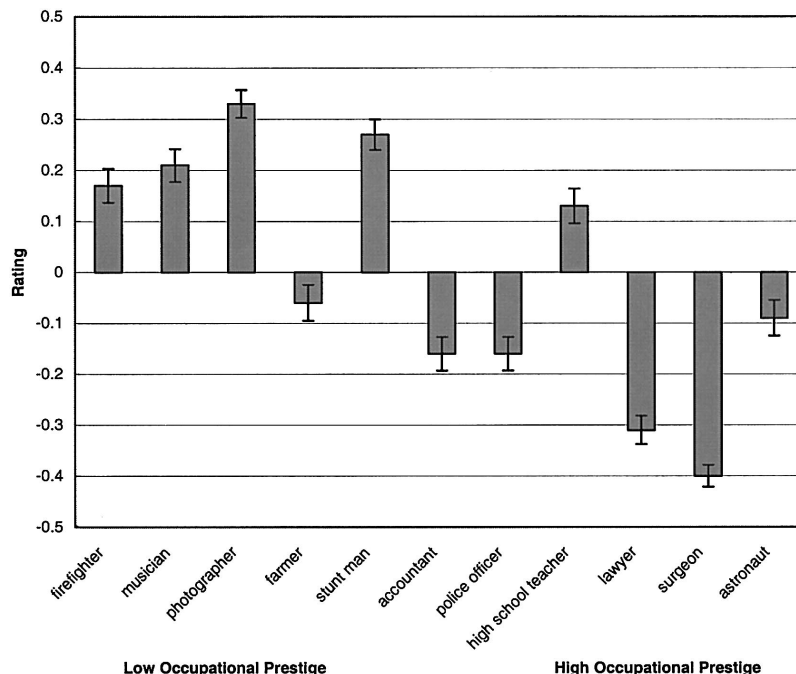


Figure 3. Birth rank stereotypes for occupations varying in prestige: the Stanford sample. The data are average likelihood proportions distributed between first- and last-borns. Ratings were made on a scale from 0.5 (last-born) to 0 (either) to -0.5 (firstborn). Error bars represent standard errors of the mean.

(55), airline pilot (66), architect (72), astronaut (80), college professor (78), computer programmer (51), dentist (70), high school teacher (64), lawyer (73), physician (78), politician (63), and veterinarian (61).⁵ They believed also that a last-born is more likely to work as an actor (52), artist (57), clergy (60), firefighter (35), journalist (55), musician (45), photographer (45), social worker (56), and stunt man (49).

The average prestige rank of occupations attributed to firstborns was 67.6, and that attributed to last-borns was 50.4. The correlation between attributed prestige of occupation and birth rank was $-.76$.

Study 3: Stereotypes About Occupation and Birth Rank: The Stanford Sample

Stereotypes about occupational prestige and its relationship to birth rank may vary with class, race, gender, and especially the region of the country. Study 2 examined a predominantly rural Midwestern population. Study 3, therefore, sought to replicate Study 2 on a rather different population.

Method

Participants (203 Stanford University undergraduates) completed an 11-item questionnaire that asked them whether a firstborn or a last-born is more likely to work in each of several occupations. The list of occupations included firefighter (35), musician (45), photographer (45), farmer (47), stunt man (49), accountant (55), police officer (60), high school teacher (64), lawyer (73), surgeon (78), and astronaut (80).

Results

The data (Figure 3) indicate that participants believed a firstborn was more likely to work as an accountant (55), astronaut (80), farmer (47), lawyer (73), police officer (60), and surgeon (78). They believed a last-born was more likely to work as a firefighter (35), high school teacher (64), musician (45), photographer (45), and stunt man (49). The average occupational prestige ranking assigned to firstborns was 65.5, and that assigned to last-borns was 47.6.

With few exceptions, these findings, shown in Figure 3, are consistent with the results of Study 2. However, unlike Study 2, Study 3 found that participants believed that (a) a firstborn is more likely to work as a farmer, (b) a last-born is more likely to work as a high school teacher, and (c) a firstborn is more likely to work as a police officer. Yet as in Study 2, Study 3 found that firstborns are believed to have more prestigious occupations than last-borns. In this study, the correlation between the average birth rank and the occupational prestige scores was $-.73$, very near the value of the coefficient obtained in Study 2.

Recall that in Study 1, last-borns were regarded as the most creative of all the birth ranks. Consistent with this belief, they were also believed to become actors, artists, musicians, and photographers, as seen in Study 2, and musicians and photographers, as seen in Study 3. Also, in both Studies 2 and 3, the last-born was predicted to become a stunt man, a prediction consistent with the

⁵ The occupations in Figures 2 and 3 are ranked according to the Standard International Occupational Prestige Scale (Treiman, 1977).

fact that of all the ranks, last-borns obtained the highest rating on the bold–timid dimension. Firstborns were viewed as likely to be responsible. Thus, in Studies 2 and 3, they were believed to be more likely to become police officers, accountants, lawyers, and physicians.

Study 4: Actual Occupational Prestige and Level of Academic Attainment of the Various Birth Ranks

Do higher birth ranks in fact afford paths to higher social status reflected in higher occupational prestige and more advanced scholastic attainment? In Study 4 we compared the various birth ranks for the occupational prestige they actually attained and the years of schooling they actually completed. Study 4 used data from the Polski Generalny Sondaż Społeczny (Polish General Social Survey [PGSS]) conducted on a large representative cross-section sample of the Polish population (Cichomski, 2001). The data also included the variable of family size, a close correlate of birth order (Zajonc, 1983).

In Studies 2 and 3, the correlations between birth rank and the prestige scores of the occupations the different birth ranks were believed to attain were at robust levels. Are then higher birth ranks in fact more likely to enter into occupations higher in prestige than lower birth ranks? It is known that firstborns are more likely than later-borns to become chiefs of states and executive officers (Sulloway, 1996). Is this relationship general over occupations and birth ranks? Are offspring of smaller families likely to achieve greater prestige in their occupational careers, as Blake (1989) suggested? Similarly, occupational prestige builds on school attainment. Hence, years of school completed were also expected to be higher for higher birth ranks and for offspring of smaller families.

Method

A sample of respondents representative of the Polish population, at least 18 years of age, were interviewed in 1997 and 1999 as part of the fifth and sixth PGSS conducted by the Institute for Social Studies at the University of Warsaw. Every 2 years, the PGSS collects data on a representative sample of the Polish population, data that are very similar to that collected by the Chicago National Opinion Research Center. PGSS often includes information about the birth order and occupational prestige of the respondents.

A detailed description of the method for selecting the PGSS sample is contained at the PGSS Web site (<http://www.iss.uw.edu.pl/osrodki/obs/pgss/en/index.html>). PGSS strictly follows the constraints of national surveys. The successive surveys are conducted at the same time of the year, May–June. The sample selected is checked for its correspondence to the national demographics, and technical features of question design and interview process are meticulously observed. The field research is carried out by a network of professional interviewers of the Zakład Badań Naukowych Polskiego Towarzystwa Socjologicznego (Department of Scientific Research of the Polish Sociological Association; PGSS, 1992) and the Ośrodek Realizacji Badań Socjologicznych Instytutu Filozofii i Sociologii Polski (Center for Sociological Field Research at the Institute of Philosophy and Sociology, Polish Academy of Science; PGSS, 1993, 1994, 1995).

A computer-based coding of occupations used two parallel classifications: Polska Socjologiczna Klasyfikacja Zawadów (the Polish Social Classification of Occupations; Domański, Sawiński, & Kucharska, 1995) and an International Standard Classification of Occupations (1990). Both

were based on Treiman's (1977) original work. Years of school completed was based on the respondents' answers in the interview, sporadically checked for their reliability.

Results

Figure 4 shows average occupational prestige attained by respondents of the various birth ranks and family sizes. Because occupational prestige is correlated with the age of the respondents, analyses of covariance (ANCOVAs) with age as covariate were carried out to test these effects. Occupational prestige was found to vary significantly with birth order and with family size, $F(4, 2899) = 4.01, p < .003$, and $F(4, 2441) = 12.83, p < .001$, respectively. The trend is not entirely monotone for birth order, probably because of the instability of data for the lowest birth rank (i.e., there are few families with five or more members). The family size data, however, show a consistent decline in occupational prestige. The standard errors for birth rank and family size were 0.28 and 0.30, respectively. All differences except between Ranks 2 and 3 and Ranks 4 and 5 were significant. Variations with family size were reliable without exception.

Years of school completed as they vary with birth rank and family size are shown in Figure 5. Again, ANCOVAs with age of the respondent as covariate were carried out on the data. Years of schooling as a function of birth order and family size were both significant, $F(4, 3245) = 8.31, p < .0001$, and $F(4, 2743) = 22.58, p < .0001$, respectively. The standard errors for birth rank and family size were 0.055 and 0.058, respectively. Except for Ranks 4 and 5, all other birth order and family size means were significantly different from each other.

Study 4 was based on a population of different culture and nationality than Studies 1, 2, and 3. The comparability of the results, however, can be taken for granted. Consistent birth order and family size differences in intellectual performance, like those reported here, have been repeatedly found not only for American

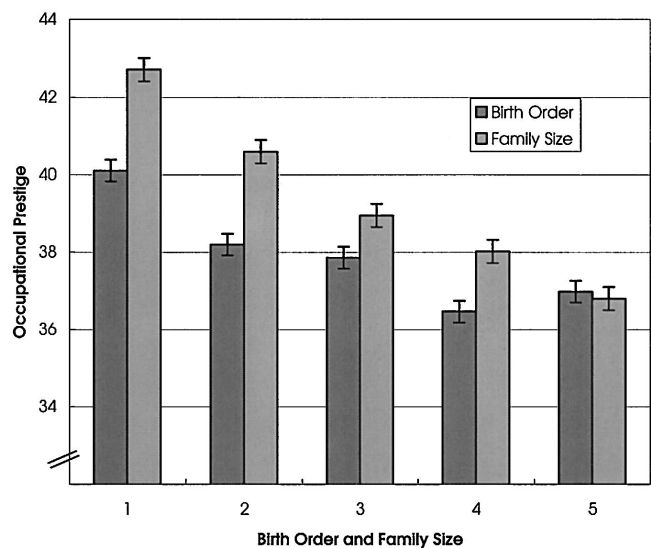


Figure 4. Occupational prestige actually attained by various birth ranks, rated on a scale from 0 to 100. Error bars represent standard errors of the mean.

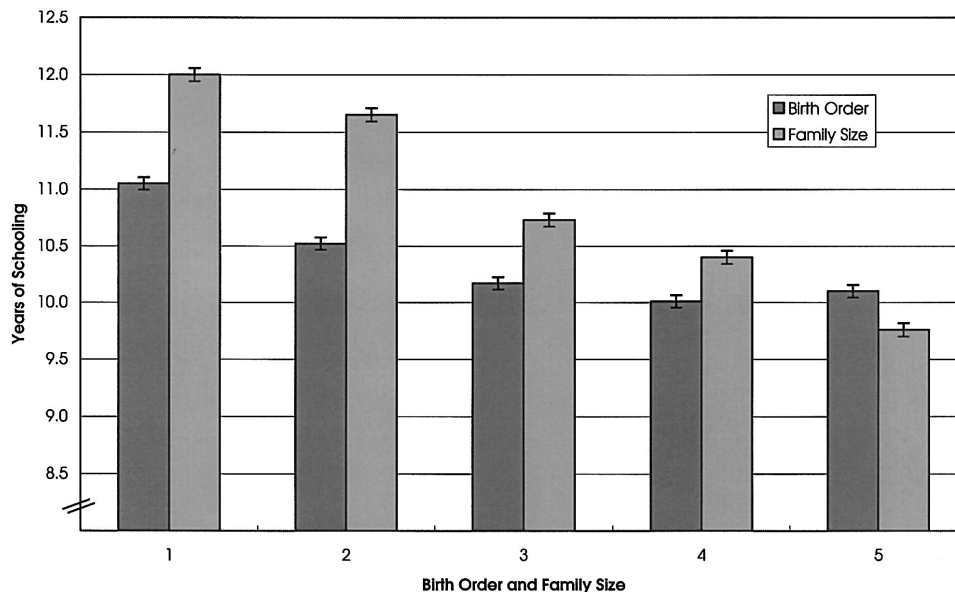


Figure 5. Years of school actually completed by various birth ranks. Error bars represent standard errors of the mean.

populations but also for several diverse ethnic and cultural groups. Thus, similar patterns of effects have been reported for Dutch (Belmont & Marolla, 1973), Israeli (Davis, Cahan, & Bashi, 1977), English (Douglas, 1964), Irish (Eysenck & Cookson, 1970), French (Tabah & Sutter, 1954), Belgian (Nuttin, 1970), Scottish (Scottish Council for Research on Education, 1949), Columbian (Velandia et al., 1978), and Nigerian (Zajonc, Berbaum, Hamill, Moreland, & Akeju, 1980) participants, as well as several others. Also, Treiman (1977) reported that occupational prestige hierarchies are similar throughout the world. He found that "the average inter-country occupational prestige correlation (computed over 55 countries) is .81" (p. 166).

General Discussion

The present studies found that people have definite beliefs that can well qualify as stereotypes about birth rank differences in occupation and personality and that these beliefs have a fair correspondence to actual differences in occupational prestige and academic attainment, at least in Poland. These results suggest that in some domains, people's beliefs and stereotypes may have important psychological and, most likely, behavioral and social consequences and that beliefs about birth rank, therefore, may well influence decisions in a variety of important domains.

Study 1 sought to isolate people's beliefs about the link between birth order and personality attributes and found that (a) firstborns are believed to be the most intelligent, obedient, stable, and responsible and the least emotional; (b) only children are believed to be the most disagreeable; (c) middle-borns are believed to be the most envious and the least bold and talkative; and (d) last-borns are believed to be the most creative, emotional, extraverted, disobedient, irresponsible, and talkative. These results are consistent with Baskett (1985) and Musun-Miller's (1993) findings that firstborns are believed to be the most obedient, only children are

believed to be the least likeable, and last-borns are believed to be the least obedient. They are also consistent with Nyman's (1995) finding that firstborns are believed to be responsible and last-borns are believed to be outgoing and friendly, and with Sulloway's (1996) hypothesis that last-borns are the most rebellious and disobedient.

Not found previously are the striking differences between beliefs about the intelligence and creativity of firstborns and last-borns. Whereas high intelligence was attributed to firstborns, last-borns were believed to be the most creative but not as intelligent. The occupations believed to be held by these ranks were consistent with the personality traits attributed to these ranks. Thus, for example, firstborns were expected to be lawyers and physicians whereas last-borns were expected to be artists, actors, musicians, and photographers. These data indicate that personality traits attributed to the various birth ranks are not simply a matter of a strong positivity bias favoring higher birth ranks but do discriminate among specific traits and abilities.

Studies 2 and 3 both found that beliefs and stereotypes about birth rank accord occupations higher in prestige to higher ranks than to lower ranks. Moreover, the kinds of occupations believed to be held by individuals of different birth ranks were found to be consistent with the characterological and personality differences attributed by the participants. Study 4 found that in fact individuals of higher birth rank and of smaller families actually do attain positions of higher prestige. Study 4 found a systematic increase in number of years of school completed as a function of birth rank and family size, a condition that increases the likelihood of favorable socioeconomic attainment, another finding consistent with the beliefs about the personality dispositions of the various ranks.

In their reviews of the birth order literature, both Schooler (1972) and Ernst and Angst (1983) concluded that evidence of birth order differences is inconsistent and weak. Although the

present studies do not challenge these researchers' conclusions regarding actual personality differences associated with birth rank, they do suggest that people's beliefs in such differences show strong and consistent patterns, replicable over diverse populations. More important with respect to hard outcomes, such as actual occupational prestige attained or years of school completed, the results are significant. The difference between firstborns and fifthborns in the years of school completed is over 1 year. Traditional explanations of birth rank differences have focused on "differential parental treatment of children of different birth orders" (Paulhus, Trapnell, & Chen, 1999, p. 482; see Adler, 1927, 1928; Schachter, 1959; Zajonc, 1983) and "competition among siblings as they fight for a family niche" (Paulhus et al., 1999, p. 482; see Sulloway, 1996). The present studies add an additional focus on people's beliefs about and social representations of birth order. It is entirely possible that people's beliefs about birth rank differences may induce differences in parents' expectations for their own children and about other people in general. They may also induce differences in the attributions about their children's abilities and behavior. As a result, people may react differently to firstborn and later-born children⁶ and may "differentially reinforce and shape child behavior that fits within these stereotypes" (Baskett, 1985, p. 444). That behavior, in turn, might strengthen their beliefs.

⁶ Ernst and Angst (1983) concluded that "differential socialization by birth order . . . has been well established at least for first-borns in comparison to second-borns and at infancy and preschool age" (p. 187).

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