



Birth order, personality, and religion: a study among young adults from a three-sibling family

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Abstract

Effects of birth order on personality are modest but not inexistent. However, studies do not often distinguish between two kinds of laterborns: middleborns and lastborns. In addition, some evidence suggests effects of birth order on religion. In the present study, 122 young adults from three-sibling families completed the NEO-PI-R and gave information on religion and school performance. Peer(mother)-evaluation of personality was also assessed. Middleborns seemed to represent the “rebellious” (laterborn) sibling in Sullo-way’s (1996) theory: in comparison to their siblings, they were less conscientious, less religious, and lower in school performance, as well as more impulsive and open to fantasy, whereas lastborns were the most agreeable and warm. In most cases, effects were similar in self- and mother-evaluation. Finally, mother ratings validated self-reported personality correlates of religion (Conscientiousness, Agreeableness, low impulsiveness and low excitement seeking) and spirituality (Openness).

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1. Introduction

1.1. Birth order and personality (five factors)

Sulloway’s review of previous studies and data (1996) and recent research (1999) led him to conclude that, in comparison to laterborns, firstborns are higher in Conscientiousness, Neuroticism, and Extraversion (facets of dominance but not of sociability), and lower in Agreeableness

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and Openness. As their position is already established, firstborns tend to be responsible, competitive, and conventional, whereas laterborns have to “distinguish” themselves and create a specific niche by being playful, cooperative, and especially, rebellious. Recent studies indicate low magnitude in the effect of birth order on personality (Ernst & Angst, 1983, for a review) if not even absence of any effect at all (e.g. Freese, Powell, & Steelman, 1999; Jefferson, Herbst, & McCrae, 1998, Study 1; Parker, 1998; Phillips, 1998). However, when results are significant, they provide some evidence to Sulloway’s theory. Compared to firstborns, who tend to be high in Conscientiousness and achievement, laterborns perceive themselves both in general and in comparison to their older siblings as being more rebellious and liberal (Paulhus, Trapnell, & Chen, 1999; see also Davis, 1997), and are evaluated by peers as higher in Openness to Experience (Jefferson et al., 1998, Study 3). Moreover, first vs. late position in rearing order (among adopted biological firstborns) predicts high Conscientiousness (Beer & Horn, 2000). In addition, compared to firstborns, laterborns evaluate themselves as high in Agreeableness (Paulhus et al., 1999), in altruism (A3) and tender-mindedness (A6) (Jefferson et al., 1998, Study 2), and are evaluated by peers as high in trust (A1) and straightforwardness (A2) (Jefferson et al., 1998, Study 3).

Although self-evaluation of personality is generally confirmed by peer ratings (McCrae & Costa, 1989), observer reports may provide additional information on personality that has to be taken into consideration (McCrae, 1994). Indeed, Jefferson et al. (1998) found that peer evaluations of personality provided additional (but not conflicting) information on the birth order effects as compared to information merely provided by self-reports of the same targets (see also Paulhus et al., 1999).

When considering the literature on birth order and personality, one may find it surprising that researchers very often compare firstborns with laterborns in general, not distinguishing, for instance, between a middleborn and a lastborn, in the case of a three-sibling family (but see Salmon & Daly, 1998, for an exception). However, there is room for suspecting personality differences between these two kinds of laterborns. Contrary to lastborns whose position as the youngest is clearly established, middleborns are supposed to assume both the position/role of older (with regard to the lastborn) and younger (with regard to the firstborn) sibling. Moreover, the social definitions of the respective positions are clearer for the first and the lastborn than for the middleborn. Two possible consequences may be that the middleborn has a more complex, less singular position, and/or that he/she can more easily “blend into the background”, having, for instance, wider space within which to move as well as a greater freedom for playing with social norms. If Sulloway’s theory emphasizing the need for every sibling to create a specific niche (in order to compete for parental and other resources) is valid, it may be expected that the personality of middleborns should differ from the personality of both firstborns and lastborns.

The present study aims to investigate effects of birth order on personality by focusing on participants from three-sibling families. This allows for the comparison of two kinds of laterborns (middleborns and lastborns), as well as guarding against the confounding of firstborns with only children, as it has sometimes been the case in previous studies. In addition, by restricting (and generalizing to all participants) the sibship size to three, and consequently, by retaining one kind of middleborn (the second sibling), we control for a middleborns bias (Ernst & Angst, 1983): studies comparing middleborns to firstborns and lastborns from families with different sibship size overlook the fact that these middleborns may have larger sibling size experience than firstborns and lastborns (those who may have only one sibling). More generally, limitation of sibship

size to three might be helpful in order to control for this variable (sibship size) known to possibly affect the birth order effects on personality (e.g. Downey, 2001). As these effects seem also to depend on age (e.g. Zajonc, 2001), a way to control for this variable (in studies with small sample size) is to limit the age of participants (with the disadvantage of limited generalizability). We decided then to focus on young adults (younger than 30, an age marked by a certain stabilization in personality; McCrae & Costa, 1994). Finally, personality was assessed through both self- and peer (mother)-evaluation.

1.2. Birth order and religion

We decided to include religion, in the present study, as a variable possibly affected by birth order. Attitudes to religion, religious practices, and choices in life with regard to religion, seem to depend on family-related factors such as quality of parental relationships, religious socialization, and educational styles; effects of this dependence may be present not only in childhood and adolescence but also in adulthood (Hood, Spilka, Hunsberger, & Gorsuch, 1996, for review; see also Saroglou & Hutsebaut, 2001). Religion expresses high need for affiliation and belonging and may even be defined, according to sociologists of religion, by the symbolic inscription into a filial line (Hervieu-Léger, 2000). In addition, a series of studies have demonstrated constant associations between religion and personality, including high Conscientiousness (Saroglou, 2002), conservatism, and traditionalism (Hood et al., 1996). Following the general idea that firstborns, in comparison to laterborns, are more conscientious, responsible, and conservative, one may expect firstborns to be more religious than laterborns.

A few previous studies investigated this hypothesis. Results either indicated lack of any difference between siblings (Lewis, 1975; Peterson, 1999) or confirmed the hypothesis (MacDonald, 1969). In addition, a review of studies in the 1960s and 1970s by Godin (1983) suggested an important, significantly high, proportion of firstborns among ministers, priests, or seminarians, both in Catholic and Protestant environments, in the North America and Europe (see, in addition, Bradshaw, 1977). However, as pointed out by Godin (1983), this finding needs not necessarily to be understood as a consequence of psychological factors but may also be an effect of sociological-demographic-historical ones, such as old traditions (offering the firstborn to the Church), poverty (sending him to be educated in religious institutions), or confounding firstborns with only children (who are supposed to be strongly attached to the mother).

1.3. Religion and personality

Finally, as this study included both evaluation of personality and religion, it constituted a new occasion for investigation of personality correlates of religion. These two domains are related in specific, systematic ways, both when Eysenck's taxonomy (see Francis, 1992; Eysenck, 1998; Saroglou & Jaspard, 2000, for reviews) and the Big Five model (Saroglou, 2002, for a review) are used. However, all studies having investigated this question have been restricted to self-evaluation of personality. As some evidence exists that social desirability is (modestly) associated with religion (Trimble, 1997, for a review), one could wonder whether a social desirability bias may intervene on the religion-personality association, especially when keeping in mind that many of the NEO-PI-R dimensions and facets may be considered highly valued in society. Consequently,

as the design of the present study included mother ratings of the child's (young adult) personality, this provided a good chance for examining personality correlates of religion using one sort of peer-evaluation. Finally, it has been argued (Saroglou, 2002) that presentation of personality correlates of religion on the facets/traits level may provide additional (or even more subtle) information compared to information given on the basis of the higher-order dimensions level, as is usually the case in most of the previous studies. We decided then to present results detailing the facets level.

2. Method

Participants were 122 young adults (22–29 years old; mean age: 22.3) living in Belgium to whom the protocols were distributed by acquaintances of the authors and who accepted to complete them and send them back in a couple of days. They were informed that the aim of the study was to investigate birth order effects on personality (Paulhus et al., 1999, found no differences in birth order effects on personality whether or not birth order was made salient during the personality ratings). Sixty percent of participants had a university education and 34% had a higher, non-university education; they all were of middle socio-economic status, living in urban areas or within their surroundings. All participants came from different families. Only young adults coming from three-sibling families with no dead siblings, and only natural, non-adopted, siblings, were asked to participate. Participants gave information about their sibling rank and were consequently coded as firstborns ($n = 45$; 22 men and 23 women), middleborns ($n = 45$; 27 men and 18 women), and lastborns ($n = 32$; 18 men and 14 women). They were administered the validated French version (Rolland, Parker, & Stumpf, 1997; see also McCrae, Costa, Pilar, Rolland, & Parker, 1998) of the NEO-PI-R (Costa & McCrae, 1992). In addition, they gave information on religiousness measured by an index (seven-point Likert-format scale) that included two questions on religiosity (importance of God in their life, and importance of religion in their life), and one question on spirituality (importance of spirituality in their life). (Religion and spirituality were only moderately intercorrelated, $r = 0.45$; they were thus considered as distinct constructs, on the basis of previous theoretical and empirical evidence; e.g. Zinnbauer, Pargament, & Scott, 1999). Finally, participants gave information on success at school at the end of high school (following the Belgian system of grades: 0: unfinished studies; 1: satisfaction; 2: distinction; 3: great distinction; 4: the greatest distinction). In addition to the participants, their respective mothers agreed to participate in the study and to evaluate their child's personality through the peer(third person)-version of the NEO-PI-R.

3. Results

Self and mother evaluations of personality were importantly correlated ($r_s = 0.48$, for Neuroticism; 0.56, for Extraversion; 0.55, for Agreeableness; 0.58, for Conscientiousness; and 0.66, for Openness). Comparisons between self reports and mother ratings of personality demonstrated no differences regarding Extraversion and Agreeableness. However, mothers perceived their (adult) children as being more conscientious, $F(121) = 21.31$, $P < 0.001$, and less neurotic, $F(121) = 40.46$, $P < 0.001$, but also less open to experience, $F(121) = 38.37$, $P < 0.001$, than they themselves did.

Birth order seemed to have an impact on personality and religion (see Table 1 for details). Gender was included as a covariate in the ANOVA analyses, as women were found to be more religious, $t [120]=2.50$, $P < 0.05$, more neurotic, 3.84 , $P < 0.001$, and more agreeable, 2.17 , $P < 0.05$. Birth order had an impact on religion, both religiosity and spirituality. Subsequent t -test analyses in the total sample indicated that the middleborn was the least religious, compared to the firstborn and the lastborn. No differences in religion were found between the latter two. Personality also seemed to be a function of birth order and post-hoc (t-tests) comparisons were also conducted. With an agreement between self- and mother-evaluation of personality, it turned out that birth order had an impact on Conscientiousness, in general (and dutifulness and deliberation facets, in particular), with the middleborn being the lowest in the above dimensions compared to the other siblings, as well as an impact on altruism (A), with the lastborn being the highest in this facet, in comparison to the other siblings. In addition, on the basis of self-reports or mother ratings, it turned out that the middleborn was low in competence, achievement, and self-discipline (C), as well as high in impulsiveness (N) and openness to fantasy (O), compared to one or both the other siblings. The lastborn was perceived by the mother as the highest in Agreeableness, tender-mindedness (A), and warmth (E), compared to the other two siblings, and high in trust, straightforwardness, and compliance (A), compared to the middleborn; he/she, finally, evaluated him/herself as being low in openness to values (O), compared to the other siblings.

Birth order also seemed to have an effect on school performance with firstborns reporting to have obtained higher grades than secondborns at the end of high school (see Table 1). School performance ($N=120$, two outliers were dropped out) was positively related to the factor of Conscientiousness ($r_s=0.27$, $P < 0.01$, 0.34 , $P < 0.001$, in self- and mother- reports, respectively). This association reflected positive associations with almost all C facets: competence (0.31 , 0.29 , $P < 0.001$), order (0.21 , 0.21 , $P < 0.05$), dutifulness (0.20 , $P < 0.05$, in mother-report), achievement (0.22 , $P < 0.05$, 0.38 , $P < 0.001$), self-discipline (0.29 , $P < 0.001$, 0.27 , $P < 0.01$), and deliberation (0.25 , $P < 0.01$, in mother-report). In addition, school performance was positively related to assertiveness (E; $r_s=0.28$, 0.27 , $P < 0.01$), activity (E: 0.19 , $P < 0.05$, 0.25 , $P < 0.01$), and openness to ideas (O: 0.18 , $P < 0.05$, in mother-report), but negatively related to openness to values (O: -0.23 , $P < 0.05$, in mother-report), and modesty (-0.19 , $P < 0.05$, in self-report). Many of these findings are consistent with previous research that has demonstrated the importance of Conscientiousness in school performance (Digman, 1989; Goff & Ackerman, 1992; John, Caspi, Robins, Moffitt, & Stouthamer-Loeber, 1994), and the positive association of Extraversion with in-classroom performance (Goff & Ackerman, 1992; but see John et al., 1994). Finally, school performance was unrelated to religion.

Overall, self-report based personality correlates of religion turned out to be similar to the ones based on mother ratings, but differences were observed between personality correlates of religiosity (items relating to the importance of God and religion) and personality correlates of spirituality (see Table 2 for details). *Religiosity* was positively correlated with Conscientiousness (total factor as well as dutifulness and deliberation, in both reports; competence, in self-reports; and achievement and self-discipline, in mother-reports) and Agreeableness (total factor as well as straightforwardness, altruism, and tender-mindedness, in both self- and mother-reports; compliance, in self-reports). In addition, religiosity was negatively related to impulsiveness (N; self-report), excitement seeking (E; both reports), and openness to values (O; self-report). As far as *spirituality* was concerned, it turned out that it shared with religiosity the negative associations

Table 1
Impact of birth-order on personality, religion, and school performance ($N = 122$)

	F^a		Post-hoc comparisons ^b	
	Self	Mother	Self	Mother
<i>Religion</i>	4.10*		2 < 3*, 2 < 1†	
religiosity	2.26†		2 < 3*	
spirituality	4.82*		2 < 3*, 2 < 1*	
<i>School performance</i>	2.26†		2 < 1*	
<i>Neuroticism</i>				
anxiety	0.25	0.70		
angry hostility	0.16	0.04		
depression	0.21	1.64		
self-consciousness	0.37	0.04		
impulsiveness	0.68	0.73		
vulnerability	0.51	2.17	1 < 2†	1 < 2†, 2 > 3*
<i>Extraversion</i>	0.26	0.24		
warmth	1.22	0.51		
gregariousness	1.77	2.40†	1 < 3†	1 < 3†, 2 < 3†
assertiveness	0.39	0.45		2 < 3†
activity	1.31	1.78		
excitement seeking	0.40	0.25		
positive emotions	1.13	1.31		
<i>Openness</i>	1.46	0.23		
fantasy	0.02	0.27		
aesthetics	0.61	3.63*		2 > 3*
feelings	0.37	0.24		
actions	0.83	1.07		
ideas	0.04	1.28		
values	0.50	0.90		
	2.39†	0.27	1 > 3†, 2 > 3*	
<i>Agreeableness</i>	0.88	4.09*		1 < 3†, 2 < 3**
trust	0.68	2.12		2 < 3*
straightforward	0.51	2.33†	1 < 2†	2 < 3*
altruism	7.40***	3.09*	1 < 3**, 2 < 3***	2 < 3*
compliance	0.41	1.92		2 < 3†
modesty	0.36	0.04		
tender-mindedness	1.08	3.00*		1 < 3†, 2 < 3*
<i>Conscientiousness</i>	3.84*	2.34†	1 > 2†, 2 < 3**	1 > 2*, 2 < 3†
competence	2.48†	0.39	2 < 3*	
order	0.81	0.40		
dutifulness	6.11**	4.61**	1 < 3*, 2 < 3***	1 > 2**, 2 < 3*
achievement	2.04	0.19	1 < 3†, 2 < 3†	
self-discipline	1.01	1.96		1 > 2†, 2 < 3†
deliberation	3.71*	3.58*	1 > 2*, 2 < 3*	1 > 2*, 2 < 3†

1 = Firstborns; 2 = Middleborns; 3 = Lastborns.

^a Gender was included as a covariate.

^b Only significant differences are reported.

† $P < 0.10$.

* $P < 0.05$.

** $P < 0.01$.

*** $P < 0.001$ (two-tailed significance test).

Table 2

Coefficient correlations between religion and personality as evaluated in self- and mother-reports ($N = 122$)

	Religion		Spirituality	
	Self	Mother	Self	Mother
<i>Neuroticism</i>	0.02	0.01	0.11	−0.05
anxiety	0.05	0.09	0.14	0.07
angry hostility	0.02	0.01	0.08	−0.10
depression	0.15†	0.04	0.07	−0.04
self-consciousness	0.02	0.04	0.17†	−0.08
impulsiveness	−0.27**	−0.13	−0.02	0.02
vulnerability	0.05	−0.03	0.02	−0.07
<i>Extraversion</i>	−0.16†	0.03	−0.18*	0.02
warmth	−0.01	0.09	−0.06	0.06
gregariousness	−0.14	−0.04	−0.32***	0.01
assertiveness	−0.01	0.14	−0.04	0.08
activity	−0.06	0.09	−0.06	−0.05
excitement seeking	−0.33***	−0.15†	−0.23**	−0.05
positive emotions	−0.01	−0.03	0.08	0.04
<i>Openness</i>	0.01	0.05	0.43***	0.35***
fantasy	0.00	−0.08	0.22*	0.12
aesthetics	0.08	0.02	0.36***	0.26**
feelings	0.10	0.14	0.27**	0.26**
actions	−0.10	−0.08	0.11	−0.01
ideas	0.04	0.20*	0.39***	0.37***
values	−0.17†	−0.10	0.26**	0.22*
<i>Agreeableness</i>	0.23*	0.15†	0.09	0.10
trust	0.13	0.07	−0.02	−0.03
straightforward	0.21*	0.21*	0.08	0.10
altruism	0.17†	0.18*	0.10	0.14
compliance	0.17†	0.04	0.07	0.08
modesty	−0.01	−0.20*	−0.06	−0.18*
tender-mindedness	0.25**	0.27**	0.25*	0.33***
<i>Conscientiousness</i>	0.20*	0.18*	−0.01	0.03
competence	0.25**	0.14	0.19*	0.11
order	0.09	0.01	−0.14	−0.17†
dutifulness	0.15†	0.18*	0.01	0.05
achievement	0.05	0.21*	−0.08	0.01
self-discipline	0.14	0.16†	−0.03	−0.01
deliberation	0.23*	0.15†	0.09	0.15†

† $P < 0.10$.* $P < 0.05$.** $P < 0.01$.*** $P < 0.001$ (two-tailed significance test).

with excitement seeking (self-reports) and the positive associations with (only) the tender-mindedness facet of A (self- and mother-reports), and the competence (self) and deliberation (mother) facets of C. However, differently from religiosity, spirituality was highly related to Openness to Experience and almost all facets of this factor in both self-reports and mother-ratings of personality. In addition, spirituality was positively related to self-consciousness (N; self-report) and

negatively related to gregariousness (E; self-report) and orderliness (C; mother rating). Lastly, in mother ratings, modesty (A) of children was negatively related to their interest in religion and spirituality.

4. Discussion

4.1. *The effects of birth order on personality and religion*

Using a between-family design, the present study investigated effects of birth order on personality (Big Five) and religion in young adults from three-sibling families. Personality was assessed both by self-report and peer(mother)-evaluation measures (NEO-PI-R). Overall, no major differences existed between self- and peer-evaluation of personality as associated with birth order and religion, so we here summarize results from both approaches to personality together.

Instead of simply replicating the general pattern (moderately) established in the literature suggesting that firstborns are more conscientious, conventional, and tend to be achievers, while laterborns are more open and rebellious, the present study revealed the middleborn as the rebel of the family in comparison to both the first and the lastborn. Middleborns were the lowest in Conscientiousness, school performance, and religion, and the highest in impulsiveness and openness to fantasy and values. Moreover, the lastborn (not the laterborns, in general, as suggested in previous literature; e.g. Jefferson et al., 1998; Paulhus et al., 1999) was the highest in Agreeableness and warmth (especially as perceived by the mother), compared to both the first and middleborn. In the present study, it seems as if Sulloway's (1996) theory applies differently for the two kinds of laterborns. Although it is easily understandable why the middleborn represents the rebellious sibling of Sulloway's (1996) theory and why the lastborn (as the youngest) is and is perceived to be the most warm, altruistic, and tender-minded, it is less clear why the third sibling, the lastborn, resembles the firstborn more than the middleborn in the Conscientiousness-related dimensions. The fact that the lastborn is perceived to be highly agreeable, altruistic, warm, and tender-minded could indicate that he/she possibly does not have the affective reasons to be a rebel that the middleborn does.

Further research is needed in order to explore this issue. In addition, further research should replicate the present findings using a within-family design (as suggested by a reviewer, within-family designs may provide clearer results on birth order effects), although discrepancies between the two designs (between- and within-family) seem to be more important with regard to effects of birth order on intelligence than with regard to its effects on personality (Michalski & Shackelford, 2001). Moreover, subsequent investigation in three-sibling families should control for variables that, according to previous research, may have a moderating or mediating impact on the birth order-personality relation such as age, demographic-social characteristics of parents, and cohort.

Finally, differences in religion between siblings provided additional evidence to the above idea that it is the secondborn in particular and not the laterborns in general that seems to be the rebellious sibling. These differences may be understood in the light of theory and research into the psychology and sociology of religion. People's religiosity depends strongly on parental religiosity and the quality of parental relationships. Maintaining parental religion reflects a deeper tendency to be in conformity-continuity with the family world (values, world representations, ethic, traditions),

whereas abandoning religion seems to reflect a general, unconventional-rebellious attitude with regard to what was transmitted by the family (Hood et al., 1996, for a review). Indeed, Salmon and Daly (1998) found that, compared to first and lastborns, middleborns tend to be less close to parents, less inclined to turn to them in need, and less likely to engage in genealogical research.

4.2. *Religion and personality*

The associations between religiosity, on the one hand, and *Agreeableness* and *Conscientiousness*, on the other hand, as well as the lack of association between religiosity and Neuroticism, are in line with previous studies on religious personality from the Big Five perspective (Saroglou, 2002, for a review) and from the Eysenck three-dimension perspective (low Psychoticism being typical of religion: Eysenck, 1998; Saroglou & Jaspard, 2000, for reviews). In addition, in the present study, religiosity was unrelated to Extraversion, a finding more or less consistent with previous evidence of no (Eysenck, 1998; see also Saroglou, 2001, for another study in Belgium) or weak positive association (Saroglou, 2002) between religion and extraversion. With regard to the fifth factor, results of the present study are consistent with a recent meta-analysis (Saroglou, 2002) demonstrating that *Openness to Experience* is unrelated (if not negatively related) to personal, intrinsic religion (mean $r = -0.06$), whereas it is positively related to spirituality (mean $r = 0.22$). Religiosity was even negatively related to one facet: openness to values (in line with Costa, Busch, Zonderman, & McCrae, 1986; Dollinger & Clancy, 1993; Leak & Fish, 1999).

Moreover, the present study suggests that when studying religious personality, additional (more subtle?) information may be provided when focusing on *traits-facets* rather than higher order *factors-dimensions*. Openness to values was one example. Similarly, although religious people did not seem to be necessarily high or low in Extraversion, they tended to be low in one of this factor's facets, i.e. excitement seeking (remember that religion predicts risk avoidance; Miller & Hoffmann, 1995), and although they did not feel particularly high or low in Neuroticism they were low in the facet of impulsiveness (in line with studies using Eysenck's model; Francis, 1992).

Finally, as religion seems to be (modestly) correlated with social desirability (Trimble, 1997, for a review), it is interesting to highlight that the present study provided some peer (mother)-validation of personality correlates of religion. However, one has to go further and examine personality evaluations by peers other than mothers. As mothers' religiosity may be suspected to predict religiosity of their children (Hood et al., 1996, for review), it is not to be excluded that what is valued positively by the one (e.g. altruism, trust, dutifulness) is also valued positively by the other.

4.3. *Conclusion*

Effects of birth order on personality and other related constructs have constantly been the subject of psychological interest. Apparently, not only are there differences between firstborns and laterborns, but also, as our study suggests, between laterborns, and these differences may be understood as resulting from a need for "specific niches". However, our results also point out some similarities beyond differences: for instance, although the last(third)born is more agreeable, he/she is similar to the firstborn in several points, mainly in *Conscientiousness*, religion, and educational achievement. To give only one interpretative hypothesis, it could be that both are

willing, to some extent, to be in conformity-continuity with the family world (ideas, values, traditions), although the lastborn does this more by empathy and the firstborn more by adherence to principles. These comparisons point out the importance for further research not only to focus on the need of siblings for uniqueness and specific niches, but also on the way this need interacts with the need for continuity and conformity.

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