Running head: BIRTH ORDER AND CONSERVATISM

Birth Order and Conservatism: A Multilevel Test of Sulloway's "Born to Rebel" Thesis

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Abstract

We analysed differences in conservative values between firstborn and secondborn siblings, in the context of Sulloway's (1996) idea that firstborns favour the *status quo* more than secondborns do. Using multilevel analysis to predict siblings' conservatism, we tested two hypotheses from Sulloway's theory: (a) firstborns are more conservative than are secondborns; and (b) firstborns internalize their parents' conservative values stronger than secondborns do, independent from the degree of their parents' conservatism. Ninety-six Italian families (composed of both parents, the firstborn and the secondborn, total $N = 384$) filled out the Portrait Values Questionnaire (Schwartz et al., 2001). Results supported Sulloway's first, but not his second prediction: Birth order fostered children's conservatism directly, but not in interaction with parents' conservatism. Implications of the results for the children's socialization and their possible developments are discussed.

Keywords: Birth order; Conservatism; Children's socialization; Multilevel analysis; Sulloway.

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1. Introduction

In the social sciences, there is a relatively small but growing literature on the relation between birth order and conservatism. Its origin can be traced back to Adler (1928), according to whom firstborns, having experienced the trauma of being dethroned by laterborns, tend to identify with rules and authorities to achieve recognition from parents and to preserve their own personal position in the family, often becoming "power-hungry conservatives" (Adler, 1956, p. 327). In this study we aimed to test if birth order fosters children's conservative values directly or indirectly, in interaction with parents' conservative values.

The cornerstone of the literature on the relation between birth order and conservatism is Sulloway's (1996) book *Born to rebel: Birth order, family dynamics, and creative lives*. Based on a Darwinian approach, Sulloway contends that children have the ability to develop the values, attitudes, and personality that allow them to maximise the limited resources they can gain from their parents. In this light, family life is based on siblings' competition to take parents' attention and acceptance, and firstborns and laterborns grow up in different "family niches" that require different qualities. Firstborns, having experienced the undivided attention and care of their parents, and being stronger and more intellectually developed than their younger siblings, occupy a dominant position. Thus, they will tend to safeguard their status advantage by developing conservative values and attitudes helping them to uphold the status quo. On the contrary, laterborns, trying to find a valued family niche not already occupied by older siblings, will challenge the status quo.

Sulloway (1996) implicitly shifts between two predictions regarding the effect of birth order on conservatism. When he conceives the status quo at the societal level, he predicts a negative influence of birth order on conservatism. Thus, birth order should lead firstborns to be more conservative than laterborns. However, when he conceives the status quo at the family level, firstborns should maximise the similarity between their parents' and their own values, independent

from the degree of their parents' conservatism. Conversely, laterborns should be particularly interested in not duplicating their senior siblings, thus becoming different from their parents.

At a first glance, Sulloway's analyses, performed on an impressive set of historical quantitative data on the biographies of many scientists and politicians, confirmed both these predictions. However, selection biases in reviewing the data (e.g., Townsend, 2000) and a number of methodological shortcomings (e.g., Nyman, 2000) drastically undermined the solidity of his conclusions. Also subsequent research—systematically performed to test Sulloway's first, but not his second hypothesis—was characterized by relevant methodological problems and, like it often happens in birth order research (Beer & Horn, 2000), led to contradictory and inconclusive results.

In questionnaire studies, several researchers tested Sulloway's first hypothesis by examining the link between birth order and conservatism (Freese, Powell, & Steelman, 1999; Zweigenhaft, 2002; Zweigenhaft & von Ammon, 2000) without partialling out the effect of family's conservatism, which instead may be a powerful predictor of children's conservatism (Førland, Korsvik, & Christophersen, 2012; Kulik, 2004). Thus, the effects of birth order could have been overestimated. Moreover, even if a significant portion of differences between firstborns and laterborns are based on differences within, not between, families (Sulloway, 1996), the large majority of these studies have been based on between-family designs (Bleske-Rechek & Kelly, 2014). Rodgers and colleagues (2000) showed that birth order research performed among people with different birth order from different families leads to results systematically different from those stemming from studies performed on siblings from the same family. The authors 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 biases (e.g., socioeconomic status, parents' education, parental IQ, quality of schooling) to be virtually useless.

However, in birth order research even within-family studies (e.g., Paulhus, Trapnell, & Chen, 1999) have a considerable limitation. Indeed, given that they fail to properly separate between- and

within-family variance (Jensen, 1980), they do not allow researchers to disentangle the actual origins (between or within-family?) of conservatism (Wichman, Rodgers, & MacCallum, 2006).

Thus, the most appropriate method to formally test Sulloway's predictions is the multilevel analysis on siblings' data, with each child nested within his/her family. Neglecting the multilevel structure of the data can lead to incorrect inferences because the standard errors of regression coefficients are underestimated. Moreover, researchers leaving out of the model the higher-level units such as family cannot analyse potentially important context effects (Jenkins, Rasbash, & O'Connor, 2003).

2. Goals and Hypotheses

In this study, we aimed at testing Sulloway's (1996) predictions using multilevel modeling, which is the most promising approach to predict the effects of birth order on conservatism. In doing so, we analysed four-informant family data (i.e., from both parents, the firstborn, and the secondborn) and we controlled for a number of variables potentially related to conservatism: children's gender, age, and religiosity (see Barni, 2009); parents' education and religiosity, and, given that it may account for a number of between-family environmental influences on children (e.g., parents' maturity at the transition to parenthood), parents' age at first childbirth (Wichman et al., 2006). We referred to Schwartz's Value Theory (1992) in defining and measuring participants' conservative values. These values, which emphasize traditional practices, conventional norms, and social order, are conceived as a basic dimension at the origin of people's political core values (Schwartz, Caprara, & Vecchione, 2010).

We tested two hypotheses.

HP1: firstborns are more conservative than are secondborns. Thus, children's birth order should show a significant negative association with their level of conservatism.

HP2: firstborns internalize their parents' conservative values more than secondborns do, independent from the degree of their parents' conservatism. Thus, generally speaking, the interaction between children's birth order and parents' conservatism should influence children's

conservatism. In more detail, the relation between parents' and children's conservatism should be significantly stronger among firstborns than among secondborns.

3. Method

3.1 Participants

Ninety-six Italian families (composed of both parents, the firstborn and the secondborn) participated in the study, for a total of 384 participants. Mean ages of fathers and mothers were 53.14 ($SD = 4.25$) and 49.95 ($SD = 3.59$) respectively. Most parents were married (97.6%) and on average they had 2.34 children ($SD = .67$). The firstborns (35.4% males and 64.6% females) were aged between 20 and 35 ($M = 23.74$, $SD = 2.85$), while the secondborns (40.6% males and 59.4% females) ranged in age from 12 to 25 ($M = 19.50$, $SD = 2.78$), with a mean age difference between siblings of 4.24 ($SD = 2.16$).

The recruitment of families took place with the collaboration of universities, or through worker cooperatives and associations located in the North-East of Italy. Families were informed by letter about the main objectives of the research, and they were advised that participation was free and voluntary. Participants who consented to take part in the study filled out a self-reported questionnaire individually.

3.2 Measures

3.2.1 Within-Family Measures

Children's Conservative Values. Conservative values were measured by the Conservatism Scale (13 items) from the Portrait Values Questionnaire (Schwartz et al., 2001). Each item is a verbal portrait of a person, describing his/her goals, aspirations, or wishes and points implicitly to the importance of conservatism dimension. An item example is: "It is important to her/him to live in secure surroundings. She/He avoids anything that might endanger her/his safety". Participants answered "How much is this person like you?" for each portrait on a six-point scale (from 1 = not like me at all to 6 = very much like me). Cronbach's Alpha was .74 for both firstborns and secondborns.

Children's Birth Order and Control Variables. Children were asked to indicate their birth order (0 = secondborn, 1 = firstborn), gender (0 = female, 1 = male), age, and religiosity, measured by the ad-hoc item "How much do you consider yourself as religious?" (from 1 = not religious at all to 4 = very religious).

3.2.2 Between-Family Measures

Parents' Conservative Values. Fathers' and mothers' conservative values were measured using the same items we used to assess children's conservatism (fathers: α = .78, mothers: α = .77).

Parents' Control Variables. We performed our analyses by partialling out the effects of parents' education (from 1 = primary school certificate to 6 = post-degree specialization), religiosity, and parenthood age (i.e., parents' age at birth of first child).

3.3 Data Analysis

We ran two-level hierarchical regression models on children's conservatism using the Hierarchical Linear Modeling software (Raudenbush & Bryk, 2002).

After running a preliminary unconditional model, we tested HP1 by examining the impact exerted by children's birth order on their conservatism by partialling out the effects of our individual control variables (Model 1). In Model 2, we entered parent's conservatism and other parental characteristics (i.e., education, religiosity, parenthood age), treated as our contextual control variables (at the family level), and we verified if the effect of participants' birth order depended on some of these variables. We performed parallel analyses using the mother's and father's data to make our results more informative than it often happens (indeed, fathers are often neglected in research focusing on youth's socialization: see Barni, Ranieri, & Scabini, 2012; Friedlmeier & Friedlmeier, 2012).

Levels of conservatism between individuals were modelled at level 1:

$y_{ij} = \beta_{0j} + \beta_{1j}\,(gender) + \beta_{2j}\,(age) + \beta_{3j}\,(religiosity) + \beta_{4j}\,(birth\ order) + r_{ij}$

In this equation, β's represent the impact of the individual level variables we used. The

subscript j represents the family of the participants ($j = 1, ..., J$), and the subscript i is for the

individual participants ($i = 1, ..., N_j$). The random effect is represented by r_{ij}.

At level 2, performing two separate analyses for the mother and the father, we analysed the

effect of parents' conservatism and other parental characteristics on the level of conservatism of the

child (by predicting the intercepts $β_{0j}$).

$β_{0j} = γ_{00} + γ_{01}$ (*parents' conservatism*) $+ γ_{02}$ (*parental education*) $+ γ_{03}$ (*parental religiosity*) $+$

$γ_{04}$ (*parenthood age*)$+ u_{0j}$

To test HP2, we analysed the variability of the effect of being firstborn on conservatism; in

particular, we tested the significance of the effect exerted on children's conservatism by the cross

level interaction between being a firstborn and parents' conservatism:

$β_{4j} = γ_{40} + u_{5j}$

In these equations, the u's represent the random coefficients. All of the errors terms of the

other parameters at the individual level in the model were fixed. In the case of a significant

variability, we planned to predict this variability through the introduction of parents' conservatism

($γ_{41}$, cross level interaction).

4. Results

Table 1 presents the descriptive statistics for the study variables and their correlations.

Table 1 about here

Four preliminary unconditional models showed a significant variation of children's

conservatism at the family level, both using mothers' variables and using fathers' variables as

predictors (see Table 2).

A model where we fixed to zero the error terms of the slopes of our individual-level

independent variables (within family) showed that—consistent with HP1—after controlling for

children's gender, age and religiosity, being a firstborn showed a positive relation with

conservatism (effect sizes = .19 for mothers and .18 for fathers)[1]. In other words, firstborns scored

higher than did secondborns on conservatism. The variables included in the   within-family

model explained 22.5% of the variance in the case of mother and 23.2% for father.

Contrary to HP2, however, the between-family variability of the birth order effect showed to

be invariant for both mother, $\chi^2 (88) = 72.57$, $p > .500$, and father, $\chi^2 (88) = 72.51$, $p > .500$. Thus,

the effect of being firstborn on conservatism resulted independent from the parental characteristics.

Indeed, none of parental variables entered in Model 2, parents' conservatism included, resulted to

be connected to the dependent variable.

Table 2 about here

5. Discussion

Sulloway's (1996) theory on the effects exerted by birth order on people's conservatism is

one of the most fascinating approaches to the origins of values: Niche-filling by siblings is

conceived as a factor leading offspring to develop values that are dependent upon their positions

within the family unit. However, its empirical test performed by Sulloway himself, mainly based on

historical quantitative data, has a number of methodological limitations (e.g., Nyman, 2000;

Rodgers, 2000; Townsend, 2000) and even the subsequent tests performed via self-reports are not

fully convincing from the methodological point of view, because they could not properly

disentangle the within- and the between-family influences on children's conservatism (e.g., Førland

et al., 2012; Freese et al., 1999; Kulik, 2004; Zweigenhaft, 2002; Zweigenhaft & von Ammon,

2000). Finally, only one of Sulloway's predictions (firstborns should be more conservative than

laterborns) has been systematically tested in questionnaire studies, while his second hypothesis

(firstborns should be more similar to their parents in the importance given to conservatism than

laterborns) has not.

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[1] The small difference at this level has to be attributed to different missing values in the case of

mother and father.

In this study we aimed at overcoming these limitations, performing the first multilevel analyses to test both of Sulloway's predictions. Our results, consistent as concerns mothers' and fathers' influences on children's conservatism, confirmed Sulloway's first, but not his second hypothesis. Birth order fostered children's conservatism directly, but not in interaction with parents' conservatism. Moreover, the control of children's gender, age, and religiosity, and the addition of a series of between-family variables (i.e., parental education and religiosity, and parenthood age) did not eliminate the direct effect of birth order on conservatism.

Consistent with Barni and colleagues (in press), we conceived conservatism as one of the fundamental value dimensions that serve as guiding principles in people's lives and that differentiate people among them (Schwartz, 1992). However, in social and political psychology there are at least three other conceptions of conservatism (Selvestrel, Russo, Roccato, & Mosso, 2013). According to the first conception, conservatism is a socio-political ideology that may be operationalized in terms of placement on the left-right-axis, of voting behaviour, or of favour towards right-wing policies (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950). Researchers into the second use the label "conservatism" to make reference to personality dynamics leading people to support anti-democratic governments (e.g., Wilson, 1973). In their view, conservatism is preferable to the label "authoritarianism", in that it is less socially undesirable and stigmatising. Finally, according to the third conception (Sidanius, 1976), conservatism is a blend of political and personality variables leading people to be at the same time right-wingers and potentially dangers for democracies.

In our research, parents' conservatism did not influence their offspring's conservatism. At a first glance, this result may look as surprising. However, in the literature strong links between parents' and children's conservatism were found when this construct was conceived and operationalized as a socio-political ideology and attitudes (e.g., Førland et al., 2012; Kulik, 2004). On the contrary, when— as done in our study— conservatism was defined and measured as a general value orientation, modest or even null associations between parents' and children's

conservatism often emerged (e.g., Knafo & Schwartz, 2009). Thus, we could suppose that parents' influences might be more evident on specific and circumscribed aspects of conservatism. Future research aimed at replicating our study using different conceptions of conservatism will be interesting.

Based on our results we could also conclude that firstborns tend to favour the political and social status quo, but not the family status quo. Being a firstborn showed indeed to have effects independent from the conservatism of the family environment, but not to push firstborns to be more predisposed to adopt their parents' conservative values than their younger siblings. This dramatically weakens Sulloway's (1996) idea that "given the relationship between social attitudes of parents and their offspring, no one should expect the eldest son of Karl Marx or Mao Tse-tung to be a social conservative. In terms of their social attitudes, most offspring take after their parents, although firstborn do so more faithfully than their younger siblings" (p. 364).

Sulloway's theory is mainly focused on the influences exerted by the environment on people's conservatism, in that it is based on the idea that, as a function of their birth order, siblings grow up in different environments that require them specific qualities to take parents' attention and care. However, a small but growing research corpus on the genetic origins of political values and attitudes has been recently developed (e.g., Kandler, Bleidorn, & Riemann, 2012). The effects we detected clearly spoke in favour of an environmental influence. However, as it always happens in predictive models, our analyses could not explain a large portion of siblings' conservatism, a part of which may actually have genetic causes. Future research aimed at disentangling the genetic, within- and between-family origins of conservatism could be the new frontier in this field of study.

Our research had some strong points. First, it was the first questionnaire research that tested, beyond the main effect exerted on children's conservatism by birth order, the effects of birth order in interaction with parents' conservatism. Second, it was based on a nice   multi-informant sample, composed of four people from each of the families we have surveyed. Third, it was based on a multilevel approach that allowed us to disentangle the effects exerted on children's conservatism by

within- and between-family variables. Fourth—contrary to what happens in standard research on this topic, that tends to be focused on mothers only (e.g., Murray & Mulvaney, 2012)—we could show similar effects exerted on adolescents' conservatism by their mothers and their fathers.

On the negative side, our sample was not representative of the Italian population. Although Sulloway (1996) claims the effects exerted by birth order on conservatism are invariant as concerns time and space, according to other researchers (e.g., Andeweg & Van Den Berg, 2003; Jennings, Stoker, & Bowers, 2009) Sulloway's theory could hold in specific historical and geographical periods, such as the 1960s in the Western countries, in which the *Zeitgeist* pushed laterborns to rebel. Given that at present Italy is not in a period like this (Caprara, Scabini, & Barni, 2011), our results can be considered a pretty strong confirmation of Sulloway's first hypothesis. However, replications of our research performed in other cultural and socio-political contexts would be very fruitful.

Moreover, in our dataset variables taking into account being vs. not being member of a stepfamily were not available. Thus, we could not take into account the possibility of living in a context "in which the merger of step and half sibling brings about perceived and actual changes in birth order position" (Nyman, 2000, p. 164). However, according to Andeweg and Van Den Berg (2003) this lack of information should not be considered a very severe limitation of research on birth order, because no objective rules to code functional and biological birth order are available and different ways of coding birth order influence the strength, but not the direction of the relations between birth order and the dependent variable.

Thus, as a whole we believe that the strengths of this study largely overcome its limitations. Indeed, it provided a support for Sulloway's family-niche model of development. Moreover, by focusing on siblings while controlling for between-family influences, our results suggested birth order effect on conservatism to be primarily a within-family phenomenon. Researchers interested in explaining this effect should turn their attention to processes that operate to differentiate the

children within the same family and, as concerns conservatism, that cannot be reduced to the

vertical transmission of values from parents to children.

Acknowledgments

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Table 1.

Within Family and Between Family Variables: Descriptive Statistics and Correlations

	Descriptive Statistics				Correlations						
Variables	*Mean*	*SD*	*Min*	*Max*	1	2	3	4	5	6	7
Within Family (N = 184)											
1 Child's conservatism	3.71	0.67	1.85	5.23	-						
2 Gender (Male)	0.38	0.49	0	1	.19**	-					
3 Age	21.63	3.52	12	35	.13	-.01	-				
4 Religiosity	2.60	0.83	1	4	.37**	-.09	-.09	-			
5 Birth order (Firstborn)	0.50	0.50	0	1	.23**	-.05	.60**	.08	-		
Between families (N = 92)											
1 Mother's conservatism	4.06	0.69	2.54	5.54	-						
2 Father's conservatism	4.11	0.70	2.46	5.58	.18**	-					
3 Mother education	3.11	1.30	1	6	-.22**	-.10	-				
4 Father education	3.12	1.24	1	6	-.17*	.05	.20**	-			
5 Mother religiosity	2.79	0.76	1	4	.06	.18*	.01	-.05	-		
6 Father religiosity	2.80	0.76	1	4	.09	.13*	-.01	-.08	.11	-	
7 Motherhood age	26.21	3.23	19	34	.01	-.13	.09	.17	.19**	-.10	-
8 Fatherhood age	31.52	4.69	20	45	.15*	.04	.14	.08	-.16*	-.17*	.41**

Note. ** $p < .01$. * $p < .05$

Table 2.

Multilevel Correlates of Children's Conservatism

	Mothers						Fathers					
	Unconditional Model		Model 1		Model 2		Unconditional Model		Model 1		Model 2	
	Coef. (*SE*)	*t*	Coef. (*SE*)	*t*	Coef. (*SE*)	*t*	Coef. (*SE*)	*t*	Coef. (*SE*)	*t*	Coef. (*SE*)	*t*
Intercept	3.71*** (.05)	71.57	2.72*** (.36)	7.48	2.72*** (.37)	7.28	3.68*** (.05)	70.01	2.57*** (.36)	7.22	2.08*** (.34)	6.08
Within family												
Gender (Male)			-.18 (.10)	-1.83	-.20* (.10)	-1.95			-.21* (.10)	-2.07	-.20 (.10)	-1.90
Age			.01 (.02)	0.72	.01 (.02)	.69			.01 (.02)	.94	.04 (.01)	
Religiosity			.27*** (.06)	4.47	.28*** (.06)	4.49			.30*** (.06)	4.99	.31*** (.06)	4.96
Birth order (Firstborn)			.20* (.10)	2.07	.20* (.10)	1.98			.19* (.07)	1.96	.18* (.10)	1.95
Between families (β_{0j})												
Parents' conservatism					.06 (.06)	.95					.08 (.07)	1.16
Parental education					-.03 (.04)	-.73					.02 (.04)	.62

Parental religiosity			-.09 (.07)	-1.31		-.04 (.07)	-.56
Parenthood age			-.01 (.01)	-.05		-.01 (.01)	-.95
Var. Comp.							
Within Family	0.396	0.307	0.307		0.396	0.304	0.303
Between Families	0.052	0.066	0.065		0.056	0.062	0.066
β_{0j}							
χ^2	114.96*	126.17**	120.13**		115.67*	122.85*	119.98*

Note. *** $p < .001$. ** $p < .01$. * $p < .05$.