

Sibling Position and Risk Attitudes: Is Being an Only Child Associated with a Person's Risk Tolerance?

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The influence of birth order on personality has been studied for several decades, but little research has been conducted on the association between sibling position and risk tolerance. The purpose of this study was to examine the relationship between being an only child and risk-taking attitudes. Data from the 2010 National Longitudinal Survey of Youth, 1979 sample was used to test the hypotheses that only children and first borns are similar, only children exhibit a lower risk tolerance when compared to those with siblings, and only children exhibit a lower risk tolerance when compared to those with siblings when first borns are removed and only borns are compared with later borns. Results did show that only children are similar to first borns in nearly every domain of risk tolerance considered. Furthermore, they do not exhibit dramatically different risk attitudes than those with siblings when the variables of sex, locus of control, and net worth are controlled.

Keywords: risk tolerance; birth order; self-assessed risk; life change risk

INTRODUCTION

The notion that family of origin variables play a role in shaping risk-taking attitudes has been of interest to not only behavioral economists and psychologists for several decades (e.g., Lawson & Brossart, 2004; Mazumder, 2008; Sampson & Hancock, 1967), but also more recently to the emerging field of financial therapy (Grable & Britt, 2011). Economists are interested in the potential association between family structure and risk-taking as a way to explain why some individuals are more inclined to save and invest. Psychologists are interested in how family structure influences a child's cognitive growth

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and personality and how early childhood experiences shape later life choices. Similarly, financial therapists are also interested in this concept. If negative cognitive beliefs about money are reinforced during childhood, this may carry emotional triggers well into adulthood that lead people to make poor money decisions. Furthermore, the possibility that sibling position may shape personality and play a part in determining a person's overall financial well-being is thought-provoking.

The psychological and financial intersection of family structure research, in relation to risk attitudes, is most evident in the domain of birth order. The concept that birth order (i.e., being born first, in the middle, or last) may influence psychological maturity and attitudinal development was first postulated by Alfred Adler (1964). Adler's original hypothesis was that parents treat children born at different times in diverse ways. Changes in parenting are based on past experiences, behavioral modifications, and parental expectations. Roszkowski (1999) summarized the situation this way:

In general, it is thought that parents exert greater control over the early life of the firstborn child and instill in him or her the need to be dependable and act responsibly. To the child, this means not taking unnecessary chances (p. 167).

Although birth order research is widespread in the psychological literature, there is a distinct lack of similar research in the economics, finance, financial planning, and financial therapy literature. The general consensus among those who have tested the direct association between birth order and risk attitudes is that birth order appears to be related to risk tolerance, which is broadly defined as the willingness to engage in behavior when the outcome may potentially be negative and unknown (Grable, 2008). For instance, first borns are generally thought to exhibit less risk tolerance (i.e., be more risk averse) compared to younger (later born) siblings in the same family (Gilliam & Chatterjee, 2011). Sulloway (1997) observed that first born children tend to be less willing to accept high risks compared to their younger siblings. His explanation was that the oldest child most often identifies with his/her parents, and as such, is more likely to support authority figures and respect the status quo. On the other hand, younger siblings (i.e., later borns) are generally considered more likely to rebel against their parents and authority. Liberalization in parenting style may also exacerbate this tendency (Koselka & Shook, 1997).

Nearly all attempts by economists, and those interested in adapting psychological and therapeutic concepts into risk-tolerance research, have addressed the birth order and risk attitude question very broadly. Therefore, the purpose of this study is to move deeper into the analysis of the association between birth order and risk tolerance. More specifically, this study was designed to test the association between being an only child and the degree to which a person is willing to take risk. As discussed later in the paper, it is generally thought that only children are most similar to first born children in larger families. If true, then the risk attitudes of only children should lean towards being more conservative. This possibility is examined in this study.

LITERATURE REVIEW

The Case For Birth Order Effects

Birth order research has historically been premised on the concept that there are meaningful and significant differences among first born, second born, middle, and last born children. What started out as a family structure hypothesis, (see Adler, 1964) has since become a pop culture assumption describing reality (Ernst & Angst, 1983). Adams (1972) and Sulloway (1995) both provided an excellent overview of the personal characteristics linked with birth order. For instance, first born children are thought to be assertive, authoritative, and responsible. Second born and middle children tend to be more competitive and unique in their approach to solving choice dilemmas. Psychologically, second born and middle children are thought to sometimes feel overlooked, which causes them to be more competitive and interested in receiving complements and support. Last born children are often marked as being socially oriented and having high self-esteem, which results from extra attention being paid to them in traditional households. This often also fosters a sense of self-entitlement in youngest children, and they occasionally attain the labels of being bossy and critical.

Much of the existing literature linking birth order to risk tolerance shows that younger siblings are more risk tolerant than first born children (Gilliam & Chatterjee, 2011; Roszkowski, 1999). Some have indicated that this willingness to engage in risk-taking activities results from an upbringing where the youngest in a family is typically rescued financially, physically, and emotionally by others in the household if their decision leads to a negative outcome (Podaras, 2013). Podaras (2013) also pointed out that as these children mature physically, they sometimes forget that their parents and older siblings are no longer there to rectify a poorly made decision. Older siblings, on the other hand, are often found to be risk averse. This may result from childhood experiences, which indicate that being patient leads to better outcomes, whereas for later born children, being patient often leads to suboptimal allocations between and among siblings (USC, 2009).

Only children effects. The existing literature on only children is often conflicting. There are those who argue that only children are most closely aligned with older children who have siblings. As such, only children are thought to share attributes with first borns, such as respect for authority (Gilliam & Chatterjee, 2011). Only children and first borns are also thought to share similar intellectual development (Falbo Polit, 1986). After all, someone is an only child only until another sibling enters the family. Others suggest that only children resemble last born children in the sense that only children are often self-centered, egotistical, and exhibit patterns of criticism and perfectionism. Additionally, like last borns, only children are also known to display a high degree of self-entitlement (Adams, 1972).

Other researchers maintain that only children are unique and are no more or less closely linked with large family definitional tendencies. Falbo and Polit (1986) asserted these wide range of opinions are due to researchers trying to explain differences with only children that have been erroneously assumed after studies are complete. Their meta-

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analyses showed that the key ingredient to the success of only children stems from parent-child relationships that occur when more attention and resources are allocated to one child. Falbo and Polit (1986) tested birth order effects against achievement, adjustment, character, intelligence, and sociability, and in each situation, only children were found to be at a significant advantage relative to their peers with siblings. Only children also tend to be goal-oriented and more likely to invest in their human capital compared to others.

In relation to risk tolerance, there have been few published records documenting how only children differ from children born into families with multiple children. Additionally, the bulk of literature on only children has been motivated by curiosity and convenience rather than formal theory (Falbo & Polit, 1986). This is an intriguing line of study because data from such studies, if more readily available, may provide insight into the relation to the association between only child status and risk tolerance.

Theoretical orientations. There are numerous theoretical reasons why birth order should be related to a person's willingness to take risk. Adams (1972) identified a number of theoretical justifications, linking birth order to individual differences. The first is related to differences in achievement based on intrauterine or physiological differences produced at birth. Using this theoretical perspective, individual differences can be traced back to the greater attention given by a new mother during her first pregnancy. Theoretically, the first-born fetus receives more attention and nutrients from the mother that helps the child grow to be healthier, stronger, and more intelligent. Later born children, on the other hand, must be more creative and willing to take risk to advance in the family unit.

Another theoretical justification for birth order differences can be found in Adler's (1928) notion of dethronement. This theoretical framework suggests that older children are subject to competition for a parent's attention, and as such, they become independent earlier in life, whereas younger children do not encounter such competition. This helps explain birth order differences in larger families. Some theorists have attempted to explain birth order patterns by attributing personal differences to parental styles. Within this framework, it is assumed that older children receive more intense, but less consistent, attention from parents. As more children enter a family, parental styles tend to become more relaxed and consistent as parental anxiety declines. This helps explain why younger children tend to be less dependent on others.

Sibling influence theory offers a related explanation. Using this framework, some researchers have argued that younger children learn life roles by competing with siblings for resources. It is possible to explain a tendency for younger children to be willing to take excessive risks as a response to the influence of older siblings.

Family economic theories have also been used to explain birth order differences. Unfortunately, the economic perspective has been inconsistently applied. Some have argued that older children have access to more family wealth, whereas others have noted that younger children benefit from accessing resources from parents and older siblings. Some have used the family economic perspective to suggest that birth order differences are associated with family socioeconomic status. In wealthier families, older children receive

more parental encouragement of financial support. In low socioeconomic households, the youngest child receives more benefits once his or her older siblings leave the household.

The Case Against Birth Order Effects

Existing psychological research on birth order and only children effects is often conflicting. As discussed above, some researchers strongly believe that birth order has a meaningful impact on attitudes and behaviors (Sulloway, 1995; 1997). Others are less certain. In their landmark book, *Birth Order: Its Influence on Personality*, Ernst and Angst (1983) concluded that birth order alone has no meaningful influence on personality, as measured by extraversion, neuroticism, agreeableness, conscientiousness, and openness (i.e., the Big Five personality traits). More important factors included socioeconomic status and genetic disposition. Others have noted that the role of birth order in shaping personality dispositions is, at best, short-lived. For instance, Harris (2006) concluded that family situation factors do not always endure over a person's lifetime. People change, adapt, and alter their behavior throughout the lifespan (De Fruyt & Bartels, 2006).

It is possible that the effects of birth order are really an artifact or an indicator of other personal characteristics. For example, both only and oldest children have been found to exhibit an internal locus of control perspective. Falbo and Polit (1986) explained that the development of an internal locus of control may be facilitated by parents who respond quickly to their children's behavior. This is likely true regardless of birth order. New parent inexperience may facilitate the development of achievement motivation in only children and first borns, as well as those from small families. For example, first time parents often underestimate the time it takes for a child to be toilet trained, speak a complete sentence, or sleep continuously through the night. There is evidence that parents maintain these heightened expectations about their children beyond this early period. It is possible that what really matters is locus of control rather than birth order (Koh, 1996). This possibility has not been fully examined in the literature in relation to risk tolerance attitudes.

Seff, Gecas, and Frey (1993) remarked that, "It is possible, however, that there has never been much of a relationship between birth order and personality" (p. 231). They were commenting on the fact that they could not find any positive relationships regarding birth order and risk taking. Seff et al. (1993) concluded that factors such as self-efficacy, which is a factor strongly associated with locus of control, appear to be better predictors of risk attitudes. It is also possible that family and personal characteristics are more important in shaping attitudes and behavior (Behrman & Taubman, 1986). Of particular importance are sex and wealth (Gilliam & Chatterjee, 2011). These types of variables, when incorporated into studies designed to test for birth order effects, tend to erase such effects. For example, Freese, Powell, and Steelman (1999) reported that when they examined two measures of social attitudes, they could not find any support for birth order claims. They concluded that factors, such as sex and social class, which can be proxied with wealth, linked with attitudes more strongly than birth order.

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Summary

To summarize, the literature surrounding birth order in the domain of psychology is both vast and conflicting, as are the number of theoretical perspectives used to explain birth order differences. At a minimum, the notion that there are differences among children with siblings because of their birth order has become a culturally accepted certainty. Whether or not empirical evidence exists to support this notion has become less important compared to how people perceive the role of birth order in shaping personal and societal outcomes. Within the context of economics, finance, financial planning, and financial therapy, the few studies that have taken birth order into account have tended to support the cultural assumption that first borns are less willing to take risk than later born children (e.g., Gilliam & Chatterjee, 2011). While this conclusion may be open to discussion, the purpose of this study is to add to the literature on risk tolerance by examining other aspects of birth order. Specifically, this study adds to the literature by examining how only children differ from others in relation to their willingness to take risk.

Hypotheses

The existing literature on the topic of only children and risk attitudes is limited. Even so, it is possible to look to the wider literature in psychology to generate association propositions. For example, if it is true that only children are more like first borns than others, no differences should be noted between only children and first borns in relation to risk tolerance. Second, only children should exhibit a lower level of risk tolerance when compared to those with siblings. Finally, this pattern should hold true when first borns are removed from the analysis and only borns are compared to later borns. As such, in this study the following hypotheses were tested:

- H₁: No differences will be noted between only children and first borns in relation to risk attitudes.
- H₂: Only children will exhibit a lower risk tolerance when compared to those with siblings.
- H₃: Only children will exhibit a lower risk tolerance when compared to those with siblings when first borns are removed and only borns are compared with later borns.

METHODOLOGY

Data

Data from the 2010 National Longitudinal Survey of Youth, 1979 sample (NLSY79) was used to test the hypotheses. The NLSY79 is a U.S. Department of Labor, Bureau of Labor Statistics dataset. The sample consists of men and women born in the years between 1957 and 1964. The NLSY79 is a nationally representative sample of individuals who were 14–22 years old when they were first surveyed in 1979. These individuals were interviewed annually through 1994 and have since been interviewed on a biennial basis. Given natural attrition and a realignment of sampling methodologies in 1990, the sample

now represents a cross section of U.S. households. Because of variable choices and the total number of questions answered by respondents, the useable sample for each item in the analysis ranged from 7,015 to 7,504 individuals. For analysis purposes, a listwise deletion process was employed to normalize the sample size for each analytical process.

Risk-Tolerance Items

Among those who study risk taking, risk attitudes are generally classified into one of the following domains: (a) financial, (b) health/safety, (c) recreational, (d) ethical, and (e) social (Weber, Blais, & Betz, 2002). Seven self-assessed risk-tolerance items were selected from the dataset that roughly matched these risk domains. These items were assessed by asking respondents the following question: "People can behave differently in different situations. How would you rate your willingness to take risks in the following areas?" Seven areas were listed: (a) driving, (b) financial matters, (c) occupation, (d) health, (e) interpersonal, (f) romantic relationships, and (g) major life changes. For each area, respondents were asked to rate themselves on the following 10-point scale: 0 = *unwilling to take any risks* and 10 = *fully prepared to take risks*. Descriptive statistics for each item are shown in Table 1.

An additional general risk-tolerance item was included in the study. This item was included as a gauge of respondents' overall tolerance for risk. Respondents were asked the following question: "Are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?" Respondents were then instructed to rank their willingness on a ten-point scale, where 0 means *unwilling to take any risks* and 10 means *fully prepared to take risks*. The mean, median, and standard deviation scores associated with this item were 4.82, 5.00, and 2.96, respectively.

Finally, a new variable was created. This variable was called "Total Risk" and was comprised by summing scores from each respondent's scale choices for driving, financial, occupation, health, interpersonal, romantic, and life change risk-tolerance. The mean and standard deviation for the item was 24.30 and 14.64, respectively. Correlations among the items were estimated (Table 3). The seven risk items were found to be positively associated, suggesting that it is possible to combine each item into a summated scale score of risk-tolerance. A principal components analysis technique, similar to the one performed by Grable and Rabbani (2013), was used to confirm the uni-dimensional nature of the scale. As shown in Table 1, only one factor was extracted. The analysis was conducted using an Eigen greater than 1, with 25 iterations, criteria. Data were rotated using varimax rotation. The result was confirmed with an oblimin rotational criterion factor analysis. All of the items loaded well above the typical cut point of .40. Bartlett's test of sphericity was not significant ($\chi^2 = 14618$, df = 21), and overall, the Kaiser-Meyer-Okin measure of sampling adequacy was robust (.86). These statistical outcomes were interpreted to mean that the resulting risk scale was robust.

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Table 1
Principal components analysis results

Risk-Tolerance Item	Factor Weight	Mean Score	Standard Deviation
Driving Risk Tolerance	.68	2.36	2.96
Financial Risk Tolerance	.75	3.61	2.77
Occupational Risk Tolerance	.77	3.92	3.24
Health Risk Tolerance	.67	2.55	2.89
Interpersonal Risk Tolerance	.64	4.10	2.89
Romantic Risk Tolerance	.66	3.50	3.38
Life Change Risk Tolerance	.73	4.25	2.94

Notes: Varimax and Oblimin Rotations

Birth Order

A specific birth order variable was not available in the NLSY79 dataset; however, family information, which includes the number of siblings and whether each sibling is older or younger than the respondent, was available. For the purposes of this study, only data from respondents who reported having five or less siblings was used. Coding was then developed to separate individuals into birth order ranging from 1st born through 6th (or last) born. A unique code was developed for only children. Table 2 shows the frequency distribution of birth order in the dataset.

Table 2
Frequency of birth order in the dataset

Percent of Respondents (%)		
Birth Order	1	15.4
	2	15.5
	3	12.2
	4	8.2
	5	5.2
	6	8.7
	Total	65.3
Only Children		34.7
	Total	100.0

Data Analysis

Hypotheses were tested using a combination of correlation, *t*-tests, and regression analyses. As discussed below, follow-up analyses were conducted that utilized control variables of the sex, locus of control, and net worth of respondents. The choice of these control variables was made based on an analysis of the literature that showed these key variables account for much of the variation in birth order effects in previous studies (e.g., Freese et al., 1999). In these analyses, sex was coded 1 = *male* and 2 = *female*. Slightly more

men (50.50%) participated in the survey than women (49.50%). Locus of control was measured using Rotter's Internal-External (I-E) Locus of Control scale (Rotter, 1966). Scales scores indicated each respondent's belief in the degree of control they have in directing their lives through self-motivation and self-determination (i.e., internal control) or to the extent that their destiny is determined by external forces (i.e., external control). Respondents were asked to select from a prescribed number of statements that represented either an internal or external control preference. Scores on the scale's four items were summed, resulting in a range of scores between 4 and 16, with high scores suggesting an external locus of control perspective. The mean and standard deviation scores were 8.76 and 2.39, respectively. Finally, household net worth was evaluated by taking NLSY79 wealth estimates based on a formula that subtracted liabilities from assets. The mean net worth among respondents was \$235,036.93 ($SD = \$539,417.46$).

RESULTS

Table 3 shows the correlation estimates among the risk attitude items evaluated in the study. Not surprisingly, all of the associations were positive and significant. Findings suggest that respondents were relatively consistent in their risk attitude self-evaluations. These initial findings provided evidence that the risk-tolerance variables had, on their face, validity for further analysis.

Table 3
Non-causal associations between and among the risk-tolerance items

Risk Taker	Driving	Financial	Occupational	Health	Interpersonal	Romantic	Life Change	Total risk
Risk Taker	1.00							
Driving	.31**	1.00						
Financial	.61**	.44**	1.00					
Occupational	.53**	.45**	.57**	1.00				
Health	.28**	.50**	.38**	.42**	1.00			
Interpersonal	.34**	.29**	.37**	.38**	.33**	1.00		
Romantic	.32**	.32**	.35**	.39**	.33**	.40**	1.00	
Life Change	.48**	.34**	.49**	.50**	.33**	.39**	.47**	1.00
Total Risk	.59**	.68**	.73**	.77**	.67**	.64**	.68**	.72**
								1.00

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

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Hypothesis One

The first hypothesis stated that no differences would be noted between only children and first borns in relation to risk attitudes. Results of the hypothesis test, using a listwise missing value criterion, are shown in Table 4. For the purpose of this analysis, 735 respondents were coded as being an only child, while 1,509 were coded as first borns. Only one difference between the two groups was noted; namely, that of interpersonal risk, with first borns reporting a slightly higher level of risk tolerance in this domain. In all other respects, only children and first borns were similar. Overall, initial support was found for the first hypothesis.

Table 4
Comparison of risk attitudes of only children and first borns

Risk Item	Child	Mean	Std. Dev.	t
Risk Taker	Only Child	4.99	3.00	1.08
	1st Born Child	4.85	2.79	
Driving Risk	Only Child	2.46	3.07	0.44
	1st Born Child	2.40	2.91	
Financial Risk	Only Child	3.66	2.82	-0.76
	1st Born Child	3.75	2.72	
Occupation Risk	Only Child	3.97	3.35	-0.47
	1st Born Child	4.04	3.12	
Health Risk	Only Child	2.65	3.09	0.11
	1st Born Child	2.64	2.79	
Interpersonal Risk	Only Child	4.03	2.92	-2.54*
	1st Born Child	4.35	2.81	
Romantic Risk	Only Child	3.48	3.39	-1.15
	1st Born Child	3.66	3.37	
Life Change Risk	Only Child	4.42	3.05	0.38
	1st Born Child	4.37	2.81	
Total Risk	Only Child	24.67	15.05	-0.82
	1st Born Child	25.21	14.36	

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

Hypothesis Two

The second hypothesis stated that only children will exhibit a lower level of risk tolerance when compared to those with siblings. Table 5 provides an overview of test results for this hypothesis based on a listwise deletion of missing values, which resulted in 735 only children and 6,270 other children. Initial support for the hypothesis was obtained. That is, only children exhibited the same responses as respondents with siblings on all of the risk-tolerance items.

Table 5
Comparison of risk attitudes of only children and those with siblings

Risk Item	Child	Mean	Std. Dev.	t
Risk Taker	Only Child	4.99	3.00	-1.84
	Later Borns	4.78	2.91	
Driving Risk	Only Child	2.46	3.07	-0.85
	Later Borns	2.36	2.94	
Financial Risk	Only Child	3.66	2.82	-0.46
	Later Borns	3.66	2.82	
Occupation Risk	Only Child	3.97	3.35	-0.53
	Later Borns	3.90	3.21	
Health Risk	Only Child	2.65	3.09	-1.10
	Later Borns	2.53	2.83	
Interpersonal Risk	Only Child	4.03	2.92	0.64
	Later Borns	4.10	2.86	
Romantic Risk	Only Child	3.48	3.39	0.29
	Later Borns	3.52	3.37	
Life Change Risk	Only Child	4.42	3.05	-1.72
	Later Borns	4.22	2.91	
Total Risk	Only Child	24.67	15.05	-0.74
	Later Borns	24.25	14.58	

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

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Hypothesis Three

There was a possibility that findings shown in Table 5 were the result of first borns being included in the other category (i.e., first borns in the analysis had siblings). Given this prospect, the analysis was rerun to test the assumption that only children will exhibit a lower level of risk tolerance when compared to those with siblings when first borns were removed from the dataset. Results are shown in Table 6. Based on a listwise deletion criterion, 735 only children and 4,761 others were included in the analysis. Only children were found to self-identify as more willing to take risks (i.e., subjective evaluation of their risk tolerance) and to have a higher tolerance for life change risk. The two groups were similar on the other domains of risk. These findings were surprising in the context of the historical literature and common assumptions regarding birth order effects where only children should have exhibited lower scores on some or all of the risk-tolerance items. Instead, the results in the study revealed that only children and children with siblings were remarkably similar.

Table 6
Comparison of risk attitudes of only children and those with siblings, excluding first borns

Risk Item	Child	Mean	Std. Dev.	t
Risk Taker	Only Child	4.99	3.00	-1.98*
	Other	4.75	2.94	
Driving Risk	Only Child	2.46	3.07	-0.94
	Other	2.35	2.95	
Financial Risk	Only Child	3.66	2.82	-0.87
	Other	3.57	2.74	
Occupation Risk	Only Child	3.97	3.35	-0.84
	Other	3.86	3.24	
Health Risk	Only Child	2.65	3.09	-1.38
	Other	3.86	3.24	
Interpersonal Risk	Only Child	4.03	2.92	-0.81
	Other	4.02	2.87	
Romantic Risk	Only Child	3.48	3.39	-0.04
	Other	3.48	3.37	
Life Change Risk	Only Child	4.42	3.05	-2.07*
	Other	4.18	2.93	
Total Risk	Only Child	24.57	15.05	-1.25
	Other	23.95	14.63	

Note: *p < .05, **p < .01

Summary Examination

The initial hypotheses results were interesting in several ways. Results from the three analyses were conflicting. In the first analysis, only children and first born children were found to be very similar in their tolerance for risk. This finding mirrored that of the general literature. However, in the second and third analyses, very few differences were noted between only children and those with siblings. To complicate matters, the two

situations in which differences were noted—overall risk taking (i.e., risk taker) and life change risk-tolerance—only children exhibited high scores. Given the contradictory nature of these findings, two additional analyses were conducted. The first test, as shown in Table 7, was developed to measure the effect size of the statistical difference between only children and those with siblings (excluding first born children) on overall risk tolerance (i.e., risk taker) and life change risk tolerance. These variables were regressed on the birth order variable. As illustrated, the regressions were statistically significant; however, the effect size of the relationship was very small.

Table 7
Regression analysis for effect size of birth order variable on risk attitudes

	Risk Taker			Life Change Risk		
	B	SE B	β	B	SE B	β
Only Children and Later Borns	0.26*	0.11	0.03	0.27*	0.11	0.31
R ²	0.001			0.001		
F	5.16*			5.79*		

Note: *p < .05, **p < .01

A second test was undertaken to further examine the association between being an only child and risk-tolerance. In this test, risk attitudes were compared between being an only child and being a child with siblings (excluding first born children). Similar to the previous test, overall risk taking (i.e., self-assessed risk taker) and life change risk-tolerance scores were regressed on the birth order variable. In order to determine the general effect of being an only child, the model controlled for each respondent's sex, locus of control, and household net worth. These control variables were chosen to match factors identified in the literature review that have been shown to provide an alternative explanation to traditional birth order relationships (see Falbo & Polit, 1986). Results are provided in Table 8.

Table 8
Regression analysis for significance of birth order variable on risk attitudes controlling for sex, locus of control, and net worth

	Risk Taker			Life Change Risk		
	B	SE B	β	B	SE B	β
Only Children and Later Borns	0.26	0.13	0.03	0.18	0.14	0.02
Sex	-0.56**	0.09	-0.10	-0.24**	0.09	-0.04
Locus of Control	-0.02	0.02	-0.02	0.03	0.02	0.03
Net Worth	.000**	0.00	0.09	.000	0.00	0.00
R ²	0.02			0.002		
F	20.11**			2.84*		

Note: *p < .05, **p < .01

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As illustrated, once sex, locus of control, and net worth were controlled, the statistical significance of being an only child disappeared from both regression models. Stated another way, while a small only child effect was present in the bivariate analyses of risk attitudes, the meaningfulness of the relationship was diminished once other control variables were evaluated. It turns out that only sex (being male) and net worth (increased levels) were positively associated with being a self-identified risk taker. Sex was also identified to be associated with tolerance for life change risk; however, in this case, women were found to hold more risk-averse attitudes compared to men.

DISCUSSION

Only children are thought, within modern American cultural terms, to be status quo-oriented and sometimes self-centered and egotistical. Researchers, including Falbo and Polit (1986), have asserted that only children are also thought to be more goal-oriented than others and to hold an internal locus of control perspective. However, when compared to others with siblings, only children are often considered to be similar to first borns, especially in relation to holding risk-tolerance attitudes that are more conservative and risk-averse (Sulloway, 1997). The purpose of this paper was to examine these possibilities using a robust nationally representative dataset. This type of research is important in the context of economics, finance, financial planning, and financial therapy, as both practice management and explanatory tools are developed to explain saving and investing behavior. Researchers, financial service professionals, policymakers, and practitioners need reliable information about the personal characteristics of consumers that shape attitudes and decisions. Given the popularity of birth order thinking in the general culture, gaining a better understanding of this factor is an important activity.

In some ways, results from this study mirror generally held perceptions. In other ways, however, findings contradict popular culture stereotypes. Results did show that only children are similar to first borns in nearly every domain of risk tolerance. The only exception being interpersonal risk tolerance. Interestingly, only children were found to be more risk tolerant than first borns in this risk domain. It is important to note, however, that the effect size of the mean difference was not that large. For all intents and purposes, it is reasonable to conclude that only children and first borns are more alike in terms of risk attitudes than otherwise.

Other results from the study are a bit more controversial. In general, only children did not exhibit dramatically different risk attitudes than respondents with siblings. Differences between the two groups were noted for self-assessed risk attitude (i.e., risk taker) and life change risk-tolerance. In both situations, only children reported higher scores on the items than others. This finding conflicts with much of the existing literature. One possible reason for this surprising result is that those with siblings, especially later borns, likely have less tolerance for risk because they have a spectating advantage over their older siblings. If an older sibling makes a mistake and suffers immense consequences, a younger sibling may be less likely to make that same mistake because they possess more information than the older sibling did at the time he/she made the decision. Later borns also benefit in not only learning from older siblings' mistakes, but successes as well.

Younger siblings may learn what to do, and more importantly what not to do, from others in the household. Only children, however, do not have this perspective.

This hypothesis may be a moot point. It turns out, in this study, that controlling for a respondent's sex, locus of control, and wealth diminished the meaningfulness of being an only child on both self-assessed risk-tolerance and life change risk-tolerance. This final result is in line with conclusions presented by Ernst and Angst (1983) and Harris (2006). Harris, in particular, noted that at the early stages of the lifecycle, birth order may be meaningful in shaping behavior and attitudes, but the influence of birth order factors likely diminishes over time, with other variables, including socioeconomic status, having a more direct influence on personality, intelligence, and attitudinal development.

Implications for Financial Therapy

Results from this study indicate that financial therapists and other financial service professionals ought to take great care when linking birth order information with a client's assumed tolerance for taking risks. While there does appear to be some birth order effect, this is only true in a bivariate manner; however, the relationship between being an only child was opposite to what was theoretically predicted. Only children were found, in this study, to be more risk tolerant than others in the domain of general risk tolerance and life change risk tolerance. In terms of financial risk tolerance—a variable of great interest to financial therapists—no differences were noted between only children and others.

It is worth noting that when key covariates were incorporated into the analyses (i.e., sex, wealth, and locus of control), all birth order effects disappeared. In the simplest of terms, these covariates appear to explain a greater level of variance in risk tolerance than birth order. Rather than rely on birth order as an indicator of risk tolerance or as variable closely associated with risk attitudes, financial therapists should assume that birth order is of limited value in explaining the risk tolerance of clients.

LIMITATIONS AND CONCLUSIONS

One of the major limitations of this study is the self-report of the risk-tolerance assessments used in NLSY79 data set. Since respondents replied to a survey rather than participating in a controlled experiment, this could have skewed the results due to the respondent's cognitive biases about themselves. Furthermore, questions may not have been fully understood by those answering the questions. It is also possible that the risk items were measuring another construct related to risk tolerance. Further research is needed to determine the validity of the items. Future studies could control for other covariates known to be associated with risk tolerance. Only three covariates were used in this study. While these covariates were enough to minimize the effect size of birth order, it is possible that the inclusion of other variables, such as marital status, family size, and psychosocial variables, might reverse this pattern and improve the explanatory effect of birth order.

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In closing, the implications from this study for financial therapy professionals are as follows. First, birth order likely is an important factor in shaping early childhood perceptions, and as such, birth order should be evaluated as part of the client data gathering process. However, the role of birth order is probably much more relevant to other planning and therapy applications than in the evaluation of risk tolerance. Second, rather than assuming that birth order is related to risk-tolerance attitudes, practitioners would be better served assuming the opposite. Controlling for other factors, birth order and being an only child was not found to have a meaningful effect on self-evaluated risk tolerance. No evidence was found linking birth order and financial risk tolerance. Third, given the somewhat contradictory findings from this study, additional research on the topic may be warranted. The surprising results reported here may, in fact, be more robust than some early studies. Even so, clinical assessment of risk attitudes and risk taking behavior should provide additional insights into the role birth order plays in shaping attitudes that have an impact on household financial management topics.

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