

Original Article

Does Birth Order and Academic Proficiency Influence Perfectionistic Self-presentation Among Undergraduate Engineering Students? A Descriptive Analysis

Preeti Tabitha Louis, Navin Kumar¹

ABSTRACT

Background: Perfectionism is a multifaceted concept. It had both advantages and disadvantages. Perfectionistic traits have been associated with leadership and very intellectual people. The present study is an attempt to understand if engineering students possess perfectionistic orientation and whether it influences self-efficacy, social connectedness, and achievement motivation. **Materials and Methods:** The present study adopts a random sampling design to evaluate the presence of perfectionism as a personality trait among undergraduate engineering students ($N = 320$). Standardized inventories such as Almost Perfect Scale-Revised were administered first to identify perfectionists and second to differentiate the adaptive from the maladaptive perfectionists. Scheduled interviews were conducted with students to obtain information regarding birth order and family functioning. **Results:** Findings from the study reveal that there were a significant number of maladaptive perfectionists and that they experienced higher levels of personal and societal demands leading to a negative emotional well-being in comparison to the adaptive perfectionists. We also observed that first-born children were more likely to display a perfectionistic self-presentation and from scheduled interviews, we understood that paternal influences were stronger when it came to decision-making and display of conscientiousness. **Conclusion:** The study draws on important implications for helping students to understand perfectionism and to respond to demands of the family and societal subsystems in a positive and an adaptive manner.

Key words: Adaptive, coping, engineering, perfectionism, personality

INTRODUCTION

Perfectionism may be defined as “setting excessively high standards of performance in conjunction with a

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Louis PT, Kumar N. Does birth order and academic proficiency influence perfectionistic self-presentation among undergraduate engineering students? A descriptive analysis. Indian J Psychol Med 2016;38:424-30.

Access this article online	
Website: www.ijpm.info	Quick Response Code 
DOI: 10.4103/0253-7176.191388	

Senior Demonstrator in Psychology, Department of Behavioral Sciences, College of Nursing, CMC Hospital, ¹School of Social Sciences and Languages, VIT University, Vellore - 632 014, Tamil Nadu, India

Address for correspondence: Prof. Preeti Tabitha Louis
Senior Demonstrator in Psychology, Department of Behavioral Sciences, College of Nursing, CMC Hospital, Vellore, Tamil Nadu, India.
E-mail: preetilouis@hotmail.com

tendency to make overly critical self-evaluations.”^[1] Perfectionism differs from a healthy attitude of striving to achieve. A perfectionist personality style is not viewed as a disorder but rather as a vulnerability factor in producing depression and other psychological problems in adults, adolescents, and children.^[2] According to Hamachek, individuals who engaged in a “relaxed and careful” pursuit of activities and evaluated themselves against high but reasonable self-standards were adaptive, and a maladaptive or neurotic individual is one who engaged in a “tense and deliberate” pursuit of unreasonable expectations.^[3] Adaptive perfectionists derive pleasure from their striving whereas maladaptive perfectionists “never seem to do things good enough to warrant that feeling.”

Adaptive perfectionism has been linked to conscientiousness,^[4] overcoming procrastination,^[5] and self-efficacy.^[6] Perfectionist strivings can be associated with higher satisfaction with life.^[7] Those with adaptive perfectionism tend to have high self-esteem and are relatively immune to the long-term detrimental effects of perceived failures.^[8] Positive associations between perfectionist young adults and better physical health,^[9] as well as less engagement in health-risk behaviors such as smoking and drinking,^[10] have been identified. When those with maladaptive perfectionist personality styles show patterns of concern over mistakes and consistent doubts about their actions, they can be identified as “clinically significant perfectionists.”^[11] Although possessing a perfectionist personality styles can be advantageous in fostering high achievement, clinically significant perfectionism renders individuals vulnerable to depression and becoming inflexible toward changing their way of thinking despite the negative impact that the pursuit of perfectionism has on their quality of life. Perfectionists have been proven to be engaging in high levels of brooding and ruminating^[12] where they go over and over their mistakes. They live with a constant expectation of negative consequences^[13] and have a tendency to. In summary, clinically significant perfectionists have a little respite from sustained feelings of decreased self-worth, low self-esteem, shame, rumination about mistakes, and expecting only aversive outcomes. The present study seeks to explore the presence of perfectionism among undergraduate engineering students and to identify those with maladaptive perfectionism. Researchers also explore the influence of birth order on perfectionistic self-presentation. The study may be useful in generating strategies for healthy strivings and providing alternative ways of coping within the family and societal subsystems.

MATERIALS AND METHODS

Settings

The present study was conducted at Vellore Institute of Technology (VIT) University, Vellore. Three hundred and twenty ($N = 320$) undergraduate engineering students, between the ages of 17 and 23 years ($M = 19.68$, standard deviation [SD] = 1.44), were randomly contacted to complete an online personality survey. After obtaining informed consent, students were requested to complete an online personality test within a span of 3 days after which the link was subject to expiry. Students initially completed a survey that screened for mental disorders and comorbid conditions. From the respondents ($N = 320$), we identified 106 perfectionists using the standardized test and had a brief interview schedule with each. Qualitative measures were used to obtain information regarding the family, and the student was the primary respondent.

Participants

The sample consisted of 320 undergraduate engineering students 17–21 years of age ($M = 19.68$, $SD = 1.44$) who belonged to B.Tech disciplines across seven Schools of Engineering in VIT University. They were randomly recruited for the study from a source list. After obtaining informed consent and an initial screening for psychiatric illnesses and comorbid conditions, they completed an online survey on personality. Students were encouraged to respond to the survey within a span of 3 days after which the link to the test would expire. Student participation was voluntary and responses to the questionnaire were directly received by the researchers on their database. Results were not available to students so as to maintain confidentiality. From the respondents who had completed the survey, those who were identified to be perfectionists were contacted to attend a short interview. Details regarding birth order and family were obtained from the scheduled interviews after which students were debriefed.

Procedure

Three hundred and twenty ($N = 320$) undergraduate engineering students in VIT University were randomly selected for the study after obtaining informed consent. All the students ($N = 320$) completed the Almost Perfect Scale-Revised (APS-R). Score on perfectionism was obtained ($M = 94.20$, $SD = 7.79$) and from this sample ($N = 106$), and scheduled interviews were held with those identified to exhibit the specific trait. During the brief conversation, we obtained information about family and birth order. The researchers explained to the students that information obtained from the inventories

will only be used to help them understand themselves better and to develop effective coping strategies. Results from the inventories were kept confidential.

Measures

The Almost Perfect Scale-Revised

The APS-R consists of 23 items that make up three subscales: High standards (seven items, e.g., I expect the best from myself), discrepancy (12 items, e.g., doing my best never seems to be enough), and order (four items, e.g., neatness is important to me). Participants responded to each item using a five-point Likert scale ranging from 1 (I strongly disagree) to 5 (I strongly agree). Slaney *et al.* reported very good reliability indices of the APS-R subscales ranging from 0.85 to 0.92.^[4]

Scheduled interviews

These were specially designed short questionnaires that were used to gather information from the student regarding his familial relationship, birth order, and life stresses. Questions were open-ended and the student was interviewed on an individual basis. Conversation with the student was held in private setting and a nonthreatening manner. The student was asked questions pertaining to birth order, familial hierarchy, and how he or she responded to stress within and outside family. Conversations within the sessions were kept confidential. Interviews focused on his perception of the life stresses, academic challenges, expectations from himself and parents, and what changes would make a difference to him. Debriefing was carried out every time a session was completed. Students were reassured that these assessments were not a diagnostic tool but were only to gather information about the child to help the student implement adaptive strategies.

RESULTS

Gender, age, and academic years of students

Findings revealed [Table 1] that there were greater number of male respondents ($N = 268$) than female ($N = 52$) respondents, and students who participated in the study were between 18 and 23 years of age ($M = 19.68$, $SD = 1.44$). There were greater number of students ($N = 174$) in the final year than in the 3rd ($N = 19$), 2nd ($N = 2$) or 1st year ($N = 124$). We also observed that students who were 18 years of age ($N = 94$) were greater in number when compared to 21 years olds ($N = 80$).

The academic profile of students based on their cumulative grade points average (CGPA).

On plotting the academic proficiencies of students based on their CGPAs [Figure 1], we observed that there were a large number of students ($N = 95$) with CGPAs

Table 1: The gender, age, and academic year distributions of engineering undergraduates

	<i>n</i>	Percentage
Gender		
Boys	268	83.75
Girls	52	16.25
Total	320	
Age (years)		
18	94	29.37
19	16	5.00
20	57	17.81
21	80	25.00
22	18	5.62
23	3	9.37
Total	320	
Mean (standard deviation)	19.68 (1.44)	
Academic year		
First year	124	38.75
Second year	3	9.37
Third year	19	5.93
Fourth year	174	54.37
Total	320	

above 8 and below 10. We plotted the CGPAs in class intervals so as to discriminate between low achievers (CGPA: 0.0–4.9), average performers (CGPA: 5.0–5.9), above average performers (CGPA: 6.0–7.9), and high achievers (CGPA: 8.0–10.0). It was interesting to note that majority of students (29.68%) were of the high-achieving academic profile.

We determined the scores for the sample ($N = 320$) on administering the APS-R [Table 2] and found that scores on high standards ($M = 38.23$, $SD = 6.94$) and discrepancy ($M = 49.57$, $SD = 13.80$) were higher than that observed on the domain of order ($M = 20.50$, $SD = 4.44$).

Using the cutoff score of 42 on the APS, we discriminated the perfectionists ($N = 106$) from the nonperfectionists ($N = 214$). Using the high standards scale on the APS-R [Table 3] and the cutoff score of 42, we derived the adaptive ($N = 26$) and maladaptive perfectionists ($N = 80$). Furthermore, the *t*-test was applied to test for significance. We found that perfectionists significantly had higher scores ($P < 0.001$) than nonperfectionists and that maladaptive perfectionists significantly differed ($P < 0.001$) from adaptive perfectionists.

Birth order and perfectionism

Findings revealed that there were larger number of first-born ($N = 170$) children than second born ($N = 87$) and only/single children ($N = 63$). From the students categorized to have perfectionism ($N = 106$), interestingly, results revealed that the first-born children ($N = 59$) were more in comparison to the second born ($N = 36$) and single children ($N = 11$). We may

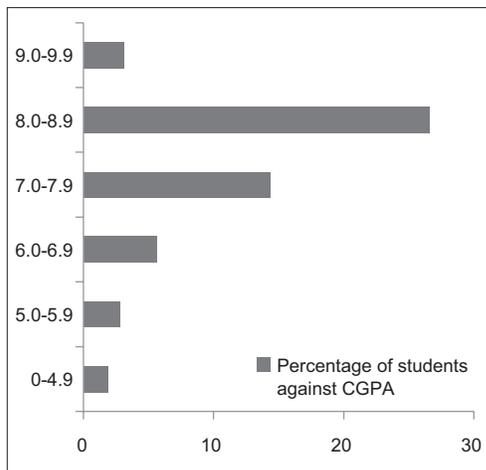


Figure 1: Represents the academic proficiencies of students based on the cumulative grade points averages

therefore understand that first-born children are likely to exhibit a perfectionistic self-presentation [Table 4].

Analysis from scheduled interviews

We used the help of two other researchers to interview the perfectionists ($N = 106$) on a one-to-one basis for a short duration of time asking them questions regarding the family cohesiveness, familial hierarchy, and decision-making at home. We found that by and large 36 respondents (69.23%) out of 52 categorized to be perfectionists and the first-born children had fathers who were also first-born children in the family [Table 5]. It was interesting to note that paternal influences were stronger within the family that predicted decision-making, authority, and the need to be high achieving ($N = 82$) with CGPA scores between 8.0 and 10.0. Out of 106 students, 82 (77.35%) of them scored CGPAs that were of a high academic profile. Conversations with students lead us to understand that they modeled behaviors within the family, had assumed to be in greater control of their outcomes, believed less in religion, and had higher expectations of themselves. This prompts us to conclude that perfectionism had been instilled in their environmental systems and that they were actively reinforced.

DISCUSSION

Adaptability is the characteristic that enables the species to survive and if there's one thing perfectionism does, it rigidifies behavior. It constricts people just when the fast-moving world requires more flexibility and comfort with ambiguity than ever. It turns people into success slaves. Perfectionism today has been increasing. One reason is that there is constant pressure on children to achieve and this is getting rampant because parents now seek much of their status from the performance of their children. Perfectionism, too, is a form of parental

Table 2: Represents the mean and standard deviations across the three domains of perfectionism using the Almost Perfect Scale-Revised

High standards	Order	Discrepancy
38.23 (6.94)	20.50 (4.44)	49.57 (13.80)

Table 3: Represents the mean and standard deviations of perfectionists, nonperfectionists, adaptive, and maladaptive perfectionists

	Perfectionists ($n=106$)	Nonperfectionists ($n=214$)	Adaptive perfectionists ($n=26$)	Maladaptive perfectionists ($n=80$)
	38.28 (6.93)	38.23 (6.94)	49.47 (13.97)	49.68 (13.84)
<i>P value</i>	1.835×10 ⁻⁸		3.806×10 ⁻¹⁰	

Table 4: Represents the birth order of students

Total ($n=320$)	First born ($n=170$) (%)	Second born ($n=87$) (%)	Single child ($n=63$) (%)
Perfectionists ($n=106$)	52 (49.05)	32 (30.18)	22 (20.75)
Nonperfectionists ($n=214$)	104 (48.59)	68 (31.77)	42 (19.62)

Table 5: Analysis of first-born children from scheduled interviews

Profile of perfectionistic students	<i>N</i> (%)
Number of students with First-born fathers	36 (69.23)
Number of students with Cumulative grade points average (8.0-10.0)	82 (77.35)

control, and parental control of offspring is greater than ever in the new economy and global marketplace, realities that are deeply unsettling to today's adults. From the present study, we found that there were a large number of students ($N = 95$) who had CGPAs above 8 and below 10. It was interesting to note that they (29.68%) were of the high-achieving academic profile. These findings support the research done to examine the relationship between the personality trait of conscientiousness and overall GPA.^[14] Participants who scored high on conscientiousness also reported higher GPAs than those of less conscientious participants. Perfectionism seeps into the psyche and creates a pervasive personality style. It keeps people from engaging in challenging experiences; they do not get to discover what they truly like or to create their own identities. Perfectionism reduces playfulness and the assimilation of knowledge.

There are two contrasting types of perfectionism, classifying people as tending toward normal perfectionism or neurotic perfectionism.^[3] Normal perfectionists are more inclined to pursue perfection without compromising their self-esteem and derive pleasure from their efforts. Neurotic perfectionists are prone to strive for unrealistic goals and feel dissatisfied when they cannot reach them. On using the cutoff score

of 42 on the APS, we discriminated the perfectionists ($N = 106$) from the nonperfectionists ($N = 214$). From the classification given by Rice and Ashby,^[7] a cutoff score of 42 on the high standards scale was used to discriminate the adaptive ($N = 26$) from the maladaptive perfectionists ($N = 80$). On using the *t*-test, we found that perfectionists significantly had higher scores ($P < 0.001$) than nonperfectionists and that maladaptive perfectionists significantly differed ($P < 0.001$) from adaptive perfectionists. By itself, having high standards or being orderly does not impale a person on perfectionism; it is necessary but not sufficient. Most people who are successful set very high standards for themselves. They tend to be happy. What turns life into the punishing pursuit of perfection is the extent to which people are worried about mistakes. Maladaptive perfectionists are concerned about their mistakes and have doubts about actions. They fear that a mistake will lead others to think badly of them; the performance aspect is intrinsic to their view of themselves. They are haunted by uncertainty whenever they complete a task, which makes them reluctant to consider something finished.

From our findings, out of 106 perfectionists ($M = 38.28$, $SD = 6.93$), there were 80 ($M = 49.68$, $SD = 13.84$) maladaptive perfectionists. According to evidence from research, maladaptive perfectionists, in particular, seem to be more self-critical and less satisfied with their accomplishments.^[15] Maladaptive perfectionists also expressed more concern and dissatisfaction over their GPA although it did not differ significantly from those of the other participants.^[16] Findings from our research reveal that adaptive perfectionists ($M = 49.97$, $SD = 13.97$) significantly differed ($P < 0.01$) from the maladaptive perfectionists. It is well documented that adaptive perfectionists experienced higher expectations from others and themselves although they reported less parental criticism but did not report acute worry and stress over meeting those expectations.^[17] Adaptive perfectionists also have higher self-esteem and life satisfaction than maladaptive perfectionists.

Results of our study identify nonperfectionists ($M = 38.23$, $SD = 6.94$) with lower scores on standards and were also found to be less critical of their accomplishments. Nonperfectionists not only displayed lower average scores on measures assessing personal standards, self-criticism, self-doubt, and concern over mistakes but also seemed less conscientious of high expectations of others. They also demonstrated less ability to focus attention on tasks for extended periods of time than their perfectionist peers.^[18] Firstborns are believed to have qualities that are regarded as necessary in occupations requiring leadership and

stability.^[19] Many studies document that firstborns were more liberal than later born children and that rebelliousness was clearly found to be correlated with the later born birth ranks. Our findings reveal that 52 students (49.05%) were first-born children in the family compared to the second born (30.18%) and single children (20.75%). First-born children have been reported to be independent and more likely to attribute good performance to their own internal qualities while later-born children attribute success to help from others or circumstances.^[20] Adaptive perfectionism was associated most with first-born children and was the least common for middle born while maladaptive perfectionism is more common among middle born. Nonperfectionism is more common for both middle and youngest birth ranks.^[21] From the present research, we confirm that 36 students (69.23%) out of 52 students categorized to be perfectionists were the first-born children, and they had fathers who were also first-born children in the family. Studies have shown that birth order significantly affects familial sentiments. Middle born children have been found to be less family-oriented than first-born children or last born. Firstborn and last-born seem to identify more strongly with family members and are more positive about helping family members than middle-born children.^[22] We interestingly found from our study that paternal influences were stronger within the family that predicted decision-making, authority, and the need to be high achieving ($N = 82$) with CGPA scores between 8.0 and 10.0. Out of 106 perfectionistic students, 82 of them (77.35%) were found to be high achievers with CGPAs above 8.

Conversations with students lead us to understand that they modeled behaviors within the family, assumed to be in greater control of their outcomes, believed less in religion, and had higher expectations of themselves. This prompts us to conclude that perfectionism had been instilled in their environmental systems and that they were actively reinforced. Research has found evidence that family emphasis on achievement and orderliness, as well as being an actual firstborn, correlated with higher scores on the first-child scale. First-born children perceived greater organization in their families than did middle children. Higher scores on perfectionism for the firstborn were also associated with the presence of an active and recreational family atmosphere. The first-born children also experienced were also found to be negatively associated with the trait of impulsivity. This shows a deliberative and planned approach to life. Psychologically, the first-born children are those who accomplish goals through directing, leading, achieving, and attempting to please. This has been well established throughout this study.

CONCLUSION

Recent research studies on perfectionism have certainly provided new insights as to how educators, teachers, and parents could view perfectionism and work with perfectionist students. The present study has sought to explore four objectives: (i) To identify perfectionists among a homogeneous sample of students, (ii) to differentiate the adaptive from maladaptive perfectionists, (iii) to understand if the grade point average predicts a perfectionistic self-presentation, and finally (iv) to understand the influence of birth order on perfectionism. There are several vital implications of this study. The appreciation of the distinction between positive and negative perfectionism and healthy versus unhealthy perfectionists would alert education practitioners to differentiate that not all perfectionistic tendencies are dysfunctional or all perfectionists are unhealthy or maladaptive. In addition, students, while being helped to set high standards and meet challenging goals with good planning and organization, should also learn to recognize their own limitations and appreciate that their mistakes and failures are normal, informative, and situation-specific and to derive satisfaction on having performed their best despite that there could still be a discrepancy between their desired standards and their performance.

As we can see from the research explored in this paper, birth order has a significant effect on many aspects of personality. At all ages, first = born children were rated higher than second-born for protection, similarly to second-born children for affection and getting along, and lower for companionship and identification, which indicates that some role differences correlate with birth order. The first-born children scored higher on conscientiousness and agreeableness than later-born children.^[23] Findings from our research have also been confirmatory and evident. This brings us to understand the much debatable issue of birth order influencing personality. Results have been conclusive in proving that paternal birth order itself has a stronger implication. Although the research has got limitations such as in generalizability and using small sample for scheduled interviews, we cannot ignore that the study attempted to unravel perfectionism from different dimensions and was one that had been effective in providing a better and conclusive report.

Acknowledgments

I would like to thank College of Nursing, CMC Hospital, and VIT University for providing me the infrastructure and facilities to conduct the study. I am also grateful to Dr. Navin Kumar (Assistant Professor, Senior), School of Social Sciences and Languages, for

providing me immense encouragement and support thus far in pursuing my research interests.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Ashby JS, Rice KG, Martin JL. Perfectionism, shame, and depressive symptoms. *J Couns Dev* 2006;84:148-56.
2. Flett G, Hewitt P. *Perfectionism Theory, Research, and Treatment*. Washington, DC, USA: American Psychological Association; 2002.
3. Hamachek DE. Psychodynamics of normal and neurotic perfectionism. *Psychology* 1978;15:27-33.
4. Ulu IP, Tezer E. Adaptive and maladaptive perfectionism, adult attachment, and big five personality traits. *J Psychol* 2010;144:327-40.
5. Slaney RB, Rice KG, Mobley M, Trippi J, Ashby JS. The revised almost perfect scale. *Meas Eval Couns Dev* 2001;34:130-45.
6. Wang KT, Yuen M, Slaney RB. Perfectionism, depression, loneliness, and life satisfaction: A study of high school students in Hong Kong. *Couns Psychol* 2009;37:249-74.
7. Rice KG, Ashby JS. An efficient method for classifying perfectionists. *J Couns Psychol* 2007;54:72-85.
8. Nakano K. Perfectionism, self-efficacy, and depression: Preliminary analysis of the Japanese version of the almost perfect scale-revised. *Psychol Rep* 2009;104:896-908.
9. Molnar DS, Reker DL, Culp NA, Sadava SW, DeCourville NH. A mediated model of perfectionism, affect, and physical health. *J Res Pers* 2006;40:482-500.
10. Molnar D, Sadava S. Perfectionism and Health: The Key Role of Stress, in *Proceedings of the Symposium on Perfectionism and Health: A Multidimensional Analysis*, Association for Psychological Science Annual Convention, Boston, Mass, USA; May, 2010.
11. Lundh LG, Saboonchi F, Wångby M. The role of personal standards in clinically significant perfectionism. A person-oriented approach to the study of patterns of perfectionism. *Cognit Ther Res* 2008;32:333-50.
12. Olson ML, Kwon P. Brooding perfectionism: Refining the roles of rumination and perfectionism in the etiology of depression. *Cognit Ther Res* 2008;32:788-802.
13. DiBartolo PM, Li CY, Averett S, Skotheim S, Smith LM, Raney C, *et al*. The relationship of Perfectionism to judgmental bias and psychopathology. *Cognit Ther Res* 2007;31:573-87.
14. Nguyen NT, Allen LC, Fraccastoro K. Personality predicts academic performance: Exploring the moderating role of gender. *J Higher Educ Policy Manag* 2005;27:105-16.
15. Grzegorek JL, Slaney RB, Franze S, Rice KG. Self-criticism, dependency, self-esteem, and grade point average satisfaction among clusters of perfectionists and non-perfectionists. *J Couns Psychol* 2004;51:192-200.
16. Rice KG, Dellwo JP. Perfectionism and self-development: Implications for college adjustment. *J Couns Dev* 2002;80:188.
17. Rice KG, Slaney RB. Clusters of perfectionists: Two studies of emotional adjustment and academic achievement. *Meas*

- Eval Couns Dev 2002;35:35.
18. Ashby JS, Rahotep SS, Martin JL. Multidimensional perfectionism and Rogerian personality constructs. *J Humanist Couns Educ Dev* 2005;44:55-65.
 19. Herrera NC, Zajonc RB, Wieczorkowska G, Cichomski B. Beliefs about birth rank and their reflection in reality. *J Pers Soc Psychol* 2003;85:142-50.
 20. Zweigenhaft RL, Von Ammon J. Birth order and civil disobedience: A test of Sulloway's "Born to Rebel" hypothesis. *J Soc Psychol* 2000;140:624-7.
 21. Ashby JS, LoCicero KA, Kenny MC. The relationship of multidimensional perfectionism to psychological birth order. *J Individ Psychol* 2003;59:42-51.
 22. Salmon C. Birth order and relationships. *Hum Nat* 2003;14:73-88.
 23. Beer JM, Horn JM. The influence of rearing order on personality development within two adoption cohorts. *J Pers* 2000;68:789-819.