BIRTH ORDER, SIBLING CONSTELLATION, CREATIVITY AND PERSONALITY DIMENSIONS OF ADOLESCENTS

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Abstract: The study focuses on the connection between the birth-order in a sibling constellation and the creativity and personality traits of adolescents. The study searches for the answer to questions of whether creativity is connected with the birth-order in the sibling constellation (in the sense of the position among siblings and gender) and what personality traits it is connected to. The personality traits of the individual positions in the birth-order (first-born, second-born, the middle, the youngest and the only child) are compared. The Torrance Test of Creative Thinking (TTCT) and the Urban Creative Thinking Test (TSD-Z) were applied for creativity identification. To measure personality dimensions, the NEO Five-Factor Inventory was applied to a sample of 158 adolescents - University students of humanities and artistic-technical departments (mean age 19.91 years). The data on family constellation (birth-order, size of family, family and sibling constellation, age differences, etc.) were gathered, based on our own Questionnaire of Family Constellation. Our results confirmed the higher performance of the second-born adolescents in the Torrance Creative Thinking Test. The adolescents that grew up with a sibling of the same gender were more conscientious and more extravert. The creativity performance of a woman was higher if she grew up with a brother and a sister. The men growing up with a brother and a sister were more agreeable than the women in the same sibling constellation.

Key words: birth order, sibling constellation, five personality dimensions, creativity

THEORETICAL STARTING-POINTS

The individual's personality is also significantly influenced by the sibling constellation and the birth order, i.e. the chronological sequence of child births in the family (Sulloway, 1999). In the process of life adaptation the position obtained by birth changes and becomes enriched. Still, the birth-order provides specific opportunities for certain types of experience. Under the influence of multiple factors in the family (e.g., age and intersexual differences) the *psychological position* of the individual gets shaped and connected with certain behavioral interaction patterns and certain personality characteristics (Leman, 1997; Dreikurs, 1989; Dreikursová-Fergusonová, 2005; Eckstein, 2000).

There are five basic birth-order positions: 1) the oldest - the first-born child, 2) the second-born child, 3) the middle-born child, 4) the youngest child, 5) the only child.

There are some birth-order characteristics relevant to creativity and personality dimensions (Adler, 1935; 1995; Dreikurs, 1989; Dreikurs, Grey, 1997; Sulloway, 1999; Dacey, Lennon, 2000; Eckstein, 2000; Čechová, 2004):

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1) *The first-born* are oriented to performance, power, endeavor, perfectionism, and responsibility. Identification with parents explains their tendency to acquire the family values and to apply the traditional approach to problems. In comparison with the later-born they are supporters of accepted social standards and scientific paradigms. They are characterized by the highest IQ, the greatest academic success, they are *more conscientious, more extrovert*, more susceptible to maladjustment, i.e. *more neurotic*.

2) *The second-born* become less identified with the family values, they are *nonconformists* in a higher degree, they are more *self-reliant*, they become *independent* of their parents sooner, they have a greater tendency to emancipate themselves from the influence of the family. They are much better in coping with problems than the first-born, or the only children. Besides, they are *less anxious, and more receptive to experience*. Almost always they are *the opposite* of the first-born in one of the basic tendencies and they are more unconventional in their behavior.

3) *The middle born* are usually sociable, they have the greatest feeling of not belonging, they are *sensitive* to injustice. They are often oriented to their peers and they are *independent* of their families. They are inclined to diplomacy and cooperation, to strategies reflecting their tendency to settle disputes or quarrels between their siblings. They know how to reach a compromise, they are good negotiators, since they can understand the art of "quid pro quo". They are successful in team sports and they compete in areas not attempted by the oldest. In company they are usually popular and jolly.

4) *The youngest* children in the family are in most cases "spoiled", they are not obliged to solve problems, since they are considered to be the weakest. It may happen that they stay *dependent* on others, unable to act for themselves, up to maturity. Struggling to find their own positions the youngest children may be *ambitious* and may outrun their older siblings. Often they want to be exceptional and if they are talented, they may become good entertainers. The youngest show *interest in other people, they are empathetic* and often they choose professions in which they are in direct contact with other people. The youngest are most highly represented among writers, especially autobiographers and family historians.

5) *The only children*, similarly to the oldest ones, experience the situation of uniqueness and unconditional attention of adults. Other typical features include a disposition to high performance and ambition. They are *individualists*, often *lonely*, because they have no siblings and don't have the social skills of their peers. Depending on the family atmosphere they may become *independent and be on their own*, or they are in constant need of help from their environment and they remain helpless. The typical features include a *critical attitude* either towards themselves or their environment. The closer identification with the parents may lead to efforts to acquire their values and the traditional approach to problems.

Results of older research (Yarial, 1985; Runco, Bahleda, 1986; Fernald, Solomon, 1987) indicated that in tests of divergent thinking the best were the only children, then the first-born, after them the youngest and finally the middle-born. The newer research (Sulloway, 1999; Dacey, Lennon, 2000; Eckstein, 2000) confirms the unconventionality and thus the creativity of later-born siblings.

According to F. Sulloway (1999, p. 202) "birth order provides one important source

of personality differences, which in turn underlie differences in creative achievement". However, research also suggests that birth order is "most relevant as a determinant of the domain and style of creative eminence" (Simonton, 1999, p. 653). *The first-born* show a tendency to enter spheres preserving the status quo or be establishment leaders. *The later-born* have a tendency to enter spheres of creative activity, in which they are not so much obliged to conform to the norms. They are universalists rather - they pursue multiple spheres and they become revolutionaries transcending the traditional paradigms (Simonton, 1999; Sulloway, 1996; 1999).

PROBLEM

The contradictory findings concerning the birth-order in the sibling constellation and creativity resulted in our formulation of the research issues.

The assumption was that there exists a connection between the birth-order position in the sibling constellation and between creativity and the personality dimensions of adolescents.

RESEARCH ISSUES

1) Do the first-born and the only children reach higher scores in tests of creative thinking in comparison with the second-born, middle-born and the youngest ones?

2) Are the first-born more conscientious and more neurotic in comparison with other birth positions?

3) Are the second-born more emotionally stable, less anxious and more receptive to experience?

4) Are the middle-born and the youngest children more agreeable in comparison with the first-born and the only children?

Sample

158 adolescents (58 men, 100 women) - university students from various regions of Slovakia:

- average age 19.91 years (SD = 2.4)
- 89 students of the department of design, Faculty of Architecture, Slovak Technical University, Bratislava
- 69 students of humanities, Faculty of Arts, Comenius University, Bratislava.

METHODS

Identification of Creativity

TTCT (The Incomplete Figures from Torrance's Figural Test of Creative Thinking, the Slovak form adapted by Jurčová, 1984). In the test measuring the individual's tendency to structuration and integration there were three indicators of creativity assessed:

- *fluency* - the number of relevant (adequate) answers
- *flexibility* - the number of diverse solutions, indicating different tendencies in solving the tasks, the change in approach, the ability to change the thinking pattern
- *originality* - the score is determined by low statistical frequency, the measure representing the decline from what is current, ordinary or evident.

TSD-Z (Urban Creative Thinking Test, the Slovak form adapted by Urban, Jellen, Kováč, 2002) is based on a principle of uncompleted figures, or shapes. There are five figures enclosed in a frame and the last one, the sixth, is outside the frame. The proband's task is to complete the individual shapes by drawing. This test also reflects the personality dimensions of creativity, such as the courage to take risks,

the overcoming of obstacles, complexity of view, etc. Urban and Jellen, the authors of the test , are of the opinion that in comparison with the Torrance tests The Urban test is more objective in reflecting the age differences in creative performances.

Personality Dimensions

NEO Five-Factor Inventory (Costa, McCrae, 1989, the Slovak form adapted by Ruisel, 1998).

The inventory measures five personality dimensions (with 12 items in each), including various personality characteristics:

- *neuroticism* (anxiety, depression, hostility, impulsiveness, vulnerability, emotional lability)
- *extraversion* (affection, sociability, activity, assertiveness, positive emotions)
- *openness to experience* (to aesthetic experiencing, phantasy, to values and changes)
- *agreeableness* (trust, empathy, altruism, care for others)
- *conscientiousness* (sense of accuracy, systematic approach, reliability, purposefulness, persistence).

Anamnestic Data

Family Constellation Questionnaire (Szobiová, 2007). Participants had to state: age, sex, size of family, number of siblings, birth order, sex of siblings, family education to 7 years of age (by both parents, mother, father, grandparents or others), age differences between siblings.

The results were statistically processed by means of the ANOVA SPSS program. The inter-group differences based on the birth-order were tested by the one-way ANOVA method and by T-test (the Leven's test of variance homogeneity).

RESULTS

At first the intersexual differences were investigated by the Leven's test of variance homogeneity. The significant difference between the men and women of our sample was shown only in the personality dimension of *neuroticism* (t = 2.253; sig. = .026), which is in accord with the generally known findings; women are more neurotic than men in our sample.

Table 1. Performance differences in the tests of creativity TTCT, TSD-Z and in personality dimensions of NEO FFI between the first-born (N = 47), second-born (N = 53), middle-born (N = 8), the youngest (N = 11) and the only children (N = 39) (one-way ANOVA)

TESTS	Sum of Squares	df	Mean Square	F	Sig.
TSD-Z	346.708	4	86.677	1.015	.402
Urban's test	13069.065	153	85.419		
	13415.772	157			
FLUENCY	**21.088**	**4**	**5.272**	**2.446**	**.049**
TTCT	**329.754**	**153**	**2.155**		
	350.842	**157**			

Table continues

Table 1 (continued)

TESTS	Sum of Squares	df	Mean Square	F	Sig.
FLEXIBILITY	19.981	4	4.995	**2.394**	**.053**
TTCT	319.291	153	2.087		
	339.272	157			
ORIGINALITY	175.857	4	43.964	1.611	.174
TTCT	4175.517	153	27.291		
	4351.373	157			
NEUROTICISM	129.711	4	32.428	.752	.558
NEO-FFI	6123.80	142	43.126		
	6253.592	146			
EXTRAVERSION	182.642	4	45.660	1.303	.272
NEO-FFI	4974.297	142	35.030		
	5156.939	146			
OPENNESS	173.664	4	43.416	1.118	.350
NEO-FFI	5513.805	142	38.830		
	5687.469	146			
AGREEABLENESS	228.083	4	57.021	**2.137**	**.079**
NEO-FFI	3788.584	142	26.680		
	4016.667	146			
CONSCIENTIOUSNESS	202.154	4	50.538	.838	.503
NEO-FFI	8567.642	142	60.336		
	8769.796	146			

The comparison of the results on the basis of the birth-order followed (the first-born, second-born, middle-born, the youngest and the only children).

The results showed (Table 1) the statistically significant difference between the groups in *fluency* and the evident tendency to significance in *flexibility*. Among the personality dimensions a stronger tendency to differ was shown in *agreeableness*.

In the next part of the statistical procedure we made the pair comparison for each variable of all groups - it means 10 comparisons in each variable. The results are shown in Table 2 together with the range of significance of all calculated t-tests.

The second-born obtained statistically significantly better results in the Torrance Test of Creative Thinking in comparison with other birth-order positions: in *fluency*

(compared to 1), in *flexibility* (compared to 1 and 5) and in *originality* (compared to 1 and 3). In the Urban test of creativity, too, a tendency of their significantly higher performance was likewise shown in comparison with 1 and 5 (Table 2, Figure 1).

Table 2. Average values of the first-born, second-born, middle-born, the youngest and the only children in the tests of creativity and in personality dimensions NEO FFI (Leven's test)

TESTS NEO FFI	First-born 1.	Second-born 2.	Middle-born 3.	Youngest 4.	Only child 5.	Sig.
TZD-Z	*36.64*	**39.79**	36.50	39.50	*36.92*	.091
FLUE	*8.62*	**9.42**	8.88	**9.64**	8.87	**.007 - .040**
FLEX	*7.06*	**7.91**	7.38	7.73	*7.28*	**.004 - .042**
ORIG	*13.06*	**15.08**	*11.13*	13.36	13.44	**.048** - .056
TTCT	*27.08*	**31.48**	27.17	31.00	28.29	**.032**
N	*29.80*	30.84	30.14	29.90	**32.22**	.101
E	44.02	*43.08*	44.86	41.80	**45.54**	.058
O	45.73	44.16	*41.86*	43.50	**45.84**	.123
A	**45.52**	43.73	46.71	**46.80**	*43.16*	**.042 - .500**
C	**45.41**	43.94	43.14	*41.90*	*42.65*	.113 - .199

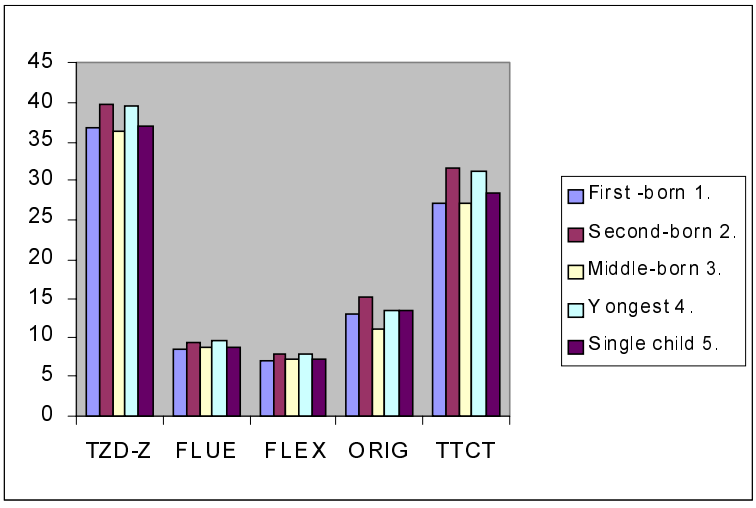

Figure1. Differences in the measure of creativity between birth order

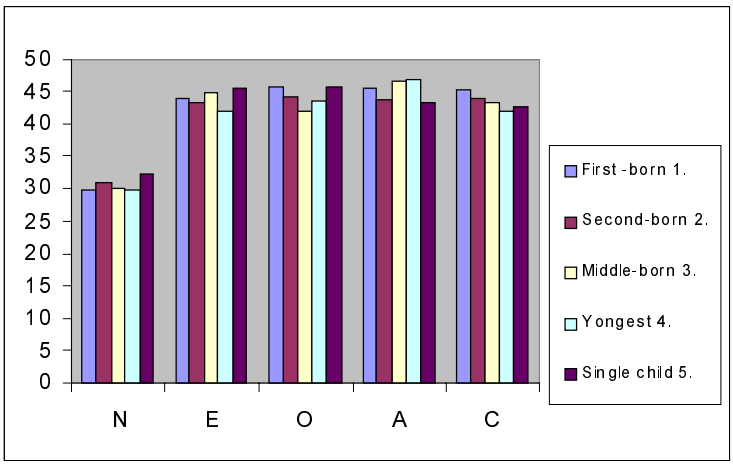

Figure 2. Differences in the personality dimensions NEO FFI between birth order

The only children were shown to be *more neurotic* in comparison with the first-born (1), *more extravert* in comparison with the second-born (2) and the youngest (4), not, however, significantly.

The first-born and the youngest were shown to be significantly more *agreeable* than the only children and the second-born, it means they are more empathetic, altruistic, showing more trust and care for others (Table 2, Figure 2).

The comparison of the combined groups of the first-born and the only children with the second-born and the middle-born showed similar results (Table 3).

Table 3. Average values of combined groups of the first-born + the only children (N = 82), with the second-born + middle-born (N = 61) in the tests of creativity and in personality dimensions NEO FFI (Leven's test)

TESTS NEO FFI	First-born + Only child	Second-born + Middle-born 2.	Sig.
TZD-Z	*36.32*	**39.92**	**.021**
FLUE	*8.67*	**9.42**	**.002**
FLEX	*7.11*	**7.91**	**.001**
ORIG	*13.07*	**14.98**	**.031**
TTCT	*27.72*	**31.29**	**.036**
N	30.60	31.26	.567
E	44.80	*43.34*	.164
O	45.47	44.67	.465
A	44.20	43.90	.742
C	44.41	43.33	.428

Table 4. Performance differences in the TTCT, TSD-Z tests of creativity and in NEO FFI personality dimensions between men growing up with a brother (N = 21), women growing up with a sister (N = 37) and a group of men and women growing up with a sibling of the opposite sex (N = 50) (one-way ANOVA)

TESTS	Sum of Squares	Df	Mean Square	F	Sig.
TSD-Z	100.881	2	50.440	.683	.508
Urban's test	7758.777	105	73.893		
	7859.657	107			
FLUENCY	6.240	2	3.120	1.312	.274
TTCT	249.723	105	2.294		
	255.963	107			
FLEXIBILITY	3.776	2	1.888	.823	.442
TTCT	240.891	105	2.294		
	244.667	107			
ORIGINALITY	61.084	2	30.542	1.091	.340
TTCT	2939.166	105	27.292		
	3000.25	107			
NEUROTICISM	22.952	214	11.476	.279	.757
NEO-FFI	4027.266	98	41.095		
	4050.218	100			
EXTRAVERSION	198.496	4	45.660	**2.954**	**.057**
NEO-FFI	3292.732	98	35.599		
	3491.228	100			
OPENNESS	59.095	2	29.548	.792	.456
NEO-FFI	3658.232	98	37.329		
	3717.327	100			
AGREEABLENESS	49.157	2	24.578	.830	.439
NEO-FFI	2902.289	98	29.615		
	2951.446	100			
CONSCIENTIOUSNESS	**421.820**	**2**	**210.910**	**3.455**	**.035**
NEO-FFI	**5981.962**	**98**	**61.040**		
	6403.782	**100**			

The second-born showed significantly better performance in the tests of creativity: in the Urban test TSD-Z (sig. = .021) and in the Torrance Test: in *fluency* (sig. = .002), in *flexibility* (sig. = .001), in *originality* (sig. = .031) and in total TTCT (sig. = .036).

The results for men and women growing up with siblings of the same and opposite sex are presented in Table 4. Men and women growing up with siblings of the same sex are significantly *more conscientious* (especially women: sig. = .018) and they have a tendency to be *more extravert* as well (especially men: sig. = .044).

To investigate the *influence of the sibling constellation* we compared the groups of men (N = 15) and women (N = 15) who were growing up with both a brother and a sister. The creative performance of women was shown to be favorably influenced by the above sibling constellation. In comparison with the men in the same sibling constellation the women were *more fluent* (F = 12.482; sig. = .001) and *more flexible* (F = 4.477; sig. = .043). On the other hand the men were *more agreeable* than the women (F = 5.888; sig. = .022).

The adolescents growing up with at least one sibling (N = 122) were emotionally more stable, more resistant to psychic stress, and less vulnerable in comparison with only children. It means that the only children were significantly *more neurotic* (F = 5.516; sig. = .020) in comparison with the others.

ANSWERS TO THE QUESTIONS RAISED

1) Do the first-born and the only children obtain higher scores in the tests of creative thinking than the second-born, middle-born and the youngest?

No, they do not. Better results in the factors of fluency, flexibility and originality were obtained by the second-born.

2) Are the first-born more conscientious and more neurotic in comparison with the other birth-order positions?

No, they are not. The only children were shown to be *more neurotic* than the first-born. The first-born are significantly *more agreeable* than the only children.

3) Are the second-born more emotionally stable, less anxious and more receptive to experience?

No, they are not.

4) Are the middle-born and the youngest children *more agreeable* than the first-born and the only children?

Yes, the youngest are significantly *more agreeable* than the only children and the second-born.

CONCLUSION

Our results concerning the performance of the first-born and the only children on the one hand and later-born children on the other hand in the tests of creativity have shown interesting findings: better results in *the factors of fluency, flexibility and originality* in the test of creative thinking have been obtained by the second-born.

The first-born adolescents appear to be *emotionally more stable* in comparison with the adolescents - the only children.

The adolescents growing up with siblings of the same sex appear to be *more conscientious* and they have a tendency to *extraversion*.

The *creative performance of women* is favorably influenced when growing up in a sibling constellation with both a brother and a sister.

The men growing up with both a brother and a sister are shown to be *more agreeable*.

The findings of this study lends support to the idea that birth order and sibling constellation play an important role in affecting the creativity (especially of second-born adolescents and women) and personality characteristics (especially agreeableness and conscientiousness).

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REFERENCES

ADLER, A., 1935, *Člověk jaký jest. Základy individuální psychologie.* Praha: Orbis.

ADLER, A., 1995, *Smysl života.* Individuální psychologie 3. Praha: Práh.

COSTA, P.T., McCRAE, R.R., 1989, *NEO PI/FFI. Manual Supplement.* Odessa, FL.: Psychological Assessment Resources, Inc.

ČECHOVÁ, D., 2004, Vplyv poradia narodenia na osobnosť chlapcov a dievčat. In: D. Heller, J. Procházková, I. Sobotková (Eds.), *XXI. Psychologické dny. Svět žen a svět mužů: Polarita a vzájemné obohacování.* Sborník příspěvků z konference, Olomouc, Universita Palackého, Acta Universitatis Palackianae Olomucensis. Facultas Philosophica, Psychologica 35 - suppl., CD-Rom.

DACEY, J.S., LENNON, K.H., 2000, *Kreativita.* Prague: Grada Publishing.

DREIKURS, R., 1989, *Fundamentals of Adlerian Psychology.* Chicago: Adler School of Professional Psychology.

DREIKURS, R., GREY, L., 1997, *Logické dôsledky.* Nové Zámky: Psychoprof spol. s r.o., Artus.

DREIKURSOVÁ-FERGUSONOVÁ, E., 2005, *Adlerovská teória.* Bratislava: Slovenská adlerovská spoločnosť.

ECKSTEIN, D., 2000, Empirical studies indicating significant birth-order related personality differences. *The Journal of Individual Psychology,* 56, 4, 481-494.

FERNALD, L.N., SOLOMON, G.T., 1987, Value profiles of male and female entrepreneurs. *Journal of Creative Behavior,* 21, 3.

GAYNOR, J.I.R., RUNCO, M.A., 1992, Family size, birth-order, age-interval and creativity of children. *Journal of Creative Behavior,* 26, 2, 108-118.

JURČOVÁ, M., 1984, *Torranceho figurálny test tvorivého myslenia.* Príručka. Bratislava: Psychodiagnostické a didaktické testy, n. p.

LEMAN, K.,1997, *Sourozenecké konstelace* (The birth order book). 1. vyd. Prague: Portál.

RUISEL, I., 1998, *Inteligencia v kognitívnom a osobnostnom kontexte.* Bratislava: Ústav experimentálnej psychológie SAV.

RUNCO, M.A., BAHLEDA, M.D., 1986, Birth order and divergent thinking. *Journal of Genetic Psychology,* 148, 1, 119-125.

SIMONTON, D.K., 1999, Eminence. In: M.A. Runco, S.R. Pritzker (Eds.), *Encyclopedia of Creativity.* New York: Academic Press, vol. 1, 647-657.

SULLOWAY, F.J., 1996, *Born to rebel: Birth order, family dynamics, and creative lives.* New York: Pantheon Books.

SULLOWAY, F.J., 1999, Birth Order. In: M.A. Runco, S.R. Pritzker (Eds.), *Encyclopedia of Creativity.* New York: Academic Press, vol. 1, 189-202.

SZOBIOVÁ, E., 2007, Osobnosť a tvorivosť v adlerovskej psychológii. *Psychológia a Patopsychológia Dieťaťa,* 42, 1-2, 5-25.

URBAN, K.K., JELLEN, H.K., KOVÁČ, T., 2002, *Urbanov Figurálny test tvorivého myslenia (TSD-Z).* Príručka. Bratislava: Psychodiagnostika, a.s.

YARIAL, G.S., 1985, Creativity and birth order. *Journal of Creative Behavior,* 19, 2, 139- 145.

PORADIE NARODENIA V SÚRODENECKEJ KONŠTELÁCII, TVORIVOSŤ A OSOBNOSŤ ADOLESCENTOV

E. Szobiová

Súhrn: Štúdia sa zameriava na poradie narodenia v súrodeneckej konštelácii vo vzťahu k tvorivosti a osobnostným vlastnostiam adolescentov. Hľadá odpoveď na otázky či tvorivosť súvisí s poradím narodenia v súrodeneckej konštelácii (v zmysle pozície medzi súrodencami a genderom) a s akými osobnostnými vlastnosťami sa spája. Porovnáva aj osobnostné vlastnosti jednotlivých pozícií narodenia (prvorodených, druhorodených, prostredných, najmladších a jedináčikov).

Na identifikáciu tvorivosti boli použité: Torraceho test tvorivého myslenia, Urbanov figurálny test tvorivého myslenia TSD-Z. Na meranie osobnostných vlastností bol použitý inventár NEO FFI administrovaný vzorke 158 adolescentov - študentov VŠ humanitného a umelecko-technického zamerania (priemerný vek 19,19 r.). Anamnestické údaje týkajúce sa rodinnej konštelácie (poradie narodenia, veľkosť rodiny, súrodenecká konštelácia, vekové rozdiely atď.) sa získali Dotazníkom rodinnej konštelácie. Zistenia výskumu ukázali, že vyššie výkony v Torran ceho teste tvorivého myslenia dosiahli druhorodení. Adolescenti, ktorí vyrastali so súrodencom rovnakého pohlavia boli svedomitejší a extravertovanejší. Tvorivý výkon žien bol vyšší, ak vyrastali s bratom aj sestrou. Muži, ktorí vyrastali s bratom aj sestrou boli prívetivejší než ženy v rovnakej súrodeneckej konštelácii.