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CROSS-CULTURAL STUDY OF MOTHER-CHILD INTERACTIONS AND CHILD'S INTELLIGENCE

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Abstract

The article presents the results of a cross-cultural analysis of the structure of the relationship between primary school age children's perception of maternal attitude and children's intelligence on the Russian and Kyrgyz samples. These countries are characterized, on the one hand, by similarities in the organization of the national education system, and, on the other hand, differences in socioeconomic status and effectiveness of public education. The sample comprised 1334 early school age children: 690 students (52.5% boys) from Russian Federation (Moscow District), and 644 students (45.5% boys) from Kyrgyz Republic (Bishkek city). The age of Russian participants ranges from 6.8 to 11.7 years (M=9.3, SD=1.03); the age range of Kyrgyz participants is from 6.8 to 11.8 years (M=9.2, SD=1.16). The perceived maternal attitude was assessed with The Children's Report of Parental Behavior Inventory, mother version. A statistically significant effect of the country was observed for intelligence and three aspects of the maternal attitude – Acceptance, Positive involvement and Hostile detachment. On average, Kyrgyz children perceive mothers' attitude as more emotionally accepting and less rejective, compared to Russian peers. Regression analysis revealed predictors of intelligence: on the Russian sample – children's perception of the maternal attitude as emotionally rejecting; on the Kyrgyz sample – the degree of maternal hostile detachment. It was shown that the contribution of these perceived aspects of the maternal attitude to child's intelligence depends on the complexity of the intelligence test items.

Keywords: Child perception of the parental attitude, Emotional acceptance, The nature of involvement in child activities, Intelligence, Cross-cultural analysis, Primary school age

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1. Introduction

The modern studies of family environment are concerned primarily with finding the environmental factors, which contribute to the development of individual differences in cognitive abilities and personality. The regular candidates are such family factors as, for example, social economic status (Roksa, Potter, 2011), parents' socio-cultural attitudes toward the value of education (Sy, Schulenberg, 2005), parental divorce and new marriages (Hetherington, Bridges, Insabella, 1998), parents' and children' personality traits (Hines, & Holcomb-McCoy, 2013; Malykh, Tikhomirova, 2015).

However, the importance of studies of parental attitudes to children is emphasized in the context of the individual differences in cognitive abilities (Tikhomirova, Malykh, 2017; Pougnet et al., 2011; Cheung, Pomerantz, 2011; Harold, Aitken, Shelton, 2007). In this case, the parental attitude to a child is understood as a set of characteristic, non situation-specific ways of emotional relating and treating the specific child by the specific parent. According to the social psychological literature, two aspects represent the parental attitude to a child most accurately: 1) the degree of emotional acceptance of the child, and 2) the character of the participation in the child's activities (e.g. Kagitcibasi, 2005).

Most studies on the links between different aspects of parenting and children's cognitive achievements are focused on the investigation of the role of emotional acceptance (warmth) and control in academic achievement. In particular, it is shown that the low level of emotional acceptance by a parent is associated with low scores on academic tests (Kordi, Bahamdin, 2010; Harold, Aitken, Shelton, 2007), while high levels of parental control are associated with high academic achievement in adolescents (Pong, Hao, Gardner, 2005). As studies also report, positive participation of parents is positively related to adolescents' success in learning different subjects (Kordi, Baharudin, 2010; Xitao, Michael, 2001; Kaisa, Hakan, Jari-erik, 2000).

In addition, such studies emphasize mothers' relationships with children. For example, the association between maternal attitude to a child in infancy and academic achievement in school is often reported (Cassidy, Berlin, 1994). It is also underscored that the maternal attitude to children is not static, but is subject to change during different time periods in a child's life. For instance, as demonstrated in a longitudinal study of the dynamics of parent-child relationships, the parental attitude to a child is changed with school admission – the control strengthens and the demands increase (Luzhetskaya, Pavlova, 2003).

It should be particularly noted that the aspects of parental attitude are studied mostly from the parents' point of view – mothers and/or fathers fill out various questionnaires. In accordance with the results of psychological and behavior genetic studies, the factors of family environment should be analyzed as factors of non-shared environment – environmental influences, which do not contribute to the resemblance between children who are raised in formally equal conditions (Malykh, Tikhomirova, Kovas, 2012; Plomin et al., 2012). Indeed, on the one hand, parents can treat their children differently; on the other hand, children from the same family might perceive their parents differently through the prism of their personality (Tikhomirova, Malykh, 2017; Harris, Morgan, 1991).

Beyond that, the results from different studies of family environment suggest that there is low agreement between the answers of mothers and children, who completed the same research questionnaire – the reported correlation coefficients range from 0.11 to 0.41 for younger adolescents (Tsaousis, Mascha, Giovazolias, 2012) and from 0.31 to 0.41 for young adults (Schwarz, Barton-Hanry, Pruzinsky, 1985).

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Such results could be explained by genetic differences and unique experiences, which could project through the child's perception of parenting.

The studies of children's perceptions of parental treatment are generally developing in the direction of the interrelations between parenting and individual differences in academically relevant traits (e.g., Cheung, McBride-Chang, 2008). In particular, it is reported that the perceived parental emotional support contributes to the individual differences in motivation and academic achievement in children (Tikhomirova et al., 2015; Pougnet et al., 2011; Roy, Kwon, 2007).

In the studies on the links between parenting and children's cognitive abilities, the family environment is traditionally analyzed through child's perceptions of family stability/chaos (Dumas et al., 2005). As an example, the interrelationship between the perceived home instability and low levels of child intelligence is reported (Dumas et al., 2005), as well as high level of behavioral disorders (Petrill et al., 2004). As reported in a longitudinal study of the direction of effects of family environment and child intelligence, the perceived family environment instability influences low intelligence in children (Deater-Deckard et al., 2009).

Specialists in parent-child relationships report stable cross-cultural differences in the degree of emotional acceptance and the style of parental involvement in child's activities, as well as in the differences of child's perceptions of parenting. As demonstrated by research, Asian parents more actively participate in educating their children than European parents (Zhou et al., 2006; Lim, Lim, 2004; Huntsinger, Jose, Larson, 1998). This fact underlies the explanation of the cross-cultural supremacy of the school children from China, Singapore, and Korea in mathematics and STEM disciplines (PISA, www.pisa.oecd.org). The cross-cultural studies of the parental assessment of their children's intellectual abilities are of interest (Furnham, Rakow, Mak, 2002; Furnham, Mkhize, Mndaweni, 2004, etc.). As demonstrated by Furnham & Fukumoto (2008), Japanese parents generally rate their children lower in cognitive abilities, than parents from USA and European countries. Cross-cultural differences in parental ratings of intelligence are usually explained by the socially desired behavioral and personality traits in different cultural communities, for example, modesty in Japan (Furnham, Hosoe et al., 2002; Furnham, Fukumoto, 2008).

2. Problem Statement

To conclude, the theoretical analysis revealed some principal moments in research on the links of parenting and child cognitive abilities.

First, it is necessary to focus the research on the studying of child perceptions of mother's attitude, that is, the levels of emotional acceptance and the style of participation in child's activities. In particular, the level of acceptance can vary depending on emotional rejection of a child by a mother, and the style of mother's participation can vary from hostile detachment to positive involvement.

Second, it seems highly relevant to study the link between different aspects of children's perception of parental attitude and the intelligence test scores in children. In addition, it is necessary to interpret the causal relationships in accordance with the study design and the results.

Third, it is possible that the sample of primary school age children would be the most informative. At this age, on the one hand, the orientation towards importance of parenting still persists;

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and on the other hand, the reflexive abilities of children aged 8-10 years allow to assess the parental attitude adequately with the questionnaire tests.

Fourth, the structure of the interrelationships parental attitude perception and children intelligence will be examined from the point of cross-cultural resemblance and difference: the participants from Russian Federation and Kyrgyz Republic took part in the study representing the European and Asian models of family relationships.

3. Research Questions

In the cross-cultural comparative study we analyze the similarities and the differences for the measures of children's perceptions of maternal attitude and the level of intelligence at primary school age, and the structure of the associations.

4. Purpose of the Study

The aim of current study is the cross-cultural analysis of the interrelationships of children's perceptions of maternal attitude and their intellectual abilities on the Russian and Kyrgyz samples.

5. Research Methods

5.1. Participants

The sample comprised 1334 early school age children: 690 students (52.5% boys) from Russian Federation (Gymnasium, Moscow District), and 644 students (45.5% boys) from Kyrgyz Republic (Gymnasium, Bishkek city). The educational process in these two Gymnasia is conducted in Russian. The Kyrgyz children families' native language is Kyrgyz.

The age of Russian participants ranges from 6.8 to 11.7 years (M=9.3, SD=1.03); the age range of Kyrgyz participants is from 6.8 to 11.8 years (M=9.2, SD=1.16). The written informed consent was obtained from the parents for the participation of children in the study.

5.2. Measurement and procedure

The data were collected in Russia and Kyrgyzstan in accordance with the standards of cross-cultural research (Berry et al., 2002). The data were analyzed on the anonymized database.

- *The perceived maternal attitude*

  The perceived maternal attitude was assessed with the Russian version of The Children's Report of Parental Behavior Inventory, mother version, CRPBI (Schuldermann & Schuldermann, 1988). The aspects of child perception of parenting were conceptualized as scores for the questionnaire scales: 1) Acceptance, 2) Positive involvement, 3) Rejection, 4) Hostile detachment.
- *The children's intelligence*

  The children's intelligence was measured by the Raven's Progressive Matrices test, RPM (Raven, Raven, Court, 2002), which is positioned as the purest measure of intelligence as a

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latent variable, and does not require any special skills for the administration (see more in Tikhomirova et al., 2017). In addition, this test allows cross-cultural assessment of intelligence (Raven, Raven, Court, 2002). In the current study, not just the general test score is included in the statistical analysis, but the quantitative values for the A, B, C, D, E series are analyzed, since they define the level of maturity of certain mental operations. In particular, the A series reveals the ability to differentiate the elements; the B series – the ability to find analogies between the pairs of figures; the C series – the ability to understand the laws of figure transformations, the D series – to establish the quantitative and qualitative relationships for the figure and its elements; the E series – the ability for the analytic-synthetic information processing. The complexity of the tasks increases from A to E series.

6. Findings

All measures of the perceptions of maternal attitude and children intelligence were factor analyzed for the check of structural equivalence of the data from Russian and Kyrgyz samples. The factor analysis proved the invariant data structure: two factors emerged from the Russian and Kyrgyz samples, explaining 67.9% and 64.7% of the variance, respectively. Consequently, the results of factor analysis support the structural equivalence of data, allowing for the interpretation of the quantitative measures in the cross-cultural context.

6.1. Descriptive statistics & ANOVAs

The descriptive statistics and coefficients of inner consistency of the questionnaire scales of The Children's Report of Parental Behavior Inventory on Russian and Kyrgyz sample are provided in Table 01.

Table 01. Descriptive statistics and Cronbach's Alpha coefficients for the scales of The Children's Report of Parental Behavior Inventory

Scales	Russia			Kyrgyzstan		
	Mean	Standard Deviation	Cronbach's Alpha	Mean	Standard Deviation	Cronbach's Alpha
Acceptance	20.06	2.72	.73	20.92	3.00	.75
Positive involvement	17.85	2.41	.74	18.39	3.59	.72
Rejection	10.07	2.88	.75	9.86	3.24	.80
Hostile detachment	11.73	3.53	.79	11.19	3.85	.84

As shown in Table 01, the inner consistency Cronbach's Alpha coefficients are within a satisfactory range for all the questionnaire scales: from 0.73 to 0.79 on the Russian sample, and from 0.72 to 0.84 on the Kyrgyz sample. Thus, The Children's Report of Parental Behavior Inventory is proved to be a reliable measure.

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The Table 02 represents the descriptive statistics for the A, B, C, D, E series and the overall score for the Raven's Standard Progressive Matrices test, obtained on the Russian and Kyrgyz samples.

Table 02. Descriptive statistics for the series of Raven's Progressive Matrices test

Scale	Russia		Kyrgyzstan	
	Mean	Standard Deviation	Mean	Standard Deviation
A series	10.48	1.53	9.77	1.69
B series	9.95	2.39	8.44	3.08
C series	7.81	2.47	6.23	3.10
D series	7.94	2.57	5.58	3.51
E series	3.37	2.57	1.39	1.85
Total score	39.58	9.24	31.41	10.46

The maximum possible score for each series could be 12 points, minimal – 0 points. The maximum score of the overall score can reach 60. The decrease of the mean scores from the A to E series observed on the both samples corresponds to the gradual complexity increase of the problems in the Raven's Progressive Matrices test.

The one-way analysis of variance was employed for the examining of influence of the citizenship factor (Russian Federation and Kyrgyz Republic) on the perceived maternal attitude and intelligence in children.

The Levene's test for the equality of variances was applied to all distributions of the analyzed measures in all samples. The p-value was higher than 0.05 for Acceptance and Hostile detachment scales, which demonstrates the equality of the variance for the two populations on this measures. For the rest of the measures the significance level was lower than 0.05 suggesting that the variance is not equal for the rest of the test scores.

The results of the one-way analysis of variance are presented in Table 03 where the Country factor is the factor of citizenship of Russian Federation or Kyrgyz Republic; the dependent variable were the scores on The Children's Report of Parental Behavior Inventory and the Raven's Progressive Matrices test.

Table 03. The estimation of the influence of the citizenship factor on the analyzed measures

Measure, test	Sum of squares (SS)	Fisher's criterion (F)	Significance level (p)	Effect size (η^2)
Acceptance, CRPBI	194.75	23.47	.00	.02
Positive involvement, CRPBI	78.25	12.40	.00	.01
Rejection, CRPBI	10.48	1.11	.29	.00
Hostile detachment, CRPBI	78.73	5.71	.02	.01
A series, RPM test	76.31	29.34	.00	.03

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Corresponding Author: Tatiana Tikhomirova
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B series, RPM test	351.02	43.44	.00	.04
C series, RPM test	435.90	52.47	.00	.05
D series, RPM test	1059.66	106.40	.00	.09
E series, RPM test	834.37	176.59	.00	.14
Total score, RPM test	12053.21	119.22	.00	.10

As the Table 03 shows, the Citizenship factor's effect was statistically significant for the three measures on the scales of The Children's Report of Parental Behavior Inventory and for the all series and the overall score of the Raven's Progressive Matrices test. In particular, the significant effects of citizenship were obtained for such aspects of children' perceptions of maternal attitude as Acceptance, Positive involvement, and Hostile detachment. Meanwhile, the measures of the Kyrgyz children's perceptions of their mothers are higher for the "positive" scales (Acceptance and Positive involvement) and lower for the Hostile detachment scale, comparing to the scores of the Russian children. Small effect sizes for these scales were observed – from 1% to 2%.

Higher effect sizes for the factor of citizenship were yielded for all series of the Raven's Standard Progressive Matrices test. The effect size increases with the complexity of the test series. The smallest effect size was yielded for the A series (η^2 =0.03, p=0.00), and the largest – for the E series (η^2 =0.14, p=0.00). The citizenship effect explained 10% of variance for the total score. The Russian primary school age children display better results than their Kyrgyz peers, based on the mean series scores (see Table 01).

6.2. The interrelationships between mother-child interactions and child's intelligence

The associations between the different aspects of children's perceptions of maternal attitude and children intelligence were studied using correlation analysis. The correlation coefficients for the scales from The Children's Report of Parental Behavior Inventory and the overall score on the Raven's Progressive Matrices on the Russian (first line) and Kyrgyz (second line) samples are presented in the Table 04.

Table 04. The matrix of intercorrelations of the aspects of parenting and child intelligence in Russian and Kyrgyz samples

	(1)	(2)	(3)	(4)	(5)
Acceptance (1)	1 1				
Positive involvement (2)	.64** .68**	1 1			
Rejection (3)	-.43** -.37**	-.41** -.33**	1 1		
Hostile detachment (4)	-.48** -.38**	-.47** -.38**	.68** .74**	1 1	
Total score on RPM test (5)	.13** .04	.12** .05	-.35** -.17**	-.24** -.22**	1 1

*Note. ** $p < 0.01$, * $p < 0.05$*

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It is worth noticing a great number of statistically significant associations between the measures of maternal attitude and child intelligence in the presented correlation matrix. On the other hand, the positive associations between intelligence and Acceptance and Positive involvement scales, as well as the negative correlations between Rejection and Hostile detachment scales.

The absence of the associations between the "positive" questionnaire scales (Acceptance and Positive involvement) and the overall score on the intelligence test is the special feature of the correlation analysis results on the Kyrgyz sample. At the same time, Rejection and Hostile detachment scales correlate negatively with intelligence. The correlation analysis conducted on the united sample demonstrated the results close to the Kyrgyz sample – no correlations of the overall score on the Raven's Progressive Matrices test with Acceptance and Positive involvement were found.

However, the correlation analysis does not reveal any causal relationships between the aspects of children perceptions of maternal attitude and child intelligence level. For example, on the one hand, we can hypothesize for the Russian sample that if maternal attitude is perceived as emotionally supportive with positive involvement in child's activities, than the child demonstrates higher intelligence scores. On the other hand, it is possible that a child with higher intelligence perceived mother's attitude as more emotionally supportive.

6.3. The aspects of mother-child interactions as predictors of child's intelligence

In the multiple regression analysis, the aspects of child perceptions of maternal attitude – Acceptance, Positive involvement, Rejection, and Hostile detachment – were taken as predictors for the success in each series and overall score on the Raven's tests on the samples from Russia and Kyrgyzstan. The Table 05 presents the characteristics of the regression models, where the dependent variables were the scores for each series and the total score for the Raven's Progressive Matrices test, on the Russian (first line) and Kyrgyz (second line) samples.

Table 05. The regression models characteristics, the dependent variables – the series and the total score of RPM test

Dependent variable	R^2	Corrected R^2	F-statistic	Significance level
A series	.06 .01	.05 .00	7.43 1.28	.00 .28
B series	.09 .02	.08 .01	11.53 2.84	.00 .03
C series	.11 .06	.10 .05	14.34 8.47	.00 .00
D series	.08 .05	.08 .05	10.86 8.38	.00 .00
E series	.06 .03	.05 .02	7.82 3.56	.00 .00
Total score	.12 .05	.12 .04	17.00 7.46	.00 .00

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Corresponding Author: Tatiana Tikhomirova
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As the Table 05 shows, performance on the series from Raven's Progressive Matrices test are predicted by the regression models, explaining from 5% to 10% of the variance of variables on the Russian sample. The results of estimation of these regression models with the Fischer criterion allow to conclude that these regressions are generally significant. For the Kyrgyz sample, the regression models for the B, C, D, E series are significant, explaining from 1% to 5% of variance on the measures.

It should be noted, that higher values of the determination coefficient were obtained on the Russian sample for the separate series measures as well as for the overall test score. In particular, the multiple regression analysis explained 12% of variance for the overall score on the Russian sample, and 4% of variance on the Kyrgyz sample. Consequently, the contribution of the perception of maternal attitude to the achievement measures is more significant in Russian society, than in Kyrgyzstan.

The analysis of determination coefficients conducted on the Russian and Kyrgyz samples demonstrate the same tendencies. For example, the determination coefficient reaches its maximum in the C series– the medium complexity series (0.10 and 0.08 for Russian and Kyrgyz participants, respectively, with $p = 0.00$) – in both samples. In addition, the minimal values of the corrected R^2 are yielded for both the easiest A and the most difficult E series. In particular, the determination coefficients for series A and E on the Russian sample are 0.05, with $p = 0.00$; the regression was non-significant (p=0.28) for the A series on the Kyrgyz sample, and for the E series the determination coefficient is 0.02 with p=0.00. According to the data, the differences in child perceptions of maternal attitude explain more variance in the intelligence tasks of medium complexity for, and less variance in minimal and maximal complexity tasks.

Regression models for the separate tests and the overall score included four aspects of children's perceptions of maternal attitude and the predictors: 1) Acceptance, 2) Positive involvement, 3) Rejection, 4) Hostile detachment. Table 06 presents the generalized results of the regression analysis inside each sample for the test series scores and the total score. The Table 06 includes only the significant predictors – the aspects of children's perceptions of maternal attitude.

Table 06. The estimation of the regression parameters, the prediction of the scores on series and the total score of the RPM test

Sample	Dependent variable	Significant predictors	β	B	Standard error B	95% confidence interval for B	
Russian	A series	Rejection	-.22***	-.12	.03	-.18	-.06
	B series	Rejection	-.28***	-.23	.05	-.33	-.14
	C series	Rejection	-.33***	-.28	.05	-.38	-.18
	D series	Rejection	-.31***	-.28	.06	-.38	-.18
	E series	Rejection	-.24***	-.21	.06	-.32	-.10
	Total score	Rejection	-.35***	-1.12	.19	-1.49	-.75
Kyrgyz	A series	–					
	B series	Hostile detachment	-.16*	-.12	.05	-.22	-.02
	C series	Hostile detachment	-.21**	-.17	.05	-.27	-.08
	D series	Hostile	-.24***	-.22	.06	-.33	-.11

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Corresponding Author: Tatiana Tikhomirova
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		detachment					
	E series	–					
	Total score	Hostile detachment	-.21**	-.58	.17	-.91	-.25

*Note. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$*

As the regression parameters estimation show, the only statistically significant predictor for all the series and the overall score for the intelligence test is the Rejection aspect of children's perception of maternal attitude, with the negative values of β-coefficients. The β-coefficient reaches its maximum in the C series (-0.33, $p < 0.001$). It reaches minimum when predicting the scores on A and E series, which corresponds to the decrease in the variance of the influence of maternal rejection on these series. As for the overall Raven's Standard Progressive Matrices test score, the β-coefficient is -0.35 with $p = 0.00$. Thus, the higher is the level of emotional rejection according to child's perception, the lower are child's intelligence scores.

The multiple regression analysis conducted on the Kyrgyz sample yielded slightly different results. On the one hand, the regression analysis revealed the only predictor for the test series and the overall score, like on the Russian sample, while another "negative" aspect of child's perception of maternal attitude – Hostile detachment – became the predictor.

In addition, this aspect is the predictor of performance on the series B, C, D. No predictors were found for the easiest A series and the hardest E series. The β-coefficient for the overall score as a dependent variable was -0.21 with $p = 0.00$, which suggests that there is some cross-cultural resemblance in the structures of the associations between this aspect of maternal attitude and the overall intelligence score.

In summary, the current cross-cultural comparative study revealed the similarities and the differences for the measures of children's perceptions of maternal attitude and the level of intelligence at primary school age, and the structure of the associations was studied. For example, the variance analysis demonstrated the statistically significant effect of the citizenship factor for the three aspects of maternal attitude, as assessed by children, – Acceptance, Positive involvement, and Hostile detachment. Meanwhile, in correspondence with the mean scores on these aspects, the Kyrgyz children view their mothers' attitude as more accepting, with higher positive participation in children's activities. Nevertheless, the effect size is almost negligible – from 1% to 2%.

The cross-cultural differences with larger effect sizes were found for intelligence (overall score and for each test series). In particular, the effect size of the citizenship for the overall intelligence score is 0.10 ($p < 0.001$). At the same time, the results suggest that it is reasonable to analyze not only the overall score, but also the single series scores, which differ only by their complexity. For example, the estimation of the effect sizes of the citizenship demonstrates the gradual increase of the percent of the explained variance from the simplest A series to the E series (3%, 4%, 5%, 9% and 14%, $p < 0.001$).

This fact suggests that there is an increase of contributions of citizenship and, possibly, of the system of education, to the level of success in solving gradually more complex test tasks by primary school age children. It should be also noted that the Russian children generally outperform Kyrgyz participants in all series.

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Corresponding Author: Tatiana Tikhomirova
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As the correlation analysis has demonstrated, there are some differences in the structure of the interrelationships between the differences in children's perceptions of maternal attitude and the achievement on intelligence test tasks on the Russian and Kyrgyz samples. For example, all the scores on The Children's Report of Parental Behavior Inventory correlate with the overall intelligence test score. At the same time, it was found that the Russian children's perceptions of maternal attitude as emotionally accepting and involved are positively associated with the intelligence scores. The "negative" scales – Rejection and Hostile detachment – are negatively associated with the intelligence scores.

No associations of child intelligence with positive aspects of child perceptions of maternal attitude were found on the Kyrgyz sample. The structure of the associations of negative aspects of the perceived maternal attitude to children with child intelligence was similar with the results of the correlation analysis on the Russian sample. The absence of associations between the positive aspects of maternal attitude and child intelligence might be explained by the condition that the Kyrgyz children of primary school age tend to view the maternal attitude to themselves as more emotionally accepting and with more constructive positive participation, in contrast with the view of their Russian peers.

The regression analysis conducted within each sample showed 12% of explained variance on the Russian sample, and 4% – in Kyrgyz sample. The only significant predictors found for intelligence test scores on both samples were the "negative" scales of the perceived maternal attitude. According to the results, Rejection is a significant predictor on the Russian children sample, and Hostile detachment – on the Kyrgyz sample. Thus, the influence of the negative aspects of the child perceptions of maternal attitude seems to be significant for the level of cognitive development both in Russian and Kyrgyz children: the more rejecting and aggressive the children view their mother's behavior, the lower are their intelligence scores.

The trajectory of change of the corrected R^2 determination coefficient is worth noticing, which allows to examine the contribution of child perceptions of maternal attitude to the success in the single series of the Raven's Progressive Matrices test. In correspondence with the data, the children's perceptions of maternal attitude explain significantly smaller percent of variance for the minimal and maximal complexity series (A and E) than for the series of tasks of medium complexity (C series). Probably, the perceived maternal attitude to children explains more or less variance in a certain range of complexity of the intelligence tasks.

7. Conclusion

To conclude, the current study allowed to refine the structure of the inter-relationships of primary school age children's perceptions of mother's attitude with the intelligence test scores of children on the samples from Russian Federation and Kyrgyzstan. In particular, it was demonstrated that the Kyrgyz children perceive their mothers' attitude as more emotionally accepting and less rejecting, in comparison with the Russian peers. At the same time, the results of Russian school children on solving cognitive problems are on average higher than of Kyrgyz school children. The predictors of intelligence scores were found: the child perceptions of maternal attitude as emotionally rejecting on the Russian sample; the mother's level of hostile detachment on the Kyrgyz sample, as assessed by children. The results of the regression analysis conducted on both samples support the contribution of the negative aspects of

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perceived maternal attitude to children's intelligence scores: the higher children rate their mothers as emotionally rejecting, the lower intelligence scores the children have. Interestingly, the contribution of these perceived aspects of maternal attitude to children's intelligence scores depends on the intelligence test tasks complexity.

Along with that, it seems necessary to ask a question on the directions of the associations between the children's perceptions of maternal attitude and children's intelligence scores. For example, there is a possibility that the aspects of children's perceptions of parenting affect the intelligence test scores. However, it is possible to hypothesize that the level of child cognitive development influences the differences in children's perceptions of parenting. However, the scientific answer to this question could be yielded only from the longitudinal analysis of the structure of associations, which would include the samples from different age and social-cultural groups.

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