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**BEHAVIOURAL CORRELATES OF CHILD-MOTHER**  
**ATTACHMENT IN PRESCHOOL AND PRIMARY SCHOOL**  
**CHILDREN**

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*Abstract*

The present study aims to describe relationship between the child-mother attachment and behaviour and body scheme of preschool and primary school children. The study includes 80 pre-schoolers aged 4-6 years and 70 first-graders aged 6-7 years. Child-mother attachment is assessed using N. Kaplan's approach. Behavioural manifestations are assessed on the basis of Stott Delinquency Observation Form (SDOF). Body scheme is assessed registering the degree of deviations in body, kinaesthetic and dynamic praxis.

The study shows that the child-mother attachment style does not depend on the child's gender. The educators and teachers evaluate the behaviour of the boys that of the girls as less satisfactory regardless of attachment style. The estimates of the behavioural deviations of preschool and primary school children generally are independent of the child-mother attachment style. The revealed independence testifies to the existence of the psychological mechanisms of the compensation of insecure attachment styles. To a significant extent, the estimates of the behavioural deviations of pre-schoolers and primary school children are associated with abnormality in one or more components of body scheme. The degree of deviations in one or more components of body scheme largely relates to the child-mother attachment style.

The main conclusion consists in that the child-mother attachment style does not directly affect the child's behaviour in the interaction with other significant adults. The influence of attachment style is mediated by body scheme. Body scheme is not the only mediating factor. Social perceptions also mediate the influence of attachment on behaviour.

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**Keywords:** Attachment, behaviour, body scheme, school, children.



## 1. Introduction

The concept of attachment is introduced by J. Bowlby (1957) to characterize the nature and development of the child's relationships with other people. It is assumed that the idea of attachment will help establish a link between the behavioural and psychoanalytic approaches. At present, the impact of attachment on successful adaptation is shown even at the university level of education (Volkova, 2017). One can speak confidently of the high predictive value of the concept of attachment in the cultural context (Ratner, 2008). The positive impact of secure attachment on further development is evident. But the psychological mechanisms and behavioural manifestations of such influence have not been fully studied yet. The influence of various detrimental types of attachment has been studied even less (Yaroshevskaya, 2017).

## 2. Problem Statement

The concept of attachment implies certain behavioural manifestations. Corresponding mechanisms are described in some studies. For instance, one of the physiological correlates of attachment is the hypothalamic-pituitary-adrenal axis. Anxious attachment style is associated with a greater reactivity of cortisol than secure attachment style. However, avoidant attachment style does not differ significantly from secure one (Smyth et al., 2015). There is evidence that anxious attachment style is associated with a low impact of cognitive behavioural therapy on anxiety disorders (Nielsen et al., 2018). Anxious attachment style is correlated with intimate partner violence victimization after 17 years old (McClur & Parmenter, 2017).

In this context, according to the cohort study of children under 5 years (Wright et al., 2018), emotional sensitivity disturbances in children are not associated with attachment styles, although the emotional sensitivity of parents does allow predicting attachment style. Children in families demonstrate much more secure attachment than orphans, but the both groups are equally often able to show compulsory care and obedience to a close adult (Mukhamedrakhimov & Pleshkova, 2008).

On the mother's part, attachment style is generally stable during the first two years of motherhood (Stern et al., 2018). Data on the stability of the child's attachment style are brought under review by T.V. Kazantseva (Kazantseva, 2010). However, analyzing a number of studies, N.N. Avdeeva comes to the conclusion about the ambiguity in the understanding of the stability of attachment throughout life (Avdeeva, 2017).

The age crisis of 7 years is associated with the beginning of schooling. At this time, the child-adult relationships split into the child-close-adult relationship and child-social-adult relationship (Karabanova, 2005). Therefore, the child-mother attachment style at this age may have significant psychological implications. The studies of the behavioural correlates of attachment of preschool and primary school children on Russian samples are lacking, according to the information-bibliographic system eLIBRARY.RU.

### 3. Research Questions

At present, attachment studies do not provide a clear solution to the problem of psychological mechanisms of the influence of child-mother attachment on new relationships established later on with other people.

A review of studies on the topic allows us to consider two possible solutions.

1. The nature of child-mother attachment determines the stable patterns of behaviour. Later on, the behaviour evolves, but previously existing patterns are reproduced in new situations.

2. The impairment of child-mother attachment to mother as well as other factors affect mental development. Neuropsychological studies of development suggest that body scheme may be viewed as a significant factor. The formation of body scheme begins in early childhood and is closely linked to the nature of attachment (Perezhigina & Solondaev, 2006; Semenovich, 2007).

### 4. Purpose of the Study

Description of the relationship between the child-mother attachment and behaviour and body scheme of preschool and primary school children.

### 5. Research Methods

The sample included two groups of children:

- 80 preschoolers aged 4-6 years old, (40 boys and girls each);
- 70 first-graders aged 6-7 years old, (35 boys and girls each).
- Child-mother attachment was assessed using N. Kaplan's test, adapted by G.V. Burmenskaya (Burmenskaya, 2005).
- Behavioural manifestations were assessed on the basis of Stott Delinquency Observation Form (SDOF) (Dubrovina et al., 1991). In addition, educators' and teachers' assessments of the degree of the behavioural adaptation of the children were registered.
- Body scheme was evaluated according to the following methods (Tsvetkova, 1998): the Head's Test, the Kinaesthetic Finger Praxis Test and the Dynamic Praxis Test (N.I. Ozeretsky's "Fist - Edge of Palm - Palm" test).
- The results were processed with the help of statistical computing software R (R-cran, 2017).

### 6. Findings

6.1. The distribution of attachment styles in two groups of subjects is shown in Table 01.

**Table 01.** The distribution of attachment styles in two groups of subjects

AS	Preschool children	Primary school students	All
A (avoidant attachment)	25	28	50
B (secure attachment)	33	22	55
C (ambivalent attachment)	12	14	29
D (disorganized attachment)	10	6	16

There is no significant statistical differences between the two groups of preschool and primary school children in the frequency of ASs: Fisher's Exact test for Count Data p-value = 0.42.

**6.2.** The change in the total score in SDOF (the degree of behavioural disorders), depending on attachment styles is shown in Figure 1. All mean values are in the norm range, which corresponds to one of the sampling criteria - absence of mental disorder in child's diagnosis.



**Figure 01.** Attachment style and behaviour, mean, boys and girls

**6.2.1.** Judging from Figure 1, educators and teachers see more deviations in the behaviour of boys than in that of the girls'. This difference is statistically significant and manifests itself regardless of the AS: Wilcoxon Rank Sum test with continuity correction  $W = 2124$ , p-value = 0.01. The average shift in behavioural estimates is 3 points, 95 percent confidence interval being 6-1. Different attachment styles are observed in boys and girls with approximately the same frequency: Fisher's Exact Test for Count Data p-value = 0.23. This result is in line with other studies' data on the existence of gender differences in behaviour (McDermott et al., 2002). For further processing, it is important to mention that the nature (direction) of the influence of attachment styles on behaviour generally coincides both in boys and girls. The only difference is its intensity.

**6.2.2.** Now let's assess the influence of attachment style on SDOF indicator of behavioural disorders, boys and girls taken together. The distribution of the total score in SDOF differs significantly from the normal one: Shapiro-Wilk Normality test  $W = 0.87851$ , p-value =  $9.6e-10$ . Therefore Kruskal-Wallis Rank Sum test was applied, which showed no statistically significant relationship between attachment style and overall sample behaviour: Kruskal-Wallis Chi-Squared = 4.8, df = 3, p-value = 0.19. The result is confirmed by pairwise comparisons using Wilcoxon Rank Sum test: minimal p-value = 0.24, p-value adjustment method: Holm.

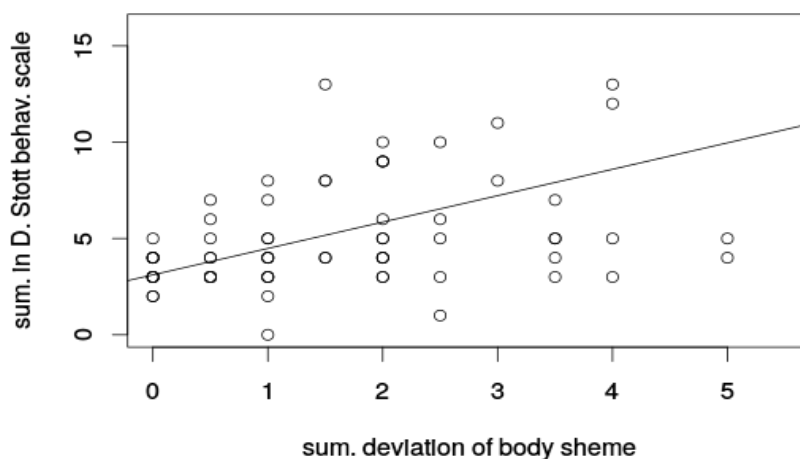
**6.2.3.** The most significant means differences in Figure 1 are in D (Disorganized) AS. It was found in 8 boys and 8 girls. From a small sample like that, it can only be inferred that this attachment style is more manifested in the behaviour of boys than girls. The mechanisms of this phenomenon and the verification of its reliability require additional research.

But the proposed assumption has a statistical basis. Initially, the null hypothesis was formulated as follows: the degree of behavioural disorders in boys and girls taken together was independent of the attachment to mother (A, B, C, D). Now, let us reformulate our hypothesis: the degree of behavioural impairment is independent of the presence in child of a disorganized attachment style (D, not D). Its testing shows the significance of the influence of disorganized attachment style regardless of the gender of subjects in comparison with all other types taken together: Wilcoxon Rank Sum test with continuity correction  $W = 772.5$ ,  $p\text{-value} = 0.03$ ; alternative hypothesis: true location shift is not equal to 0.

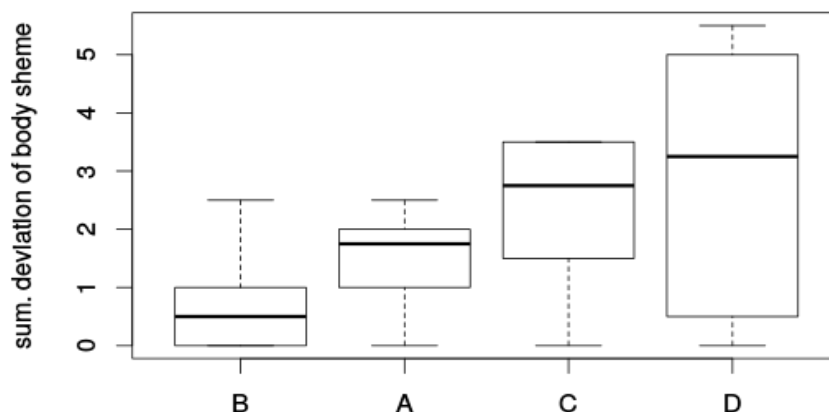
**6.2.4.** Let's check the following hypothesis statistically: the degree of child behavioural impairment is independent of the presence of a reliable attachment to mother (B, not B). Statistical analysis shows the absence of a statistically significant effect of a reliable attachment style in comparison with all other types taken together (or with any randomly selected other style): Wilcoxon Rank Sum test with continuity correction  $W = 2558.5$ ,  $p\text{-value} = 0.42$ ; alternative hypothesis: true location shift is not equal to 0.

This result is consistent with the result of independence of behavioural manifestations from AS (6.2.2.). It corresponds to data on the ability of exercising compulsory care and obedience to a close adult (Mukhamedrakhimov & Pleshkova, 2008). It is also in line with data on splitting of one child-adult relationship into two, i.e. child-close-adult and child-social-adult (Karabanova, 2005).

At first glance, these results contradict common data sustaining a positive impact of the reliable attachment style. But the absence of behavioural manifestations of reliable attachment style can be understood as an indicator of the existence of "natural" mechanisms of compensation of negative influences of unreliable attachment styles. Possible mechanisms of compensation of insecure ASs need further research.



**Figure 02.** Deviation of body scheme and behaviour



**Figure 03.** Attachment style and deviation of body scheme, boxplot

**6.3.** Using linear regression analysis, we evaluated the relationship between behavioural manifestations and the total index of deviations in body scheme, which is graphically presented in Figure 2. The relationship is statistically significant: F-statistic: 19.85 on 1 and 68 DF, p-value = 0.00003. The intensity of communication is quite significant: adjusted R-squared = 0.21.

**6.4.** We also performed a regression analysis of the relationship between the total index of the deviations in body scheme and attachment style (Figure 3). The relationship is statistically significant: F-statistic: 6.49 on 3 and 66 DF, p-value = 0.0006. The intensity of the relationship is quite significant: adjusted R-squared = 0.19.

The results in 6.3 and 6.4. are consistent with other studies on the formation of body scheme. Body scheme is formed in the process of mother-child interaction. Formation of body scheme provides coordination of motor-kinesthetic analysis and synthesis with visual analysis and synthesis (Perezhigina & Solondaev, 2006). On the basis of body scheme, external behaviour, speech and emotions are organized and regulated (Semenovich, 2007).

## 7. Conclusion

The child-mother attachment style does not depend on the child's gender.

Educators and teachers generally evaluate the behaviour of boys as less satisfactory in comparison with the behaviour of girls. Such assessment does not depend on child-mother attachment style. Most likely, such difference reflects some specific social perceptions. Because of their complex nature, it is difficult to determine the extent to which differences in estimates correspond to differences in the real behaviour of boys and girls. The study of social perceptions is not the aim of our research. The resulting mixing of variables is partially eliminated in statistical processing.

Estimates of behavioural deviations of preschool and primary school children generally are independent of child-mother attachment style. The least common disorganized attachment style somewhat stands out. But the disorganized attachment style does so only in comparison with all the other styles. This

gives no reason to doubt the independence of behaviour and attachment style, yet indicating the prospect for further research.

The independence of the behavioural assessments on the child-mother attachment styles testifies to the existence of psychological mechanisms for compensating the insecure attachment style. In this context, it would be interesting to further study the psychological influence of each impaired attachment style separately.

The estimates of the behavioural deviations of preschool and primary school children are significantly related to deviations of one or more components of body scheme (spatial, kinesthetic, dynamic praxis).

The degree of deviations of one or more body scheme components (spatial, kinesthetic, dynamic praxis) is substantially related to the child-mother attachment style.

The main inference from the study is that the child-mother attachment style does not directly affect the child's interaction with other significant adults.

To a noticeable extent, the influence of the child's attachment to the mother is mediated by body scheme. Body scheme is not the only mediating factor. Judging by the results of the study, social perceptions also mediate the influence of attachment on behaviour.

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## References

- Avdeeva, N.N. (2017). Child-Parent Relationship Therapy: Child-Parent Interaction Therapy of Sheila Eyberg (on foreign sources). *Journal of Modern Foreign Psychology*; 6(2): 7-14. doi: 10.17759/jmfp.2017060201
- Bowlby, J. (1957). An ethological approach to research in child development. *British journal of medical psychology*; 30(4): 230-240. doi:10.1111/j.2044-8341.1957.tb01202.x
- Burmenskaya, G.V. (2005). Metodiki diagnostiki privyazannosti k materi rebenka doshkol'nogo i mladshhego shkol'nogo vozrasta. *Psikhologicheskaya diagnostika*; (4): 5-44. [in Russian]
- Dubrovina, I. V., Akimova, M. K., & Borisova, E. M. (1991). *Rabochaya kniga shkol'nogo psikhologa [The work book of the school psychologist]*. Moscow: Prosveshchenie.
- Karabanova, O.A. (2005). *Vozrastnaya psikhologiya*. Moscow: Airis-press. [in Russian]
- Kazantseva, T.V. (2010). Issledovanie psikhologicheskoi blizosti v teorii privyazannosti. *Vestnik Sankt-Peterburgskogo universiteta. Sotsiologiya*; (4): 94-98. [in Russian]
- McClure, M. M., & Parmenter, M. (2017). Childhood trauma, trait anxiety, and anxious attachment as predictors of intimate partner violence in college students. *Journal of interpersonal violence*; 0886260517721894.
- McDermott, P. A., Leigh, N. M., & Perry, M. A. (2002). Development and validation of the preschool learning behaviours scale. *Psychology in the Schools*; 39(4): 353-365.
- Mukhamedrakhimov, R. Zh., Pleshkova, H.L. (2008). Osobennosti privyazannosti u detei v sem'yakh i domakh rebenka [Peculiarities of attachment in children in families and children's homes]. *Defektologiya [Defectology]*; (2): 37-44.
- Nielsen, S. K. K., Hageman, I., Petersen, A., Daniel, S. I. F., Lau, M., Winding, C., Vangkilde, S. (2018). Do emotion regulation, attentional control, and AS predict response to cognitive behavioural therapy

- for anxiety disorders? – an investigation in clinical settings. *Psychotherapy Research*.  
<http://dx.doi.org/10.1080/10503307.2018.1425933>
- Perezhigina, N.V., SolondaeV V.K. (2006) Problemy normy i patologii psikhicheskogo i motornogo razvitiya. Yaroslavl': YarGU. [in Russian]
- R Core Team. (2017). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org>
- Ratner, F.L. (2008). Istoriogenez detsko-roditel'skikh otnoshenii i teoriya privyazannosti. *Obrazovanie i samorazvitie*. 3(9), 238-243. [in Russian]
- Semenovich, A.V. (2007). *Neiropsikhologicheskaya korrektsiya v detskom vozraste. Metod zameshchayushchego ontogeneza*. Moscow: Genezis. [in Russian]
- Smyth, N., Thorn, L., Oskis, A., Hucklebridge, F., Evans, P., & Clow, A. (2015). Anxious AS predicts an enhanced cortisol response to group psychosocial stress. *Stress*; 18(2): 143-148.
- Stern, J. A., Fraley, R. C., Jones, J. D., Gross, J. T., Shaver, P. R., & Cassidy, J. (2018). Developmental Processes Across the First Two Years of Parenthood: Stability and Change in Adult AS. *Developmental psychology*. doi: 10.1037/dev0000481
- Tsvetkova, L.S. (1998). *Metodika neiropsikhologicheskoi diagnostiki detei [Method of neuropsychological diagnosis of children]*. Moscow: Kogito-tsentr.
- Volkova, E.E. (2017). Tipy privyazannosti studentov i ikh uspehnost' obucheniya v vuze. *Vestnik Kemerovskogo gosudarstvennogo universiteta*; (2): 123-128. [in Russian]
- Wright, N., Hill, J., Sharp, H., & Pickles, A. (2017). Maternal sensitivity to distress, attachment and the development of callous-unemotional traits in young children. *Journal of Child Psychology and Psychiatry*. doi:10.1111/jcpp.12867
- Yaroshevskaya, S.V. (2017). Parenting and children's representation of interpersonal relations: foreign research review. *Journal of Modern Foreign Psychology*; 6(2): 36-45. doi: 10.17759/jmfp.2017060204