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EMPIRICAL ARTICLE

The Need for Psychological Knowledge among Economically Inactive Social Groups

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Abstract. *Relevance and Background*. In an era of profound social transformation and the proliferation of pseudoscientific psychological content, understanding the genuine demand for scientific psychological knowledge has become a critical societal imperative. While public interest in psychology is growing, it is paradoxically accompanied by the widespread acceptance of simplified, often unscientific, conceptions of the mind, leaving scientifically grounded knowledge inaccessible to a large portion of the population. This disconnect necessitates a systematic investigation into the need for psychological knowledge, conceptualized as a multidimensional socio-psychological phenomenon encompassing cognitive, motivational, value-based, and reflexive components. Addressing this gap is essential for developing evidence-based educational interventions and counteracting the dissemination of non-scientific psychological narratives. *Objective*. This study aims to identify the individual and socio-psychological determinants of the need for psychological knowledge among economically inactive social groups (students and retirees), with a focus on regional, gender, and age-specific variations. *Methods*. A mixed-methods approach was used, combining digital trace data and survey responses. The empirical base included over 2.2 million Yandex search queries, automated content analysis of 1694 posts from the VKontakte social network (2019–2025), and a survey of 522 respondents from three Russian regions (Irkutsk region, Karachay-Cherkess Republic, and Moscow). Analytical techniques comprised digital footprint analysis, correlation and factor analyses, ANOVA, and comparative group analysis. Validated instruments (e.g., adapted MSCEIT, ZTPI, SJO) were used to assess personality characteristics. *Results*. Interest in psychological knowledge proved to be widespread (popularity index 101%) yet markedly heterogeneous across regions, peaking in the Far Eastern (115%), Siberian (112%), and Southern (108%) federal districts. Counter to common assumptions, personal characteristics correlated only weakly with interest ($r \approx 0.25$). Age emerged as the strongest predictor: students (18–25 years) reported high interest (mean 7.8/10) oriented toward self-development and career, whereas retirees (60+ years) showed moderate interest (mean 5.2/10) focused on health and interpersonal relationships. Gender differences were qualitative rather than quantitative: women's interest was linked to internal harmony and relational well-being ($r = 0.58$), while men's interest centered on external effectiveness and social influence ($r = 0.62$). Discourse analysis revealed that online discussions about psychology were dominated by commercialized (28.4% of variance) and politicized (21.7%) content, highlighting a critical challenge for science communication. *Conclusion*. The need for psychological knowledge is a dynamic, context-sensitive phenomenon shaped primarily by age-related developmental tasks, gender-specific orientations, and regional access to educational resources—not by stable personality dispositions. The distinct profiles of students and retirees underscore the urgency of developing targeted educational programs and public outreach strategies that bridge the divide between scientific psychology and public demand. The findings also sound a cautionary note: without systematic intervention, the public's legitimate interest in psychology risks being captured by commercial and pseudoscientific actors.

Keywords: Need for Cognition, Psychological Knowledge, Economically Inactive Groups, Students, Pensioners, Social Psychology, Digital Behavior, Search Queries, Gender Differences, Age Psychology

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1. Introduction

Contemporary society is undergoing profound transformations that permeate all spheres of social life, from interpersonal relationships to global communications. In this context, knowledge about the mechanisms of social cognition, motivation, group dynamics, and psychological regulation of behavior acquires particular significance (Aprelikova, Kitova, 2019, 2020; Zhuravlev, Kitova, 2025; Kitova, 2019). Psychology, especially its social dimension, serves not only as a science of human beings in society but also as a resource for the sustainable development of personality and social institutions.

However, alongside a growing interest in psychological knowledge, a paradoxical deformation is observed in society: simplified, often pseudoscientific notions of the mind are becoming widespread, while genuinely scientific understanding remains inaccessible to a significant portion of the population (Kitova, Aprelikova, 2019a, b). This situation necessitates addressing a fundamental problem: the need for psychological knowledge, understood as a multidimensional socio-psychological phenomenon integrating cognitive, motivational, value-based, and reflective components.

A central theoretical issue thus arises: how do scientific and everyday forms of psychological knowledge relate, and what cognitive, emotional, and social mechanisms underpin the need to acquire them? This question resonates with the interdisciplinary integration and transformation of scientific knowledge (Ananyev, 2001; Bratus, 1988; Zhuravlev, 1988; Leontiev, 2005; Rubinshtein, 2002; Sechenov, 2019), where psychology occupies a central yet contradictory position—aspiring to scientific rigor while being deeply incorporated into everyday consciousness, often in distorted forms.

From a methodological standpoint, the problem of studying the need for psychological knowledge remains underdeveloped in both Russian (e.g., Aprelikova, Kitova, 2019; Zhuravlev, Kitova, 2025) and international literature (Baltes & Baltes, 1990; Deci & Ryan, 2000; Erikson, 1968; Ryff, 1989; Triandis, 1995). Existing approaches often fail to account for the reflexive, personally meaningful, and ethically charged nature of psychological knowledge specifically. Furthermore, there is a lack of specialized, validated instruments for its measurement, forcing researchers to rely on borrowed scales, unvalidated author questionnaires, or fragmented qualitative data, which complicates comparative and quantitative research.

In Western psychology, the concept of "need for cognition," which refers to an intrinsic motivation to engage in thinking and derive pleasure from intellectual work (Shepeleva et al., 2018)—offers a relevant parallel. This characteristic, sensitive to age and positively related to academic performance, aligns with our understanding of interest in psychology as a manifested cognitive need.

Importantly, need for cognition is positively correlated with a promotion focus (orientation toward achievements and self-development) and negatively with a prevention focus (orientation toward safety and risk minimization) (Oiknine et al., 2021). Within the framework of Self-Determination Theory, basic psychological needs for autonomy, competence, and relatedness play a key role in motivational regulation (Ryan & Deci, 2017; Kermavnar et al., 2024). Thus, age, gender, and status differences in interest in psychology may be mediated not only by cognitive motivation but also by the degree of satisfaction of these basic needs. In Russian psychology, the concept of "subjectness" (subjektnost')—the individual's capacity for self-identification, life strategy construction, and responsibility for one's actions—is closely related (Dyachkov, Gordeeva, 2022). Cognitive subjectness can be viewed as an integrative quality shaped by the need for cognition and the fulfillment of basic psychological needs, linking variations in psychological interest to deeper motivational and personal foundations.

The practical urgency of this problem is underscored by the growing demand for psychological knowledge in education, the need to enhance psychological literacy among the general population (including counteracting pseudopsychology), its relevance in interdisciplinary fields (management, medicine), and the challenges of digitalization, which creates an illusion of understanding widely available psychological content without deep comprehension. A particularly noteworthy factor among youth is the romanticization of mental disorders in literature, cinema, and media (cited by 80.6% of students in one study), alongside the demand for self-education (87.1%) and cohesion in small groups (96.8%) (Bedina, 2022). These factors must be accounted for in designing educational programs aligned with genuine motives.

This study specifically examines the need for psychological knowledge among economically inactive social groups—students and pensioners (Kitova & Aprelikova, 2019). Due to their lack full economic engagement, these population categories often "fall out" of the focus of social psychologists as "active subjects of life," a trend inconsistent with the traditions of the Russian psychological school, which views the individual as an active subject of labor, cognition, and communication (Rubinstein, Leontiev, Ananyev). Understanding their specific needs is therefore both theoretically and practically essential.

A key methodological innovation of this research is the move from studying declared (self-reported) needs to their manifested forms—interest as observable action. Interest, understood within the Russian psychological tradition (Rubinstein, Leontiev) as the subject's activity arising in response to cognitive imbalance, serves as a reliable indicator of genuine, enacted need. This approach enables the use of objective behavioral data from real and digital spaces, bypassing systematic biases (social desirability, cognitive distortions, intention-action gaps) inherent in traditional self-report methods.

Thus, addressing this problem has systemic importance: it contributes to the development of psychology as a science and helps shape a critically thinking, emotionally competent "subject of modernity"—one capable of consciously perceiving, analyzing, and applying psychological knowledge in a changing world. This study is guided by the hypothesis that the need for psychological knowledge among students and pensioners has a specific structure determined by age-related developmental tasks, social status, regional context, and personality and personal traits. The aim of this research is to identify the individual-personal and socio-psychological factors underlying the need for psychological knowledge among these economically inactive groups, considering regional, gender, and age-specific characteristics.

2. Methods

2.1. Sample

The study's empirical base comprised three main components:

1. *Digital Trace Data:* Over 2.2 million Yandex search queries containing the word "psychology" (or its Russian equivalent), collected from users across Russia.

2. *Social Media Content:* 1,694 unique messages from the Russian social network VKontakte, posted between 2019 and 2025.

3. *Survey Respondents:* A total of 522 respondents from three Russian regions: Moscow (n=272, with 129 economically inactive and 143 economically active), Irkutsk (n=123), and Karachayevsk (n=127). Respondents' ages ranged from 18 to 80 years. The gender distribution was balanced (259 males, 263 females). The sample included students, pensioners, and, as a "background" group, economically active individuals (mid-level specialists, workers, managers, homemakers, and the unemployed).

2.2. Instruments and Procedure

The study employed a mixed-methods design integrating quantitative and qualitative analyses of digital and survey data.

1. *Digital Behavior Analysis:*

- *Search Query Analysis:* Frequency and thematic analysis of Yandex search queries was conducted to assess the popularity and regional variation of interest in psychology.
- *Automated Content Analysis:* Texts from VKontakte were analyzed using an automated system for text extraction and analysis, which included data cleaning, tokenization, morphological analysis, and frequency analysis.
- *Manual Coding and Thematic Analysis***:** Primary immersive study of the text corpus, open coding, grouping of primary codes, and selective coding were performed to identify thematic structures and emotional tones within the discourse.

2. *Survey and Psychometric Assessment:* Respondents completed a battery of validated instruments:

- *Need for Psychological Knowledge:* Assessed via a self-report scale (1-10) and open-ended questions about topics of interest, motivations, and sources of knowledge.
- *Emotional Intelligence*: Adapted version of the MSCEIT (30 items, 5-point Likert scale) measuring understanding of one's own emotions, managing emotions, empathy, and influencing others.
- *Time Perspective:* Zimbardo Time Perspective Inventory (ZTPI), adapted by A. Syrtsova (56 items, 5 scales: Past-Negative, Past-Positive, Present-Fatalistic, Present-Hedonistic, Future).
- *Meaning in Life:* Test of Life-Sense Orientations (SJO), an adaptation of the Purpose in Life Test (20 paired statements, 5 scales).
- *Sensation Seeking:* Adapted Sensation Seeking Scale (13 paired statements).
- *Conformity:* Adapted version of A. Mehrabian's scale (15 items).

3. *Statistical Analysis*

Data were analyzed using SPSS 26.0.
Statistical methods included:

- Descriptive statistics.
- Pearson and Spearman correlation analyses to assess relationships between interest in psychology and personal characteristics.
- ANOVA with post-hoc Tukey tests to compare mean interest scores across groups (age, gender, region, economic activity status).
- Student's t-test for independent samples to analyze gender differences.
- Factor analysis (principal component analysis with Varimax rotation) to identify latent determinants within the social media discourse.
- Correlation analysis of concepts based on co-occurrence (Spearman correlation, Chi-square (χ^2) test).

3. Results

3.1. Digital Behavior Analysis: Regional and Thematic Interest

Analysis of Yandex search queries revealed a high overall interest in psychology (popularity index 101%), but with significant regional variation (Aprelikova & Kitova, 2019; Kitova et al., 2022). The highest interest was in the Far Eastern (115%), Siberian (112%), and Southern (108%) federal districts, while lower interest was observed in the Central and Northwestern (96%) and Crimean (91%) districts (Chi-square test, $p<0.05$).

Thematic analysis of queries and social media texts (N=694) identified key areas of interest: applied, personally significant domains (42.7%, e.g., personality, social psychology, relationships); academic/educational topics (15.1%); developmental and pedagogical psychology (14.2%); research and general psychology (~8-9%); methodology and practical psychology (7.3%); and clinical psychology (1.7%).

3.2. Discourse Analysis: Determinants and Polarization

Factor analysis of the social media discourse identified six key determinants: Commercialization (explaining 28.4% of variance), Politicization (21.7%), Gender Polarization (17.3%), Scientific Legitimacy (14.2%), Therapeutic Effectiveness (11.8%), and Esotericization (6.6%).

Gender analysis showed significant differences: male-authored texts were more likely to contain criticism of psychology ($r=0.62$, $p<0.01$), particularly its political use, while female-authored texts focused on relationships ($r=0.58$, $p<0.01$) and self-help ($r=0.41$, $p<0.05$).

The overall emotional tone of the discourse was mixed, with 37.4% negative, 26.4% positive, and 36.2% neutral evaluations.

3.3. Survey Results: Personality, Demographics, and Group Comparisons

Correlation analysis between personality characteristics (emotional intelligence, time perspective, meaning in life, sensation seeking, conformity) and self-reported interest in psychology revealed a weak, non-significant positive correlation ($r<0.25$, $p>0.05$), suggesting that personality traits are not predictors of interest in psychology.

Age was the strongest predictor (Table 1). Interest was highest among respondents aged 18-25 (mean 7.8-8.4) and decreased significantly with age (ANOVA, $p<0.05$), with respondents over 55 reporting lower interest (mean 4.3-5.1).

Table 1. Age-Related Features of the Need for Psychological Knowledge

No.	Age Group	Mean Need Score (1-10)	Characteristics of Responses
1.	18-25 years	7.2	High interest in self-development, relationships, emotion management
2.	26-40 years	6.8	Emphasis on professional psychology, personnel management
3.	41-60 years	5.9	Interest in family psychology, crises, health
4.	60+ years	4.7	Lower interest, focus on interpersonal relationships

Gender differences (Table 2) were qualitative rather than quantitative. Women showed a slightly higher mean interest (Student's T-test, 6.9 vs. 6.4, $p < 0.05 \div 0.001$) and focused on internal goals (self-understanding, harmonizing relationships), while men focused on external/instrumental goals (managing others, career effectiveness, social influence).

Table 2. Gender-Related Features of the Need for Psychological Knowledge

No.	Women	Men
1.	Psychology of relationships, family, love	Psychology of management, influence, manipulation
2.	Psychology of self-development and self-knowledge	Cognitive psychology, psychophysiology
3.	Psychology of stress and emotional well-being	Psychology of business, career, professional development
4.	Communication psychology	Psychology of mass behavior, conflictology

A comparative analysis of economically inactive groups (students and pensioners) revealed distinct patterns (ANOVA, $p<0.05$). Students (mean interest 7.8) prioritized self-development, career, and influence, viewing psychology as a tool for professional growth (see: Aprelikova & Kitova, 2018). Pensioners (mean interest 5.2) focused on health, family, and passing on experience, seeing psychology as a source of life wisdom. The economically active "background" group showed an intermediate interest level (mean 6.4) with a focus on professional application (Table 3).

Table 3. Comparative Analysis: Economically Active vs. Inactive Respondents

Parameter	Students (Inactive)	Working (Active)	Pensioners (Inactive)
Mean Interest Score	7.8	6.4	5.1
Top-1 Topic	Self-development (68%)	Personnel management (52%)	Family relationships (61%)
Motive "Earnings"	34%	18%	3%
Motive "Helping Others"	41%	37%	58%
Source: Internet	72%	43%	12%
Source: Professional Literature	28%	61%	9%
Image of Psychologist	"Helper", "Mentor"	"Expert", "Tool"	"Healer of the soul", "Wise person"

4. Discussion

The empirical findings yield several important insights into the nature of the need for psychological knowledge among economically inactive social groups. The core finding—a weak correlation between personality traits and interest in psychology ($r \approx .25$)—challenges a purely dispositional account of this need. Instead, it underscores its dynamic, context-dependent character as a response to life challenges. Interest in psychology appears to intensify when individuals face demands to understand themselves and others and when resources for such understanding are accessible. This aligns with the concept of age-related developmental tasks (Erikson, 1968; Levinson, 2015), whereby young adults are engaged in forming intimate relationships and professional identity, whereas older adults confront tasks of ego integrity and generativity. Importantly, longitudinal research has demonstrated that the very construct of need for cognition (NFC) remains invariant across adult life stages: its internal structure, reliability, and pattern of external correlates (with cognitive abilities, personality traits, and activity engagement) are stable from age 18 to 99 (Soubelet & Salthouse, 2017). This implies that the lower interest in psychology observed among older adults reflects genuine age-related changes in the strength of that interest rather than a shift in its meaning, thereby justifying cross-age comparisons.

At the same time, in more homogeneous samples (psychology students), stronger associations were revealed between specific personality-regulatory characteristics and interest in psychology (Bedina, 2022). Among students with high interest in psychology, medium and high levels of reflexivity (58.1% and 19.4%, respectively) and self-regulation (54.8% and 38.7%) predominate; they also exhibit a

pronounced self-orientation (58%) and endorse values of independence (87%), security (72%), and achievement (71%). This highlights the importance of fine-grained measurement of cognitive-regulatory and value variables, which may be obscured when only broad personality inventories are used.

Age emerged as the strongest predictor of interest in psychology. Young people (18–25 years) showed consistently high interest (7.2–8.4 on a 10-point scale), whereas older adults (60+ years) reported substantially lower interest (4.3–5.1). This trend is consistent with longitudinal data on the ontogenetic trajectory of need for cognition: levels of need for cognition are highest in young adulthood (up to age 24) and steadily decline after age 50 (Bruinsma & Crutzen, 2018). However, the decline among pensioners should not be interpreted as a lack of need; rather, it reflects a shift in how that need is expressed. Their interest moves from formal knowledge acquisition toward applying life experience in the domains of health, family, and interpersonal relationships, consistent with the concept of practical wisdom (Ryff, 1989). This interpretation is supported by their strong prosocial motivation ("helping others," 58%). Moreover, despite the overall decline, the structure of relations between need for cognition and other variables remains unchanged across age groups: openness to experience consistently emerges as the strongest predictor of NFC (Soubelet & Salthouse, 2017). Hence, the diminished interest among pensioners may be partially attributable to age-related declines in openness rather than solely to a decrease in cognitive motivation. According to Oiknine et al. (2021), need for cognition is negatively associated with prevention focus (an orientation toward safety). Because prevention motivation may increase with age, the decrease in interest among pensioners is likely attributable not only to reduced cognitive motivation but also to a shift in regulatory focus.

Interest in psychology among students is dynamic: according to Bedina (2022), it is highest among first- and second-year students (8.1 points) and declines to 6.7 points by the fourth and fifth years, a pattern the author links to professional burnout and disillusionment with the practical utility of the discipline. This "first-year effect" calls for deliberate efforts to sustain motivation in the later stages of training. Additional detail on the determinants of interest among youth is provided by the same study: internal factors include the desire to unite small groups (96.8%), self-education (87.1%), the need to help others (64.5%), family conflicts (61.3%), and relationship difficulties (61.3%); external factors include the romanticization of mental disorders in the media (80.6%), mentions of psychology in the mass media (74.2%), demand for psychologists (74.2%), and the rise in mental health issues among young people (77.4%). The romanticization of disorders, a factor weakly captured by macro-analysis of search queries but significant for the younger generation, deserves particular attention.

Gender differences were qualitative rather than quantitative, reflecting socially constructed roles and expectations. Women oriented toward harmonizing their inner world and interpersonal relationships (r = .58), whereas men focused on enhancing effectiveness in external activities and social influence (r = .62). This suggests that psychological knowledge is sought as a tool for navigating culturally prescribed life domains, consistent with the individualism-collectivism framework (Triandis, 1995), in which different cultural and gender roles emphasize distinct aspects of the self.

The analysis of economically inactive groups (students and pensioners) reveals a critical gap in psychological research. As noted above, these groups often fall outside psychologists' purview as "active subjects of life." Yet our data show that they are actively engaged in acquiring psychological knowledge, albeit for different reasons and through different channels. Students use psychology as a "lift" for career and personal development, whereas pensioners use it as a resource for meaning-making and prosocial connection. This heterogeneity calls for targeted educational and outreach programs. The experimental evidence on NFC malleability further suggests that such programs for pensioners should leverage engaging, cognitively stimulating activities that are perceived as enjoyable rather than as "learning," thereby fostering interest in psychological knowledge through accessible and intrinsically motivating formats (Chen et al., 2024).

A factor that promotes resistance to pseudopsychology is need for cognition: individuals with high NFC are more critical of simplistic explanations (Oiknine et al., 2021). Educational initiatives should consider not only the content of knowledge but also the regulatory focus of the audience: for individuals with a prevention focus (more common in older groups), emphasizing the reliability of scientific approaches is important; for those with a promotion focus, opportunities for self-development should be highlighted. In addition, individuals with high NFC tend to have higher cognitive abilities and greater openness to

experience, and they demonstrate a more critical stance toward oversimplified accounts (Soubelet & Salthouse, 2017). Therefore, building resilience against pseudopsychology may require not merely providing correct answers but also cultivating critical thinking and stimulating cognitive motivation, especially in at-risk groups such as older adults, whose overall interest in psychology—and likely their need for cognition—tends to be lower.

Our study did not directly assess need for cognition—a motivational trait characterized by a propensity for effortful thinking and enjoyment of complex intellectual tasks. This construct, measured with a validated instrument (Shepeleva et al., 2018), might have shown stronger associations with interest in psychological knowledge, especially among the younger subsample. A promising direction is the combination of macro-analysis of digital traces with in-depth psychometric examination of cognitive-regulatory and value predictors. Data from Bedina (2022) indicate that reflexivity, self-regulation, personality orientation, and values are significantly related to interest in psychology, whereas these relationships may be masked when only broad personality questionnaires are used. Integrating behavioral data with targeted psychological testing would enable more precise models of the need for psychological knowledge. Moreover, the present findings contribute to the ongoing discussion on the age invariance of motivational constructs. In line with Soubelet and Salthouse (2017), they suggest that age differences in interest reflect genuine developmental dynamics linked to shifts in social roles, life tasks, and possibly personality traits such as openness, rather than mere measurement artifacts.

Several limitations should be acknowledged. First, the digital trace data, though extensive, are restricted to users of specific platforms (Yandex, VKontakte) and may not fully represent the general population, particularly individuals with low digital literacy. Second, the survey component, despite its multi-regional scope, used a cross-sectional design, precluding causal inferences. Third, the use of self-report to measure interest levels is subject to social desirability bias, although this limitation is partially mitigated by the integration of behavioral digital data.

Future research should prioritize longitudinal tracking of the need for psychological knowledge across the lifespan and in response to significant life events. Developing and validating a comprehensive instrument to assess both explicit and implicit components of this need, including cognitive, emotional, and motivational dimensions, is a critical next step. Cross-cultural comparisons would further help disentangle universal psychological needs from culturally specific expressions of interest. Investigating the mechanisms underlying the 28.4% of discourse variance explained by the commercialization factor is essential for devising effective strategies to counter pseudopsychology and enhance scientific literacy in the population.

5. Conclusion

This study provides a comprehensive empirical analysis of the need for psychological knowledge among economically inactive social groups in Russia. The findings demonstrate that this need is widespread but shaped by a complex interplay of social-contextual factors, including age-related developmental tasks, gender-role expectations, regional context, and economic activity status. Critically, personality characteristics were found to be weak predictors, highlighting the primacy of situational and social factors. The distinct patterns observed among students (psychology as a tool for professional and personal ascent) and pensioners (psychology as a source of wisdom and prosocial support) underscore the necessity of targeted approaches. These groups, often marginalized in psychological research as "subjects of life," actively utilize psychological knowledge to navigate their specific life stages. The practical implications are significant: developing age-appropriate and gender-sensitive educational programs, creating trusted resources for psychological knowledge to counter pseudoscience, and integrating psychological literacy initiatives into policies for youth and older adults. By addressing these needs, psychology can fulfill its potential as a resource for individual and societal well-being across the entire lifespan.

Ethics Statement: This study was conducted in accordance with the ethical principles of the Russian Psychological Society, including informed consent, confidentiality, and voluntary participation.

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Highlights:

- *Mass interest, differentiated by context*: Psychology is very popular, but interest varies significantly by region, age, gender, and economic activity, driven by socio-contextual factors rather than stable personality traits.
- *Practical orientation dominates:* Over 40% of queries focus on applied topics (self-development, relationships, stress management). Users invest in paid services (professional development, counseling), treating psychological knowledge as a tool for solving real-life problems.
- *Age is the strongest predictor:* Interest declines sharply with age. This reflects age-related life tasks: self-definition and career building for the young, reduced relevance for older adults.
- *Gender differences are qualitative, not quantitative:* Women seek inner harmony and relational understanding; men pursue external effectiveness and influence. Images of the psychologist differ accordingly ("helper" vs. "expert/manipulator").
- *Economic activity moderates the need:* Students (high interest, career-oriented), employed (intermediate interest, professional-literature driven), and retirees (lower interest, prosocial motivation) exhibit distinct patterns requiring targeted educational approaches.
- *The image of a psychologist is person-centered, not credential-centered:* Respondents value empathy, life experience, and listening skills over formal qualifications. This creates vulnerability to non-professionals and underscores the need for public education on professional standards.
- *Personality traits matter little:* Emotional intelligence, time perspective, and other traits correlate only weakly with interest, reinforcing the primacy of life-situational and contextual drivers.
- *Implications:* To bridge the gap between mass interest and scientific literacy, educational programs must be tailored by age, gender, region, and economic activity—turning psychology from a "hobby" into a trusted, evidence-based resource.

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Потребность в психологических знаниях у экономически неактивных социальных групп

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Резюме. *Актуальность и обоснование.* В эпоху глубоких социальных трансформаций и распространения псевдонаучного психологического контента понимание реального запроса на научное психологическое знание становится важной социальной задачей. При том что интерес общества к психологии растет, он парадоксальным образом сопровождается широким принятием упрощенных, часто ненаучных представлений о психике, тогда как подлинно научное знание остается недоступным для значительной части населения. Данное противоречие требует систематического изучения потребности в психологических знаниях, понимаемой как многомерное социально-психологическое явление, интегрирующее когнитивные, мотивационные, ценностные и рефлексивные компоненты. Решение этой проблемы необходимо для разработки научно обоснованных образовательных интервенций и противодействия распространению ненаучных психологических нарративов. *Цель.* Исследование направлено на выявление индивидуальных и социально-психологических детерминант потребности в психологических знаниях у экономически неактивных социальных групп (студентов и пенсионеров) с учетом региональных, гендерных и возрастных особенностей. *Методы.* Использован смешанный дизайн, объединяющий анализ цифровых следов и данные опроса. Эмпирическую базу составили более 2,2 млн поисковых запросов в Яндекс, автоматизированный контент-анализ 1694 сообщений в социальной сети ВКонтакте (2019–2025 гг.), а также опрос 522 респондентов из трех регионов России (Карачаево-Черкесская Республика, Иркутская область, Москва). Аналитические методы включали анализ цифровых следов, корреляционный и факторный анализ, дисперсионный анализ (ANOVA) и сравнительный анализ групп. Для оценки личностных характеристик использовались валидизированные инструменты (например, адаптированные MSCEIT, ZTPI, SJO). *Результаты.* Интерес к психологическим знаниям носит массовый характер (индекс популярности 101%), однако существенно различается по регионам, достигая максимума в Дальневосточном (115%), Сибирском (112%) и Южном (108%) федеральных округах. Вопреки распространенным предположениям, личностные характеристики слабо коррелируют с уровнем интереса ($r \approx 0.25$). Наиболее сильным предиктором выступил возраст: студенты (18–25 лет) демонстрируют высокий интерес (средний балл 7,8 из 10), ориентированный на саморазвитие и карьеру, тогда как пенсионеры (60+ лет) проявляют умеренный интерес (средний балл 5,2), сосредоточенный на темах здоровья и межличностных отношений. Гендерные различия носят качественный, а не количественный характер: интерес женщин связан с внутренней гармонией и благополучием в отношениях ($r = 0.58$), тогда как интерес мужчин сконцентрирован на внешней эффективности и социальном влиянии ($r = 0.62$). Дискурс-анализ показал, что в онлайн-обсуждениях психологии доминирует коммерциализированный (28.4% дисперсии) и политизированный (21.7%) контент, что создает серьезный вызов для научной коммуникации.

Заключение. Потребность в психологических знаниях представляет собой динамичный, контекстно-зависимый феномен, формируемый преимущественно возрастными задачами развития, гендерными ориентациями и региональной доступностью образовательных ресурсов, а не устойчивыми личностными диспозициями. Выявленные различия в профилях студентов и пенсионеров указывают на необходимость разработки адресных образовательных программ и стратегий просвещения, которые преодолевают разрыв между научной психологией и общественным запросом. Полученные данные также служат предостережением: без систематических вмешательств закономерный интерес общества к психологии рискует быть захваченным коммерческими и псевдонаучными акторами.

Ключевые слова: потребность в знаниях, психологическое знание, экономически неактивные группы, студенты, пенсионеры, социальная психология, цифровое поведение, поисковые запросы, гендерные различия, возрастная психология

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Behavioral Regulation in Adolescents and Their Parents: Links to Parent–Child Relationships and Coping

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Abstract. *Relevance and problem*. Adolescence is characterized by heightened vulnerability to stress, necessitating well-developed coping mechanisms. While the family is a key institution shaping a child's coping repertoire, empirical data on the mechanisms of intergenerational transmission of coping behavior from parents to adolescents remain fragmented and inconsistent. A comprehensive approach examining the interplay between behavioral control, parent–child interaction, and coping within parent–adolescent dyads is particularly lacking. *Method*. The study involved 100 participants forming 50 parent–adolescent dyads: 50 adolescents aged 16–17 years (M = 16.42, 52% female, 48% male) and 50 parents (M = 41.64 years, 86% mothers). Data were collected online using paired family codes (Kuftyak, 2020). The instruments comprised the Behavioral Control Questionnaire (Sergienko, Vilenskaya, & Vetrova, 2023), the Parent–Child Interaction Inventory (Markovskaya, 2000), the Ways of Coping Questionnaire (Lazarus & Folkman; adapted by Kryukova, 2007), and the Psychological Well-Being Scale (Samokhvalova et al., 2025). *Results*. Parents scored significantly higher than adolescents on all behavioral control scales (Wilcoxon T = 254.5–301.5, p < .01) and on productive coping strategies (Planful Problem Solving, T = 116.0, p < .001; Positive Reappraisal, T = 215.5, p < .001). Asymmetry in parent–child interaction perceptions emerged: parents rated emotional closeness, acceptance, consistency, and relationship satisfaction higher, whereas adolescents perceived greater strictness (T = 215.0, p = .024) and less acceptance (T = 162.5, p < .001). Adolescents' perceptions of parental acceptance, agreement, and consistency were negatively associated with their psychological well-being (affective, cognitive, reflective, and value-meaning components, r = −0.43 to −0.58, p < .05). Significant positive correlations were found between parents' and adolescents' volitional control (r = 0.49, p < .001) and overall behavioral control (r = 0.45, p < .001). Coping strategies were transmitted both directly (Planful Problem Solving, r = 0.57, p < .001) and via complementarity (parental Distancing associated with reduced adolescent Accepting Responsibility, r = −0.30, p = .01; parental Confrontive Coping associated with adolescent Escape–Avoidance, r = 0.30, p = .01). The coping strategies involved in these intergenerational associations, along with Seeking Social Support, accounted for the strongest correlations with adolescent psychological well-being. *Conclusions*. Effective parent–adolescent interaction is predicated on emotional engagement, stability, mutual respect, and collaboration. Successful intergenerational transmission of coping strategies is closely linked to adolescent psychological well-being, while perceived excessive parental control and pressure diminish it. These findings hold implications for family psychological counseling and the development of psychoprophylactic programs.

Keywords: Behavioral Regulation, Behavior Control, Coping, Dyadic Coping, Parent–Child Relationships, Psychological Well-Being, Adolescents

1. Introduction

Adolescents aged 16–17 occupy a critical developmental juncture between childhood and adulthood, navigating a complex confluence of academic pressures, social expectations, identity formation, and the pervasive influence of digital environments (Tkach, Tkach, & Bochkareva, 2024; Bocharova, 2025). Within this context, the family remains a pivotal institution, fundamentally shaping a child's evolving repertoire of coping strategies (Liga et al., 2020; Pshenichnova & Skvortsov, 2024). An analytical review of coping behavior research in children and adolescents (2012–2022) underscores the significant role of parenting style and family structure (Mironova, 2023). The same review indicates that, quantitatively, the most frequently researched domains in Russian coping psychology involve coping strategies and defensive behavior in children with disabilities and adolescents exhibiting antisocial tendencies—a focus that aligns with contemporary international research (Huang,

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2026). Concurrently, the adaptive and personal resources of youth are closely linked to their chosen coping strategies, while their level of psychological well-being reciprocally influences the selection of specific coping behavior patterns (Mironova, 2023).

Two fundamental trajectories can be identified in the study of adolescent coping behavior. The first explores the direct links between coping and psychological well-being (e.g., Tsirulnikova & Schwartz, 2022). The second investigates specific contextual factors shaping adolescent coping, particularly the dynamics of parent–child relationships (e.g., Matafonova, Rerke & Krotova, 2022).

Research on parent–child relationships often centers on their role in adverse developmental outcomes, including anorexia (Telibaeva, 2022), substance abuse (Lizunova, Savintseva, 2022), conflict behavior (Lokatkova, 2022), internet addiction (Katasonova, Sapunova, 2022), cyberbullying (Borodina, 2023), aggression (Golub, Kuraeva, 2022), and self-aggression (Komarova, Rasskazova, 2024). A growing body of work, however, also highlights the positive contributions of parent–child relationships to the development of emotional intelligence (Bukharsmetova, Makushkina, 2022), adolescent resilience (Danilova, 2023), professional self-determination (Tikhanovich, 2023), and overall emotional well-being (Alexandrova, Dutchina, Bessonova, 2024). Despite this, the intrinsic factors of parent–child relationships themselves remain under-examined. For instance, Ivanova and Shapovalenko (2025) demonstrated how parental resilience and specific defensive patterns during marital conflict shape parenting styles and, consequently, the psychological well-being of preschool children. Similarly, Shkryabko et al. (2025) examined parental emotional intelligence as a determinant of optimal parent–child relationships through the quality of family interactions. Research by Kazharskaya and Korolyova (2022) shows that elevated parental anxiety and emotional distress significantly impact their relationships with adolescents. A review by Zhdanova and Filippova (2024) advocates for a holistic examination of family influence on adolescent well-being, encompassing all family members and generations. Vilenskaya (2022) investigated parent–child relationships within the framework of the interconnection between parental and child behavioral regulation, offering insights into the mechanisms through which parental behavior influences child self-regulation. This line of inquiry was extended in a study examining personality traits and behavioral control as predictors of psychological well-being in primary school children (Vilenskaya, 2025). Behavioral regulation, defined as the psychological level of control based on individual resources that enables goal-directed organization of one's psychological resources and behavior (Sergienko, Vilenskaya, 2018), is a critical component.

Our previous work established that behavioral control integrates with coping behavior and psychological defenses into a unified defense–coping continuum, providing a resource base for coping (Vetrova, 2022). However, that study examined behavioral regulation and coping exclusively in adolescents, without considering the family context. The present study advances this by adopting a comprehensive approach that examines not only the relationship between adolescent and parent coping within the context of parent–child interactions and adolescent well-being, but also incorporates a critical, yet often overlooked, factor: the individual characteristics of behavioral regulation in both adolescents and their parents.

2. Materials and Methods

2.1. Participants

The sample comprised 100 respondents, forming 50 parent–adolescent dyads. Adolescents (n = 50) were aged 16–17 years (M = 16.42), and their parents (n = 50) had a mean age of 41.64 years. This dyadic design enabled comparative and correlational analyses within family systems. Adolescents were students in Chelyabinsk schools, and the families' socioeconomic and educational status was representative of the regional average. The adolescent group was balanced by gender (52% female, 48% male), consistent with recommendations for developmental research. Mothers constituted the majority of the parent sample (86%), reflecting the broader societal trend in Russian families where mothers typically assume the primary role in providing emotional support to adolescents and participating in diagnostic procedures [27]. Family composition varied: 58% of adolescents resided in two-parent households, 28% lived with their mother (including divorced or single-parent families), 4% lived with their father, 6% lived with grandparents, and 4% in other arrangements.

2.2. Procedure

Data were collected between October and December 2025 via an online survey using the Yandex Forms platform. To ensure the validity of dyadic comparisons, each family was instructed to generate a unique "family code" (e.g., "Barsik," "Romashka"), which both the

adolescent and parent entered consistently when completing questionnaires. This method, validated in family coping research by Kuftyak (2020), preserves anonymity while enabling intra-dyadic analysis. Participation was strictly voluntary; all respondents provided informed consent detailing the study's purpose, procedures, and confidentiality guarantees. For adolescents, it was explicitly confirmed that their responses would remain confidential from their parents and would not affect their academic standing, thereby promoting response honesty.

2.3. Measures

The study employed the following instruments:

Behavioral Control Questionnaire (Sergienko, Vilenskaya, Vetrova, 2023): Assesses an individual's capacity to regulate their behavior. It comprises three scales: cognitive control (planning, goal maintenance, behavioral correction), emotional control (emotion regulation, stability under tension), and volitional control (persistence, overcoming obstacles, task completion), along with an overall behavioral control score. This instrument is validated for both adults and adolescents.

Parent–Child Interaction Inventory (PCI) (Markovskaya, 2000): Assesses perceptions of parent–child relationships from both parent and adolescent perspectives via mirror forms. The 60 items constitute 10 bipolar scales: Undemandingness–Demandingness; Gentleness–Strictness; Autonomy–Control; Emotional Distance–Closeness; Rejection–Acceptance; Lack of Cooperation–Cooperation; Disagreement–Agreement; Inconsistency–Consistency; Parental Authoritativeness; and Relationship Satisfaction.

Ways of Coping Questionnaire (WCQ) (Lazarus & Folkman; adapted by Kryukova, 2010): Assesses coping strategies in both adolescents and parents. The 50 items comprise 8 scales: Confrontive Coping, Distancing, Self-Control, Seeking Social Support, Accepting Responsibility, Escape-Avoidance, Planful Problem Solving, and Positive Reappraisal. Although the adaptation is for adults, its use with older adolescents is well-established in the literature (Shereshkova & Zaretskaya, 2025; Sipovskaya, 2025), justifying its application across all respondents.

Psychological Well-Being Scale (Samokhvalova et al., 2025): Used for multidimensional assessment of adolescent psychological well-being. The 25 items comprise 5 subscales: Affective, Cognitive, Conative, Reflective, and Value-Meaning components. This questionnaire was completed only by adolescents.

3. Results

Preliminary analyses assessed the feasibility of aggregating data across genders. Comparisons of mean scores revealed no significant gender differences for adolescents on any of the measures for behavioral control, parent–child interaction, coping strategies, or psychological well-being ($p > .05$ for all). The closest trend was observed on the Cognitive Control scale, with a tendency toward higher scores in boys ($U = 179.5$, $p = .070$). However, a statistically significant difference was found on the Autonomy–Control subscale ($U = 178.5$, $p = .036$), indicating parents reported exerting greater control over daughters. These results support treating the adolescent sample as a single, gender-undifferentiated group for primary analyses.

For parents, minor gender differences emerged. Mothers scored significantly higher on the Rejection–Acceptance subscale ($U = 76.000$; $p = .015$) and lower on Confrontive Coping ($U = 90.000$; $p = .036$) compared to fathers. No other significant differences were found ($p > .05$). Given the fragmentary nature and lack of impact on the overall analytical framework, parent data were combined into a single "parents" group.

At the next stage, adolescents and their parents were compared on the scores of the paired measures (Table 1). Parents outscored adolescents on all behavioral control scales. On the parent–child interaction measures, statistically significant differences were found on five scales: Gentleness–Strictness (adolescents perceived parental behavior as stricter), Emotional Distance–Closeness (parents rated closeness higher), Rejection–Acceptance (parents rated themselves as more accepting), Inconsistency–Consistency (parents rated themselves as more consistent), and Relationship Satisfaction (parents reported higher satisfaction). Thus, parents tend to rate their relationship as more adaptive, whereas adolescents perceive the same relationship as stricter, less accepting, and less consistent. On the coping behavior scales, parents more frequently used strategies traditionally considered productive: Self-Control, Seeking Social Support, Planful Problem Solving, and Positive Reappraisal.

Table 1. Medians of behavioral control indicators, parent-child interaction and coping behavior in adolescents and their parents, differences according to the Wilcoxon T-test

	Median, adolescent	Median, parents	T	p-level
Behavior control, integral level	84	92	278.5	**0.001**
Cognitive control	28	30.5	287.0	**0.006**
Emotional control	29	31.5	301.5	**0.009**
Volitional control	28	30.5	254.5	**0.002**
Undemandingness – Demandingness	15.0	14.0	513.0	0.442
Gentleness – Strictness	**14.0**	**13.0**	**215.0**	**0.024**
Autonomy – Control	14.8	14.8	585.0	0.784
Emotional Distance – Closeness	**15.5**	**17.0**	**301.0**	**0.015**
Rejection – Acceptance	**13.8**	**17.3**	**162.5**	**0.000**
Lack of Cooperation – Cooperation	17.0	18.0	313.0	0.083
Disagreement – Agreement	14.0	15.0	453.5	0.242
Inconsistency – Consistency	**14.0**	**16.0**	**183.0**	**0.000**
Parental Authoritativeness	15.5	16.0	491.5	0.592
Relationship Satisfaction	16.0	18.0	242.0	0.000
Confrontive Coping	63.9	61.1	351.0	0.209
Distancing	61.1	61.1	495.0	0.800
Self-Control	**14.0**	**61.9**	**1.0**	**0.000**
Seeking Social Support	**61.1**	**66.7**	**356.0**	**0.017**
Accepting Responsibility	66.7	58.3	447.0	0.754
Escape-Avoidance	62.5	62.5	504.0	0.879
Planful Problem Solving	**61.1**	**72.2**	**116.0**	**0.000**
Positive Reappraisal	**61.9**	**66.7**	**215.5**	**0.000**

Correlation analysis of the paired measures revealed that the most strongly interconnected were the parent–child interaction indicators (Table 2). Several notable trends emerged:

Asymmetry in the perception of Rejection–Acceptance: This scale served as a central hub of associations, with scores showing a negative correlation between adolescents and parents. In adolescents' perception, parental Acceptance was associated with Emotional Distance, Lack of Cooperation, Disagreement, and low Relationship Satisfaction—suggesting acceptance is experienced as pressure. From the parents' perspective, Acceptance was associated with Cooperation, Authoritativeness, and Relationship Satisfaction.

High agreement on Emotional Distance–Closeness: Ratings of Emotional Closeness showed a direct positive correlation within dyads, representing a rare point of perceptual agreement.

Authoritativeness and positive parameters: Authoritativeness as perceived by adolescents correlated strongly with Acceptance, Emotional Closeness, and Cooperation, indicating it is built on trust rather than control.

Cooperation as an integrative factor: High Cooperation ratings from the child were associated with higher parental ratings of Cooperation, Emotional Closeness, Acceptance, and Relationship Satisfaction.

Absence of significant correlations for Undemandingness–Demandingness and Autonomy–Control: These parameters may be weakly related to other aspects of interaction or perceived in isolation.

Table 2. Correlations between parent–child interaction indicators as perceived by adolescents and their parents (Spearman's correlation coefficient)

Adolescents		Parents									
		Undemandingness – Demandingness	Gentleness – Strictness	Autonomy – Control	Emotional Distance – Closeness	Rejection – Acceptance	Lack of Cooperation – Cooperation	Disagreement – Agreement	Inconsistency – Consistency	Parental Authoritativeness	Удовлетворённость отношениями
Undemandingness – Demandingness	r					-0.29					
	p					0.04					
Gentleness – Strictness	r		0.32								
	p		0.22								
Autonomy – Control	r										
	p										
Emotional Distance – Closeness	r				0.40						0.31
	p				0.00						0.03
Rejection – Acceptance	r				-0.38	-0.42	-0.36	-0.32			-0.48
	p				0.01	0.00	0.01	0.02			0.00
Lack of Cooperation – Cooperation	r				0.44	0.46	0.36				0.40
	p				0.00	0.00	0.01				0.00
Disagreement – Agreement	r					-0.34					
	p					0.02					
Inconsistency – Consistency	r					-0.29	-0.37				-0.35
	p					0.04	0.01				0.01
Parental Authoritativeness	r				0.47	0.41	0.34				0.42
	p				0.00	0.00	0.02				0.00
Relationship Satisfaction	r				0.43	0.29	0.35				0.34
	p				0.00	0.04	0.01				0.01

With respect to behavioral control, significant correlations were identified between adolescents' overall behavioral control and parents' volitional control (r = 0.32, p = 0.02), as well as between adolescents' volitional control and parents' overall behavioral control (r = 0.45, p = 0.00), cognitive control (r = 0.40, p = 0.00), and volitional control (r = 0.49, p = 0.00).

In examining the associations between coping behavior in adolescents and their parents, three significant correlations were identified: (1) parental Distancing was negatively associated with adolescent Accepting Responsibility (r = −0.30, p = 0.01); (2) parental Confrontive Coping was positively associated with adolescent Escape–Avoidance (r = 0.30, p = 0.01); (3) parental Planful Problem Solving was positively associated with the same strategy in adolescents (r = 0.57, p = 0.00).

Examining the relationships among behavioral control, parent–child relationships, coping, and adolescent psychological well-being revealed a substantially greater number of associations for adolescents' own indicators (Table 3) compared to the corresponding indicators for parents (Table 4). Adolescents' behavioral control exhibited notable associations with their psychological well-being across almost all indicators. In contrast, for parents, only overall behavioral control and volitional control showed associations with individual components of adolescent well-being.

Table 3. Relationships between scales of adolescent behavior control, parent-child interaction as perceived by adolescents, and adolescent coping behavior with psychological well-being of adolescents (Spearman's correlation coefficient)

		Components of psychological well-being				
		Affective	**Cognitive**	**Conative**	**Reflective**	**Value-Meaning**
Behavior control, integral level	r	0.50	0.57	0.48	0.56	0.33
	p	0.00	0.00	0.00	0.00	0.02
Cognitive control	r	0.47	0.38		0.29	
	p	0.00	0.01		0.04	
Emotional control	r	0.42	0.51	0.49	0.56	0.35
	p	0.00	0.00	0.00	0.00	0.01
Volitional control	r	0.34	0.52	0.44	0.44	0.35
	p	0.02	0.00	0.00	0.00	0.01
Undemandingness – Demandingness	r	-0.28				
	p	0.05				
Gentleness – Strictness	r					
	p					
Autonomy – Control	r					
	p					
Emotional Distance – Closeness	r	0.45	0.29	0.40	0.49	0.34
	p	0.00	0.04	0.00	0.00	0.02
Rejection – Acceptance	r	-0.45			-0.58	-0.38
	p	0.00			0.00	0.01
Lack of Cooperation – Cooperation	r	0.48	0.32	0.35	0.42	0.39
	p	0.00	0.03	0.01	0.00	0.01
Disagreement – Agreement	r	-0.48	-0.37		-0.34	-0.32
	p	0.00	0.03		0.00	0.01
Inconsistency – Consistency	r	-0.43	-0.42		-0.51	-0.35
	p	0.00	0.01		0.02	0.02
Parental Authoritativeness	r	0.45	0.42	0.41	0.48	0.34
	p	0.00	0.00	0.11	0.00	0.01
Relationship Satisfaction	r	0.51		0.52	0.51	0.42
	p	0.00		0.00	0.00	0.02
Confrontive Coping	r	-0.35				
	p	0.00				
Distancing	r					
	p					
Self-Control	r					
	p					
Seeking Social Support	r			0.33		
	p			0.02		
Accepting Responsibility	r					
	p					
Escape-Avoidance	r	-0.34	-0.40		-0.47	
	p	0.02	0.00		0.00	
Planful Problem Solving	r	0.42	0.39	0.28	0.33	0.46
	p	0.00	0.01	0.05	0.02	0.00

Positive Reappraisal	r					
	p					

Table 4. Relationships between the scales of parental behavior control, parent-child interaction as perceived by parents, and parental coping behavior with adolescents' psychological well-being (Spearman's correlation coefficient)

		Components of psychological well-being				
		Affective	**Cognitive**	**Conative**	**Reflective**	**Value-Meaning**
Behavior control, integral level	r		0.30	0.30	0.29	0.32
	p		0.04	0.03	0.04	0.03
Cognitive control	r					0.30
	p					0.03
Emotional control	r					
	p					
Volitional control	r	0.35		0.32	0.36	
	p	0.01		0.02	0.01	
Undemandingness – Demandingness	r					
	p					
Gentleness – Strictness	r					
	p					
Autonomy – Control	r					
	p					
Emotional Distance – Closeness	r	0.30	0.30	0.27	0.30	0.36
	p	0.03	0.03	0.06	0.03	0.01
Rejection – Acceptance	r	0.41	0.30	0.27	0.36	0.42
	p	0.00	0.03	0.06	0.01	0.00
Lack of Cooperation – Cooperation	r	0.25	0.29	0.16	0.36	0.18
	p	0.08	0.04	0.26	0.01	0.21
Disagreement – Agreement	r					
	p					
Inconsistency – Consistency	r					
	p					0.29
Parental Authoritativeness	r					0.04
	p					
Relationship Satisfaction	r				0.36	
	p				0.01	
Confrontive Coping	r				-0.30	
	p				0.03	
Distancing	r					
	p					
Self-Control	r					
	p					
Seeking Social Support	r			0.33	0.28	
	p			0.02	0.05	
Accepting Responsibility	r	-0.37				

	p	0.01				
Escape-Avoidance	r					
	p					
Planful Problem Solving	r	0.39	0.22	0.19	0.34	0.39
	p	0.01	0.12	0.18	0.02	0.00
Positive Reappraisal	r					
	p					

Regarding parent–child interaction, a greater number of associations with psychological well-being were found for adolescents' perceptions. Notably, only positive associations were identified with the conative component, whereas indicators such as Acceptance, Agreement, and Consistency showed negative associations with the affective, cognitive, reflective, and value-meaning components—the same indicators that exhibited the largest discrepancies between adolescents and parents. From the parents' perspective, their perceptions of Emotional Closeness, Acceptance, Cooperation, and Agreement were associated with all dimensions of adolescent psychological well-being.

Finally, the coping strategies most strongly associated with adolescent psychological well-being were those involved in intergenerational associations (Planful Problem Solving, Escape–Avoidance, Accepting Responsibility, Confrontive Coping), along with Seeking Social Support.

4. Discussion

The central finding of this study is the pronounced asymmetry in how parents and adolescents perceive their relationship, coupled with evidence for intergenerational transmission of both regulatory capacities and coping strategies—a transmission that significantly influences adolescent psychological well-being. These results collectively underscore that effective family functioning is not merely a matter of parental intentions but hinges on the alignment of perceptions and the successful modeling of adaptive behaviors.

The perceptual asymmetry observed is striking: parents consistently rated the parent–child relationship as more adaptive, higher in acceptance, consistency, emotional closeness, and satisfaction, while adolescents perceived the same interactions as stricter, less accepting, and less consistent. This divergence is not simply a methodological artifact but reflects a fundamental difference in perspective that has critical implications. Adolescents' perception of parental acceptance, agreement, and consistency was negatively associated with their psychological well-being, suggesting that what parents intend as supportive may be experienced by adolescents as excessive pressure or control. This finding aligns with recent work by Moiseev and Kostogorova (2023) but contrasts with earlier data (Okonechnikova, 2015), potentially indicating a generational shift in adolescent expectations toward greater autonomy and sensitivity. The paradox, that parental acceptance can be negatively associated with well-being when perceived as pressuring, highlights the importance of subjective interpretation in dyadic relationships.

In contrast, from the parents' perspective, the same behaviors were positively linked to adolescent well-being. This dual reality suggests that the *alignment* of perceptions may be as important as the behaviors themselves. Where parents and adolescents agreed on emotional closeness, the relationship was more harmonious. However, on scales where discrepancies were largest (acceptance, consistency), adolescent well-being suffered. This finding extends the work of Saporovskaya (2014) on intergenerational transmission by showing that perceptual misalignment itself may be a risk factor.

A second major theme concerns the intergenerational transmission of self-regulatory and coping capacities. Significant correlations in volitional control between parents and adolescents support the notion of a biological or genetically influenced component, consistent with the developmental model of behavioral regulation proposed by Vilenskaya and Sergienko (2001) and later longitudinal findings by Kozlova (2018) linking temperamental characteristics to well-being. Moreover, the pattern of coping transmission was strategy-specific: productive strategies (Planful Problem Solving) were directly correlated across generations, suggesting active modeling and reinforcement. Unproductive strategies (Confrontive Coping, Distancing), however, showed a different pattern—they were associated with complementary but still maladaptive strategies in adolescents (Escape–Avoidance, reduced Accepting Responsibility). This complementarity mechanism may reflect a more implicit, perhaps unintentional, transmission where parents' maladaptive

responses shape adolescents' alternative but equally unhelpful coping styles.

The contribution of these transmitted strategies to adolescent psychological well-being was substantial. Strategies involved in intergenerational associations—Planful Problem Solving, Escape–Avoidance, Accepting Responsibility, Confrontive Coping—along with Seeking Social Support, emerged as the strongest correlates of well-being. This underscores the family's role as a critical context for learning how to navigate stress, consistent with the theoretical framework of dyadic coping (Huang, 2026) and earlier work on family coping transmission (Saporovskaya, 2014). Notably, the positive role of Seeking Social Support aligns with findings by Liga et al. (2020) on parental modeling of support-seeking behaviors.

Behavioral control, particularly volitional control, played a dual role. It was both a trait transmitted across generations and a strong correlate of adolescent well-being. Adolescents' own behavioral control showed extensive associations with all dimensions of their well-being, while parental behavioral control exerted a more indirect effect, likely mediated through transmission and the quality of parent–child interaction. This pattern resonates with Shamionov and Grigoryeva's (2017) emphasis on temperamental contributions to emotional well-being and Vilenskaya's (2022) findings on the interconnection of parental and child regulation.

Limitations. Several limitations should be acknowledged. First, the cross-sectional design precludes causal inferences about the direction of effects between parent–child interaction, coping transmission, and adolescent well-being. Longitudinal studies are needed to examine how these dynamics evolve over time. Second, the sample, while balanced in adolescent gender, consisted predominantly of mothers (86%), limiting the ability to fully explore paternal influences. Third, reliance on self-report measures introduces the possibility of shared method variance and social desirability bias, although the use of dyadic family codes helped maintain anonymity. Fourth, the study was conducted in a single Russian city, which may constrain generalizability to other cultural or socioeconomic contexts. Future research should address these limitations by employing longitudinal designs, incorporating observational or multi-informant methods, and examining diverse family structures and cultural settings.

Taken together, these findings have clear practical implications. Interventions aimed at improving adolescent well-being should address perceptual discrepancies within the dyad, helping parents understand how their behaviors are subjectively experienced by their children. Furthermore, programs that support parents in modeling productive coping strategies—and in being mindful of how unproductive strategies may be inadvertently transmitted—could be particularly effective. The results also suggest that fostering volitional control in children, perhaps through scaffolding self-regulation from an early age, may have long-term benefits for their well-being.

In conclusion, this study demonstrates that the intergenerational transmission of coping and regulatory capacities is a key pathway linking parent–child interaction to adolescent psychological well-being. However, the pathway is not straightforward: it is filtered through the perceptual lens of the adolescent, meaning that even well-intentioned parenting can be experienced as pressure if not aligned with the adolescent's needs and perceptions. Future longitudinal research could examine how these dynamics evolve across adolescence and whether interventions targeting perceptual alignment and coping modeling can effectively improve outcomes.

5. Conclusion

Characteristics of perceived parent–child interaction. Asymmetry was found in the perception of parent–child relationships: parents evaluate their relationships with their children as more adaptive (higher acceptance, emotional closeness, cooperation, consistency, and satisfaction), whereas adolescents perceive the same relationships as stricter, less accepting, and less consistent. The most significant factors contributing to harmonious relationships are emotional closeness, acceptance, cooperation, consistency in parenting strategies, and parental authoritativeness grounded in trust and support rather than control. Destructive influences include emotional distance, inconsistency, lack of cooperation, and rejection.

Associations of behavioral control within the dyad. Significant correlations were found between behavioral control indicators in parents and adolescents, particularly with respect to volitional control and overall behavioral control. These findings support the notion of a substantial biological (genetic) contribution to regulatory abilities and are consistent with the concept of intergenerational transmission of self-regulation.

Intergenerational transmission of coping strategies. Three significant associations were identified between the coping behavior of

parents and adolescents. Productive strategies (particularly Planful Problem Solving) are transmitted primarily through direct pathways. Unproductive strategies (Confrontive Coping, Distancing) are associated with the use of complementary strategies by adolescents (Escape–Avoidance, reduced Accepting Responsibility). Thus, intergenerational transmission of coping occurs both through direct modeling and through mechanisms of complementarity.

Contribution of behavioral control to adolescent psychological well-being. Adolescents' behavioral control (particularly overall behavioral control and volitional control) demonstrates the most extensive and strongest associations with their psychological well-being. In parents, overall behavioral control and volitional control also show significant associations with adolescent psychological well-being, indicating an indirect influence of parental regulatory characteristics through intergenerational transmission.

Role of perceived parent–child relationships in psychological well-being. Adolescents' perceptions of parent–child relationships exhibit a greater number of associations with their psychological well-being than do parents' perceptions. Notably, parameters such as acceptance, agreement, and consistency, as perceived by adolescents, are negatively associated with several components of well-being (affective, cognitive, reflective, value-meaning), which is interpreted as perceived excessive parental pressure. Conversely, from the parents' perspective, emotional closeness, acceptance, cooperation, agreement, consistency, and relationship satisfaction are positively associated with adolescent psychological well-being. Alignment of perceptions regarding interaction strategies is important for adolescent psychological well-being; however, certain strategies are perceived by children as overly restrictive.

Contribution of coping behavior to psychological well-being. The greatest contribution to adolescent psychological well-being comes from those coping strategies involved in the associations between parent and adolescent coping behavior (Planful Problem Solving, Escape–Avoidance, Accepting Responsibility, Confrontive Coping), along with the Seeking Social Support strategy. Successful transmission of coping strategies from parents to adolescents is closely related to the psychological well-being of the latter, underscoring the importance of the family in shaping an adaptive coping repertoire.

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Highlights:

- Parents and adolescents show significant asymmetry in perceiving their relationship: parents rate interactions as more adaptive (higher acceptance, consistency, closeness, satisfaction) than their adolescents do.
- Adolescents perceive parental acceptance, agreement, and consistency as pressuring, which is negatively associated with their psychological well-being.
- Volitional control and overall behavioral control are significantly correlated between parents and adolescents, supporting intergenerational transmission of regulatory capacities.
- Productive coping strategies (e.g., Planful Problem Solving) are transmitted directly from parents to adolescents, whereas unproductive strategies (e.g., Confrontive Coping, Distancing) are transmitted through complementarity mechanisms (Escape-Avoidance, reduced Accepting Responsibility).
- Coping strategies involved in intergenerational transmission—Planful Problem Solving, Confrontive Coping, Accepting Responsibility, Escape-Avoidance—together with Seeking Social Support, make the strongest contribution to adolescent psychological well-being.
- Alignment of perceptions within the dyad is important for adolescent well-being, but perceived excessive parental control and pressure diminish it.

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Регуляция поведения у подростков и их родителей: связи с детско-родительскими отношениями и совладающим поведением

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Резюме. *Актуальность и проблема.* Подростковый возраст характеризуется высокой уязвимостью к стрессу, что требует сформированных механизмов совладающего поведения. Семья остаётся ключевым институтом, формирующим репертуар копинг-стратегий ребёнка, однако научно обоснованные данные о механизмах межпоколенной передачи копинг-поведения от родителей к подросткам остаются фрагментарными и противоречивыми. Особенно недостаточно изучен комплексный подход, учитывающий взаимосвязь контроля поведения, детско-родительского взаимодействия и совладания в диаде «родитель – подросток». *Методы.* В исследовании приняли участие 100 человек, составивших 50 диад «родитель – подросток»: 50 подростков в возрасте 16–17 лет (M = 16.42; 52% девушек, 48% юношей) и 50 родителей (M = 41.64 года; 86% матерей). Сбор данных проводился онлайн с использованием парных «семейных кодов» (Куфтяк, 2020). Применялись опросник «Контроль поведения» (Сергиенко, Виленская, Ветрова, 2023), опросник «Взаимодействие родитель – ребёнок» (Марковская, 2000), методика WCQ (Lazarus & Folkman; адаптация Крюковой, 2007) и шкала психологического благополучия личности (Самохвалова и др., 2025). *Результаты.* Родители значимо превосходили подростков по всем шкалам контроля поведения (T = 254.5–301.5, $p < 0.01$) и по продуктивным копинг-стратегиям (планирование решения проблемы: T = 116.0, $p < 0.001$; позитивная переоценка: T = 215.5, $p < 0.001$). Выявлена асимметрия восприятия детско-родительских отношений: родители оценивали эмоциональную близость, принятие, последовательность и удовлетворённость отношениями выше, тогда как подростки воспринимали родительское поведение как более строгое (T = 215.0, $p = 0.024$) и менее принимающее (T = 162.5, $p < 0{,}001$). Восприятие подростками родительского принятия, согласия и последовательности отрицательно коррелировало с их психологическим благополучием (аффективный, когнитивный, рефлексивный и ценностно-смысловой компоненты, $r = -0.43–0.58$, $p < 0{,}05$). Обнаружены значимые положительные связи между волевым контролем родителей и подростков ($r = 0.49$, $p < 0.001$) и общим контролем поведения ($r = 0.45$, $p < 0.001$). Копинг-стратегии передавались как прямым путём (планирование решения проблемы: r = 0.57, p < 0.001), так и через механизмы комплементарности (дистанцирование родителей связано со снижением принятия ответственности у подростков, $r = -0.30$, $p = 0.01$; конфронтационный копинг родителей – с бегством-избеганием у подростков, $r = 0.30$, $p = 0.01$). Стратегии, участвующие в межпоколенной передаче, а также поиск социальной поддержки вносили наибольший вклад в психологическое благополучие подростков. *Заключение.* Эффективное взаимодействие в системе «родитель – подросток» строится на эмоциональной вовлечённости, стабильности, взаимном уважении и совместной деятельности. Успешная передача стратегий совладания от родителей к подросткам тесно связана с психологическим благополучием последних, тогда как воспринимаемый чрезмерный родительский контроль и давление его снижают. Полученные результаты могут быть использованы в практике семейного психологического консультирования и при разработке программ психопрофилактики.

Ключевые слова: регуляция поведения, контроль поведения, совладающее поведение, диадический копинг, детско-родительские отношения, психологическое благополучие, подростковый возраст

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The Formation of Life Skills in the Family as a Condition for Developing Autonomy in Children with Typical and Delayed Development

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Abstract. *Background and Relevance*. The formation of life skills within the family is a key condition for the development of a child's autonomy. However, the age-related dynamics of acquiring life skills and the pedagogical conditions for their development in family upbringing remain insufficiently studied. This issue is particularly significant for parents of children with developmental delay (DD), as it directly impacts their child's autonomy and successful socialization. *Objective*. To identify the specific dynamics of parents' perceptions of essential life skills in children of different ages with typical and delayed development, as a factor in fostering child autonomy in family upbringing. *Hypothesis***.** The perceived importance of life skills among parents follows a wave-like pattern—it increases during the period of active skill acquisition and decreases after the skill is consolidated, reflecting the logic of age-related autonomy development. *Methods and Materials*. An online survey was conducted with parents of typically developing children (n = 161) and parents of children with DD (n = 465) from 34 regions of Russia. In each group, subgroups were formed based on the child's age: preschool, primary school, adolescent, and young adult. The study utilized an author-developed questionnaire listing skills across five domains of life skills. Statistical processing included frequency analysis and one-way ANOVA. *Results*. The results did not support the hypothesis of a wave-like dynamic. Instead, the importance of most skills either remained consistently high or increased by young adulthood, reflecting growing parental dissatisfaction with the child's level of autonomy relative to their expectations. No statistically significant differences were found between parents of children with DD and those of typically developing children. *Conclusions*. Parents in both groups, regardless of their child's developmental profile, do not differentiate age-specific tasks for developing life skills and do not account for the specific needs associated with DD. This underscores the need for targeted psychological and pedagogical support for families, aimed at fostering realistic expectations and providing pedagogical guidance to create conditions for the conscious development of life skills as the foundation of a child's autonomy.

Keywords: Life Skills, Family Upbringing, Children with Developmental Delay, Perceptions, Autonomy

1. Introduction

One of the primary objectives of family upbringing is to prepare children for successful adaptation in society and an independent, productive life. In contemporary pedagogical discourse, autonomy is regarded not merely as a desirable personality trait but as a critical indicator of educational quality. The development of autonomy in children and adolescents is actively discussed both in academic research (Polivanova & Bochaver, 2022; Antonova, 2021; Nisskaya & Tsyganova, 2024) and within parent communities—on forums, in online chats, and at school meetings (*Belaya Medveditsa…*, 2019). This sustained public interest underscores a strong demand for effective strategies to cultivate autonomy.

Traditionally, the development of autonomy has been examined within the framework of academic learning in pedagogical psychology. Within this perspective, parental roles were largely confined to monitoring homework completion and ensuring compliance with school rules. However, this approach overlooks other essential dimensions of family life: safety in social and natural environments, the internalization of cultural norms across diverse social roles, daily living skills, and financial and legal literacy. These domains, which are central to a child's ability to navigate everyday life, have remained largely outside the scope of family–school collaboration.

This tension has been especially pronounced in the education of children with disabilities, including those with developmental delay (DD). In response, researchers at the Institute of Special Education introduced the concept of "life competence (skills)" (Malofeev, 2019; Babkina, 2017), which was subsequently incorporated

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into Russian educational standards as a key personal educational outcome. The identified domains of life competence (skills) and their content (Babkina & Fedoseeva, 2025; Akulina, 2024) provide a framework for systematically fostering autonomy by embedding skill development in progressively complex social and material contexts.

For parents of children with DD, the challenge of preparing their child for independent living and fostering life skills is particularly acute. The specific characteristics of developmental delay in these children qualitatively shape their socialization trajectories. The importance of life skills is formally recognized in educational standards, where it is listed as a priority among personal educational outcomes (Ministry of Education..., 2014). Developing autonomy in children with DD is inherently dependent on cultivating skills within the life skills domain.

Despite the acknowledged importance of life skills in education, the pedagogical conditions that support its development within the family remain critically underexplored. Open questions persist regarding the age-related dynamics of skill acquisition in family and school settings, the psychological and pedagogical factors that facilitate this process, and the methodological resources needed to support parents and educators effectively.

Contemporary approaches to psychological and pedagogical support for children with DD emphasize that the subject of support is not the individual child but rather a collective unit comprising the child, the family, and the educator (e.g., the homeroom teacher) (Babkina, 2018). Effective teamwork in this context depends on aligned goals and coordinated actions. Accordingly, the first step toward building a coherent system for fostering life skills is to understand parents' perceptions of its content and how these perceptions evolve as children mature — from preschool through young adulthood. Without such understanding, productive family–school collaboration aimed at developing autonomy remains difficult to achieve.

Life skills, initially conceptualized as a personal educational outcome for students with disabilities in Russia by Malofeev and Kukushkina in the 1990s, builds on the competency-based approach developed in international educational psychology. In their framework, life skills are defined as the ability to appropriately and independently address everyday life tasks within current life situations to the greatest extent possible (N.V. Babkina, E.L. Goncharova, E.A. Ekzhanova, O.I. Kukushkina, N.N. Malofeev, O.S. Nikolskaya) (Malofeev, 2016). Contemporary Russian research increasingly examines life skills through the lens of the cultural-historical approach.

A distinctive feature of the framework developed at the Institute of Special Education is its grounding in practical thinking (Vygotsky, 1984; Maidansky, 2023; Babkina & Fedoseeva, 2024). Life skills are understood as a broad set of abilities to solve everyday problems, rooted in the development of practical intelligence. By attending not only to the "higher" forms of practical action but also to their intermediate and transitional forms, researchers have revealed the richness and diversity of practical skills (Fedoseeva et al., 2024). This practical intellect plays a crucial role in socialization and psychological well-being. Yet, despite its foundational importance, practical thinking often remains underdeveloped in young people, including those with high academic abilities, leading to difficulties in adulthood and impeding the realization of life plans.

The varied life experiences that children and adolescents acquire through interactions in educational settings serve as an empirical basis for appropriating modes of action and forming perceptions of social reality. In special education and psychology, five domains of life skills are traditionally distinguished (Babkina, 2017; Karabanova & Malofeev, 2019): mastering social and daily living skills; developing adequate perceptions of one's own capabilities and limitations; mastering communication skills; differentiating and understanding the world and its spatiotemporal organization; and understanding one's social environment while adopting age-appropriate values and social roles.

The development of life skills is relevant not only for children with DD but also for typically developing children. The traditional emphasis on academic achievement often leaves students with insufficient skills in navigating social norms, managing time, and regulating emotional states despite high academic performance. The strong demand from parents and educators for fostering schoolchildren's autonomy[1] (Chudinova, 2024; Polivanova & Bochaver, 2024; Antonova, 2021; Asonova, 2024) is thus not adequately met by current personal educational outcomes alone.

Most situations requiring life skills arise in everyday life, where the educational

[1]According to the Russian Science Citation Index (RSCI), 38,461 publications were found for the query "child autonomy" between 2021 and 2026 – https://elibrary.ru.

environment (school, kindergarten) offers limited opportunities for fully developing these skills. At the same time, the task of fostering life skills is highly accessible to parents, as it is embedded in daily family life. Household routines, time management, homework completion, and independent navigation of social and natural spaces are precisely the domains that populate parental concerns and instructive conversations from preschool to young adulthood. Consequently, family–school collaboration on life skills has the potential to increase parental motivation and engagement. In this context, parents become full participants in the pedagogical team, working toward shared educational goals. Whereas parents may perceive teacher requests to support academic learning as an unwelcome delegation of responsibility, they are more likely to embrace involvement in fostering life skills, which they recognize as intrinsically connected to family life.

Research on the development of autonomy in relation to parenting styles and parental involvement has primarily focused on preschool age (Kalinovskaya, 2024), as well as on primary school and early adolescence (Nisskaya & Chuvilina, 2024). Greater parental support for self-organization is associated with more developed executive functions—working memory, inhibitory control, and cognitive flexibility—in children (Distefano et al., 2018; Lehrer et al., 2017). Developing autonomy in life skills requires understanding the logic of skill acquisition, age-related complexity, individual appropriation styles, and the parent's capacity for effective mediation (Elkonin, 2023; Zaretsky & Ageeva, 2021).

In 2023–2024, our research team conducted a comparative study of how teachers and parents of children with disabilities perceive the importance of skills across life competence (skills) domains (Fedoseeva, 2024; Makarova, 2024; Babkina, 2017, 2018). Despite the clear relevance of this topic, no studies to date have examined the dynamics of parental perceptions regarding life competence skills in children of different ages with typical and developmental delay. This gap defines the relevance of the present study.

Objective is to identify the specific dynamics of parents' perceptions of essential life skills in children of different ages with typical and developmental delay, as a factor in fostering child autonomy in family upbringing.

Hypothesis: the perceived importance of life skills among parents follows a wave-like pattern: it increases during periods of active skill acquisition and declines after the skill is consolidated, thereby reflecting the logic of age-related autonomy development.

2. Materials and Methods

To identify parents' perceptions of the importance of life skills, an online survey was conducted with parents of typically developing children (n = 161) and parents of children with DD (n = 465) from 34 regions of the Russian Federation. The parent sample was divided into groups based on the child's age (see Table 1). Parents of boys accounted for 74.8% of the sample, and parents of girls for 25.2%. The questionnaire was primarily answered by mothers (93.8%), of whom 22.7% were aged 36–45 years, 47.6% were aged 29–35 years, and 21.9% were aged 46–55 years.

Table 1. Distribution of the parent sample by child age and developmental profile

Developmental Profile	**Child Age**			
	Preschool	Primary School	Adolescent	Youth
Typical Development (n=161)	51 people / 31.7%	39 people / 24.2%	62 people / 38.5%	6 people / 3.7%
DD (n=465)	35 people / 7.6%	153 people / 32.9%	254 people / 54.6%	26 people / 5.6%

A questionnaire for parents (Fedoseeva, Babkina et al., 2023) was developed to assess perceptions of the life competence (skills) domain. It comprised two parts: the first part assessed general perceptions of what the child can already do and what they should learn at the next age stage; the second part presented a list of skills within each of the five life competence domains, asking parents to select the three most significant skills for their child in each domain.

For statistical processing, frequency analysis and one-way ANOVA with Bonferroni and Tukey corrections were used.

3. Results

The results are structured by life skills domain and presented in Tables 2–6. Frequency analysis results for the significance of skills in each domain are presented as percentages according to the child's age group and developmental profile. Differences between groups and developmental profiles (typical vs. DD) were determined using ANOVA, where the dependent variable was the skill, and the developmental profile and age group were independent variables. The tables show the overall model significance and the significance of the relationship for the developmental profile (*DP*) and age (*Ag*) parameters. For readability, skills in the tables are organized by their perceived importance for parents.

For parents of children with DD and typically developing children, the most important skills were self-care, household skills, and behaviors for personal safety. Interestingly, the dynamics of these skills across age groups differed from expectations: while the importance of self-care skills decreased by young adulthood in the DD parent group (92.1% → 45.8%), it remained at approximately the same level in the typical development parent group (87.8% → 77.8%). No statistically significant differences in the frequency of selecting this skill were found between parent groups.

Table 2. Frequency of parental selection of skills within the domain "Mastering social and everyday skills used in daily life" (%)

Skills	Parents of Children with DD (N = 465)				Parents of Typically Developing Children (N = 162)			
	Preschool	Primary School	Adolescent	Youth	Preschool	Primary School	Adolescent	Youth
1. Self-care skills (F=1.47; p=0.175)	**92.1**	**82.9**	69.7	45.8	**87.8**	**78.0**	**78.5**	**77.8**
2. Household skills (**F=2.53; p=0.014; AG – p=0.009, η^2=0.004**; DP – p=0.676)	**76.3**	**78.9**	**78.1**	**83.3**	36.7	51.2	58.5	66.7
3. Skills for personal safety behavior (**F=5.65; p<0.001; AG – p=0.021, η^2=0.020; DP – p=0.015, η^2=0.012**)	**76.3**	**67.8**	**65.3**	**58.3**	61.2	65.9	49.2	66.7
4. Independently doing homework (F=1.112; p=0.353)	44.7	52.6	51.4	45.8	38.8	46.3	32.3	44.4
5. Independently getting ready for school (F=0.38; p=0.557)	34.2	42.8	40.2	45.8	20.4	29.3	30.8	22.2
6. Establishing cause-and-effect relationships when analyzing life setbacks (**F=2.91; p<0.005**; AG – p=0.067; DP – p=0.262)	34.2	41.4	53.4	58.3	22.4	29.3	26.2	22.2
7. Practical financial skills (**F=20.16; p=0.001**; **AG – p<0.001, η^2=0.177**; DP – p=0.317)	21.1	31.6	61.4	50.0	8.2	41.5	43.1	55.6
8. Independently moving around outside the home (**F=7.35; p<0.001**; **AG – p<0.001, η^2=0.066**; DP – p=0.98)	18.4	29.6	34.3	29.2	26.5	31.7	38.5	44.4
9. Taking initiative in household matters and being responsible for the consequences (**F=7.41; p<0.001; AG – p=0.021, η^2=0.020**; DP – p=0.225)	26.3	23.7	41.4	29.2	34.7	31.7	30.8	33.3
10. Choosing the most appropriate way to act in a household situation (**F=6.37; p<0.001; AG – p=0.012, η^2=0.039**; DP – p=0.605)	21.1	23.0	25.9	20.8	18.4	26.8	20.0	22.2
11. Using visual supports in the form of symbols and diagrams (**F=6.60; p<0.001; AG – p<0.001, η^2=0.076**; DP – p=0.212)	5.3	8.6	13.1	4.2	0.0	24.4	4.6	22.2

Note: significant differences are marked in bold. AG – Age Groups; DP – Developmental Profile (typical or DD).

Household skills remained at a consistent level in the DD parent group (76.3% → 83.3%) but showed an increasing trend in the typical development parent group (36.7% → 66.7%). This suggests that parents of children with DD may be consistently dissatisfied with their children's level of these skills, and this situation does not change as the child grows. For parents of typically developing children, household skills become increasingly important, as they expect

the child to become more independent and take on household responsibilities. However, this expectation might conflict with the child's developing autonomy and the dynamics of parent–child relationships. The slight variation in the significance of personal safety skills for parents likely reflects the increased importance of other skills within this domain, with no differences based on developmental profile and only minimal age-related differences (η^2=0.020). For parents of children with DD, safety is more significant due to the children's specific cognitive and regulatory challenges.

Overall, for this life competence domain, no differences were found between parent groups based on the child's developmental profile; differences were only found for the age variable. The importance of practical financial skills and independent mobility outside the home increased sharply by young adulthood, regardless of the child's developmental profile. Choosing the most appropriate way to act in a household situation was most important for parents of adolescents with DD (25.9%) and parents of typically developing primary school children (26.8%). These results clearly demonstrate a similar approach by parents to fostering household autonomy in children with different developmental profiles and the dynamics of their maturation. Using visual supports (symbols and diagrams), which require abstract thinking skills, was significant for parents of typically developing high school students (22.2%) but was not significant in the DD parent group.

Table 3. Frequency of parental selection of skills within the domain "Mastering communication skills and accepted rituals of social interaction" (%)

Skills	Parents of Children with DD (N = 465)				Parents of Typically Developing Children (N = 162)			
	Preschool	Primary School	Adolescent	Youth	Preschool	Primary School	Adolescent	Youth
1. Expressing one's point of view on events and actions, arguing for it (**F=0.60; p<0.001**; **AG – p<0.001, η^2=0.076**; DP – p=0.212)	**78.9**	**73.0**	**72.9**	**79.2**	**65.3**	**58.5**	**53.8**	**66.7**
2. Predicting possible conflict situations, mitigating them (F=1.21; p=0.292; AG – p<0.203; DP – p=0.799)	47.4	**55.3**	**59.8**	**62.5**	34.7	29.3	36.9	22.2
3. Showing flexibility in communication (F=0.223; p=0.98)	**60.5**	**50.0**	**51.4**	**50.0**	24.5	24.4	26.2	44.4
4. Having skills for positive cooperation with adults and peers **(F=3.65; p<0.001; AG – p=0.299, η^2=0.010**; DP – p=0.653)	42.1	42.8	**50.6**	41.7	**59.2**	46.3	**50.8**	**55.6**
5. Mastering cultural forms of expressing feelings, thoughts, and needs (**F=9.07; p<0.001**; **AG – p=0.013, η^2=0.027**; DP – p=0.184)	47.4	**52.6**	45.8	45.8	49.0	**65.9**	46.2	44.4
6. Listening to the interlocutor and participating in dialogue (F=1.86; p=0.069; AG – p=0.530; DP – p=0.079)	**52.6**	48.0	43.0	25.0	**59.2**	31.7	41.5	**55.6**
7. Formulating thoughts in oral and/or written speech (**F=8.05; p<0.001**; **AG – p=0.021, η^2=0.026**; **DP – p=0.030**, **η^2=0.033**)	36.8	46.7	37.8	45.8	36.7	48.8	35.4	44.4
8. Being able to critically evaluate received information (**F=8.37; p<0.001**; **AG – p<0.001, η^2=0.021**; DP – **p=0.008**)	23.7	30.3	35.9	25.0	20.4	36.6	27.7	33.3

Note: significant differences are marked in bold. AG – Age Groups; DP – Developmental Profile (typical or DD).

For the domain "Developing the ability to understand one's social environment, one's place in it, and adopt age-appropriate values and social roles" (Table 4), the most significant skills for parents of children with DD were "Expressing one's point of view…", "Predicting possible conflict situations…", and "Showing flexibility in communication." For parents of typically developing children, the most significant were "Expressing one's point of

view…", "Having skills for positive cooperation…", and "Listening to the interlocutor…". Thus, conflict avoidance skills are more relevant for parents of children with DD, while more complex cooperation and dialogue skills are prioritized by parents of typically developing children. Importantly, these skills did not lose significance as children grew older. The skills "Formulating thoughts in oral and/or written speech" and "Being able to critically evaluate received information" showed statistically significant differences across ages according to ANOVA, but percentage data suggest they are somewhat higher in primary school and young adulthood, and slightly lower in preschool and adolescence.

Table 4. Frequency of parental selection of skills within the domain "Developing the ability to understand one's social environment, one's place in it, and adopt age-appropriate values and social roles" (%)

Skills	Parents of Children with DD (N = 465)				Parents of Typically Developing Children (N = 162)			
	Preschool	Primary School	Adolescent	Youth	Preschool	Primary School	Adolescent	Youth
1. The ability to formulate, argue, and defend one's opinion (F=0.82; p=0.568)	**81.6**	**86.2**	**80.1**	**79.2**	**67.3**	48.8	**67.7**	44.4
2. The ability to regulate one's behavior and emotional reactions (**F=5.15; p<0.001**; **AG – p<0.001, η^2=0.032**; DP – p=0.355)	**84.2**	**79.6**	**68.9**	**70.8**	**67.3**	**85.4**	**73.8**	**100.0**
3. Mastering necessary social rituals (greeting, farewell, etc.) (F=1.66; p=0.115; AG – p=0.105, η^2=0.010; DP – p=0.221)	**57.9**	**57.2**	44.2	41.7	36.7	32.6	25.9	22.2
4. The ability to cooperate and participate in joint activities (**F=7.36; p<0.001**; **AG – p<0.005, η^2=0.031**; DP – p=0.056)	47.4	53.3	52.6	33.3	46.9	**61.0**	49.2	33.3
5. The ability to recognize and resist psychological manipulation (**F=20.16; p<0.001; AG – p<0.001, η^2=0.117**; DP – p=0.317)	13.5	33.6	**60.5**	50.9	14.6	35.0	46.2	50.0
6. The ability to maintain an appropriate social distance (**F=6.53; p<0.001**; **AG – p<0.001, η^2=0.069; DP – p=0.046**)	**70.0**	32.6	33.9	0.0	26.5	26.8	40.0	**77.8**

Note: significant differences are marked in bold. AG – Age Groups; DP – Developmental Profile (typical or DD).

As in other domains, no statistically significant differences were found between groups based on developmental profile. Age showed differences in the importance of the skills "The ability to cooperate and participate in joint activities," "The ability to recognize and resist psychological manipulation," and "The ability to maintain an appropriate social distance." The importance of cooperation skills decreased with the child's age, while the importance of resisting manipulation increased, likely due to the expanding social circle of the growing child and the consequent difficulty in controlling these contacts and the child's behavior. The dynamics for the skill "The ability to maintain an appropriate social distance" are interesting: in the DD parent group, its importance decreased and became insignificant by young adulthood (70.0% → 0.0%); in the typical development parent group, the reverse trend was observed (26.5% → 77.8%). For parents of typically developing children, recognizing social roles and appropriate distance is not a major issue in preschool and primary school, unlike for parents of children with DD. It appears that the ability to independently determine appropriate distance in communication does not develop spontaneously by young adulthood in children with DD.

Statistically significant differences in age dynamics were found for three skills in this domain. The skill "Connecting environmental phenomena with safety for oneself and others" (DP – p=0.003, η^2=0.014) showed a small effect for developmental profile: in the DD parent group, its importance did not change from preschool to young adulthood (94.7% → 87.5%), suggesting the child did not become more independent regarding safe behavior; in the typical development parent group, a decreasing trend was observed (53.1% → 44.4%). Mastering the basics of financial and legal literacy (F=14.21; p<0.001; AG – p<0.001, η^2=0.155; DP – p=0.931) shows a positive age dynamic: from

23.7% to 55.6%. Here, the increasing independence of adolescents and young adults likely makes this skill more important with age; simultaneously, it indicates a lack of development of this skill in family upbringing.

Table 5. Frequency of parental selection of skills within the domain "Developing the ability to understand and differentiate the world, its spatio-temporal organization" (%)

Skills	Parents of Children with DD (N = 465)				Parents of Typically Developing Children (N = 162)			
	Preschool	Primary School	Adolescent	Youth	Preschool	Primary School	Adolescent	Youth
1. Connecting environmental phenomena with safety for oneself and others (**F=3.30; p=0.002**; AG – p=0.116; **DP – p=0.003, η^2=0.014**)	**94.7**	**91.4**	**82.1**	**87.5**	**53.1**	**53.7**	44.6	44.4
2. Transferring the positive life experiences of others to oneself (F=0.93; p=0.478; AG – p=0.223; DP – p=0.845)	**55.3**	**57.2**	**54.2**	**62.5**	22.4	24.4	24.6	22.2
3. An active position in interacting with the world, adequacy of self-assessment of achievements (**F=2.47; p=0.016**; AG – p=0.079, η^2=0.016; DP – p=0.068)	**76.3**	**53.3**	**50.2**	**54.2**	**69.4**	**75.6**	**50.8**	**66.7**
4. The ability to identify a problem to solve in life situations (**F=4.87; p<0.001**; AG – p=0.136; DP – p=0.268)	44.7	**50.0**	**55.0**	**66.7**	**55.1**	48.8	**55.4**	33.3
5. Mastering the basics of financial and legal literacy (**F=14.21; p<0.001; AG – p<0.001, η^2=0.155**; DP – p=0.931)	23.7	35.5	**50.2**	**50.0**	14.3	34.1	46.2	**55.6**
6. The ability to manage one's time (**F=2.91; p<0.005**; AG – p=0.067; DP – p=0.262)	26.3	34.2	48.2	37.5	49.0	48.8	**56.9**	**55.6**
7. Choosing the most appropriate way to act in a household situation (**F=3.33; p=0.002; AG – p=0.005, η^2=0.036**; DP – p=0.415)	36.8	**52.6**	30.3	29.2	18.4	34.1	23.1	33.3

Note: significant differences are marked in bold. AG – Age Groups; DP – Developmental Profile (typical or DD).

In the final domain, the most significant skills for parents of children with DD were "Distinguishing situations where the child can act independently…", "Using the needed information…", and "Being able to organize one's free time…". For parents of typically developing children, the skill of distinguishing independent action situations was also prominent, along with "Clearly formulating a problem…" and "Making a decision in a life situation considering one's capabilities." Within this domain, the parental demand for child autonomy is particularly evident: parents of children with DD want the child to distinguish when help is needed and to use information, while parents of typically developing children prioritize accurate self-assessment and decision-making based on capabilities. The dynamic for the skill "Being able to organize one's free time…" in the typical development parent group is notable: its importance increased from 49.2% in adolescence to 77.8% in young adulthood. This may reflect the small sample size in this subgroup, but it could also indicate unrealistic parental expectations regarding their adult child's active and meaningful use of free time. The importance of the skill "Making a decision in a life situation considering one's capabilities" remained consistently high for parents, suggesting that children and adolescents do not learn to understand their capabilities with age, continuing to cause parental concern as they gain personal autonomy. Finally, the skill of aligning actions with planned results maintained a consistent level of importance across all age periods and was significantly less important in the typical development parent group. However, there was no decrease in importance by young adulthood, which would indicate the consolidation of this skill.

Table 6. Frequency of parental selection of skills within the domain "Developing adequate perceptions of one's own capabilities and essential life needs" (%)

Skills	Parents of Children with DD (N = 465)				Parents of Typically Developing Children (N = 162)			
	Preschool	Primary School	Adolescent	Youth	Preschool	Primary School	Adolescent	Youth
1. Distinguishing situations where the child can act independently from those where they should seek help (**F=2.51; p=0.015; AG – p=0.006, η^2=0.020**; DP – p=0.677)	**94.7**	**93.4**	**87.6**	**87.5**	**85.7**	**73.2**	**72.3**	**55.6**
2. Using the needed information according to a specific life situation (F=0.988; p=0.439; AG – p=608; DP – p=0.157)	**68.4**	**67.8**	**64.1**	**70.8**	32.7	34.1	32.3	44.4
3. Being able to organize one's free time (having hobbies, interests) (F=1.62; p=0.125; AG – p=0.477; DP – p=0.551)	**60.5**	**68.4**	**66.9**	**50.0**	42.9	34.1	49.2	**77.8**
4. Clearly formulating a problem, contacting someone via an accessible means, and requesting help (**F=6.26; p<0.001; AG – p<0.001, η^2= 0.056**; DP – p=0.174)	31.6	44.7	39.0	**62.5**	38.8	**63.4**	41.5	**66.7**
5. Making a decision in a life situation considering one's capabilities (**F=7.11; p<0.001; AG – p<0.001, η^2=0.020; DP – p=0.022, η^2=0.013**)	39.5	**52.0**	**50.6**	45.8	36.7	53.7	**50.8**	**55.6**
6. Understanding one's own capabilities, inclinations, interests (**F=5.63; p<0.001**; AG – p=0.448; **DP – p=0.013, η^2=0.019**)	44.7	32.2	35.1	41.7	36.7	41.5	32.3	33.3
7. Aligning one's actions with planned results (**F=4.93; p<0.001; AG – p=0.044; DP – p=0.016, η^2=0.021**)	15.8	23.7	25.1	29.2	22.4	17.1	21.5	0.0

Note: significant differences are marked in bold. AG – Age Groups; DP – Developmental Profile (typical or DD).

4. Discussion

The findings of this study do not support the hypothesis that parents' perceptions of the importance of life skills follow a wave-like dynamic that mirrors age-related mastery. Instead, for most skills, importance either remained consistently high across age groups or increased by young adulthood. This pattern suggests that parents do not view skill acquisition as a process that reaches completion; rather, their expectations appear to escalate with the child's age, reflecting a sustained—and often growing—dissatisfaction with the child's level of autonomy.

One of the most striking findings is the absence of statistically significant differences between parents of children with typical development and parents of children with DD. Across all five domains, the two groups exhibited remarkably similar patterns in which skills they prioritized and how those priorities shifted with the child's age. This convergence indicates that parents of children with DD largely do not adjust their expectations to account for the specific characteristics of their child's developmental trajectory. Several interpretations are plausible. First, parents may lack sufficient awareness of how DD affects the acquisition of life skills and the extended timelines often required for mastery. Second, the development of life skills may be so deeply embedded in daily routines that it remains largely unconscious for parents—a background process that they do not explicitly connect to their child's diagnosis. Regardless of the underlying mechanism, this finding points to a critical gap in family support: without accurate understanding of their child's developmental profile, parents may hold expectations that are either prematurely high or mismatched with the child's actual capacities, potentially leading to frustration for both parties.

The persistent prioritization of safety-related skills across all domains and age groups warrants particular attention. In the DD parent group, the importance of skills such as "connecting environmental phenomena with safety for oneself and others" remained

consistently high from preschool through young adulthood. This stability suggests that parents do not perceive their child as developing greater autonomy in managing safety, even as the child ages. Rather, safety concerns appear to sustain a pattern of continued parental vigilance and control. In contrast, among parents of typically developing children, the importance of some safety-related skills showed a slight decline, implying a gradual transfer of responsibility to the child. The enduring emphasis on safety in the DD group may reflect not only genuine risk considerations but also a broader difficulty in relinquishing control, which can constrain opportunities for the child to develop autonomy in other domains.

Several skills exhibited increasing importance in older age groups, most notably practical financial literacy, time management, and the ability to formulate a problem and request help. For both parent groups, these skills were rated as significantly more important for adolescents and young adults than for younger children. This pattern contradicts the wave-like hypothesis, which would predict heightened importance during a sensitive period followed by a decline after mastery. Instead, the data suggest that these skills are not systematically developed during earlier stages; parents' growing concern in later years likely reflects the belated recognition that their children lack competencies now considered essential for near-adult independence. In other words, the increasing importance assigned to these skills may be a reactive response to perceived deficits rather than a proactive alignment with developmental readiness.

The fact that the importance of many skills remained stable or increased over time also points to the largely unplanned nature of life development in family settings. In the absence of explicit pedagogical guidance, parents may not consciously structure opportunities for skill acquisition during sensitive periods. As a result, they may find themselves confronting the consequences of underdeveloped skills precisely when the stakes are highest—as their children approach young adulthood and face demands for independent living. This interpretation is consistent with the observed lack of age-related decline in skill importance: if skills are not consolidated in earlier stages, there is no point at which parents feel they can "stop worrying."

Taken together, these findings underscore the need for targeted psychological and pedagogical support for families. Such support should aim to help parents develop realistic, age-appropriate expectations that take into account the specific developmental characteristics of their child. It should also equip parents with concrete strategies for intentionally fostering life skills within everyday family routines, transforming what is often an implicit process into an explicit, collaborative effort. For parents of children with DD, this includes understanding the extended timelines and alternative pathways through which these skills may develop. For all parents, it involves recognizing that autonomy does not emerge spontaneously but must be systematically cultivated.

This study represents an initial step in mapping the age-related dynamics of life skills development in children with typical and delayed development. As manifestations of practical thinking (Vygotsky, 1984), life skills are profoundly shaped by individual and social conditions. Future research should examine how the development of these skills interacts with leading activities across developmental stages and how parental support strategies can be tailored to optimize outcomes. A critical next step is the development and validation of a structured system for psychological and pedagogical support that can be implemented in both family and school contexts, enabling genuine collaboration around shared goals for children's autonomy.

5. Conclusion

The hypothesis of a wave-like dynamic in the perceived importance of life skills was not supported. Instead, for most skills, importance either remained consistently high or increased by young adulthood. This reflects not so much the logic of age-related autonomy development but rather growing parental dissatisfaction with the level of skill development and anxiety associated with the child's increasing autonomy, their entry into broader social communities, and more complex social interaction situations.

Parents of children with DD do not fully account for the specific characteristics of their child's development—their expectations are often inconsistent with the individual characteristics of the child's developmental trajectory. This result may indicate insufficient parental awareness of the features of atypical development and a deficit in targeted psychological and pedagogical support aimed at fostering realistic perceptions of the zone of proximal development for a child with DD.

The results show that parents of both typically developing children and those with DD need specially organized psychological and pedagogical support for the conscious development of life skills in their children within family upbringing. Key directions for such support include: forming realistic age-related

expectations, informing parents about the logic of skill development within each life competence domain, and teaching methods for effective mediation in interactions with children and adolescents.

Limitations. Potential limitations of this study include the uneven sample distribution: parents of young adults are least represented, and the majority of respondents were mothers. The survey involved a self-selection of skills, and insufficient awareness of skill content may have led to inaccurate selections by parents.

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Highlights:

- Parents' perceptions of life skills do not follow a wave-like pattern tied to age-related mastery; most skills remain consistently important or increase in importance by young adulthood.
- No significant differences were found between parents of children with developmental delay and parents of typically developing children, indicating a lack of adjustment to the child's specific developmental needs.
- The persistent prioritization of safety skills and the increasing importance of financial literacy, time management, and help-seeking skills in older ages suggest that life skills is not systematically fostered in family upbringing.
- The findings underscore the need for targeted psychological and pedagogical support to help parents develop realistic expectations and intentionally cultivate life skills as the foundation of child autonomy.

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Формирование жизненной компетенции в семье как условие становления самостоятельности ребенка с нормативным и задержанным развитием

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Резюме. *Контекст и актуальность.* Формирование жизненной компетенции в семье выступает ключевым условием становления самостоятельности ребенка. Вместе с тем возрастная динамика овладения навыками жизненной компетенции и педагогические условия их развития в семейном воспитании остаются недостаточно изученными. Особую

значимость эта проблема приобретает для родителей детей с задержкой психического развития (ЗПР), поскольку напрямую влияет на самостоятельность и успешную социализацию их ребенка. *Цель.* Выявить особенности динамики представлений родителей о значимых навыках из сферы жизненной компетенции у детей разного возраста с нормативным и задержанным развитием как фактора становления самостоятельности ребенка в семейном воспитании. *Гипотеза.* Значимость навыков из областей жизненной компетенции в представлениях родителей имеет волнообразный характер — она повышается в период активного формирования навыка и снижается после его закрепления, отражая логику возрастного становления самостоятельности. *Методы и материалы.* Проведен онлайн-опрос родителей детей с нормативным развитием (n = 161) и родителей детей с ЗПР (n = 465) из 34 регионов России. В каждой группе выделены подгруппы родителей детей дошкольного, младшего школьного, подросткового и юношеского возраста. Использовался авторский опросник, включающий перечень навыков в пяти областях жизненной компетенции. Статистическая обработка включала частотный анализ и однофакторный дисперсионный анализ ANOVA. *Результаты.* Гипотеза о волнообразной динамике не подтвердилась. Напротив, значимость большинства навыков либо оставалась стабильно высокой, либо возрастала к юношескому возрасту, что отражает нарастающую родительскую неудовлетворенность уровнем самостоятельности ребенка по сравнению с их ожиданиями. Статистически значимых различий между родителями детей с ЗПР и родителей нормотипичных детей не выявлено. *Заключение.* Родители обеих групп независимо от варианта развития ребенка не дифференцируют возрастные задачи формирования жизненных навыков и не учитывают специфику ЗПР. Это указывает на необходимость адресного психолого-педагогического сопровождения семей, направленного на формирование реалистичных ожиданий и педагогическую поддержку создания условий осознанного развития жизненной компетенции как основы самостоятельности ребенка.

Ключевые слова: сфера жизненной компетенции, семейное воспитание, дети с задержкой психического развития, представления, самостоятельность

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BRIEF REPORT

Emotional Distance and Educational Confrontation as Correlates of Higher Emotional Intelligence in Primary School Children: A Paradox of Child–Parent Relationships

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Abstract. *Background and Objective*. The interplay between emotion and intelligence has long attracted researchers' attention because their integration facilitates adaptive functioning and effective social reasoning. This study examined the relationship between child–parent relationship parameters and emotional intelligence (EI) in primary school children (9–11 years old, N=80 mother–child dyads from Moscow). *Methods*. EI was assessed using the EmIn questionnaire (Lyusin, adapted by Semenov), projective subtests based on Lyusin's model, and a sociobiographic questionnaire. Child–parent relationships were measured with the Parent–Child Interaction Questionnaire (Markovskaya). Correlational (Pearson, Spearman) and comparative (Mann–Whitney U, chi-square) analyses were applied. *Results*. Most children showed average general EI (65% of third graders, 50% of fourth graders). Significant gender differences emerged in intrapersonal EI, emotion understanding, expressive control, and emotion regulation. Correlational analysis revealed that high EI, especially the ability to manage others' emotions, was associated with parental demandingness, emotional distance, lack of cooperation, and educational confrontation (correlations ranged from $r=-0.833$ to $r=0.641$, all $p<0.05$). Low EI was linked to low parental demandingness, emotional closeness, cooperation, and absence of confrontation. *Conclusion*. Contrary to the hypothesis that warm, close relationships foster EI, the findings suggest that a distant parental stance with educational confrontation may promote certain EI components (e.g., managing others' emotions). The results highlight the nonlinear influence of family environment on child EI and call for further research with larger samples and longitudinal designs.

Keywords: Emotional Intelligence, Primary School Age, Child–Parent Relationships

1. Introduction

The relationship between emotion and intelligence has been of longstanding interest to researchers. Although the term "emotional intelligence" (EI) appeared before the 20th century, it gained scientific currency through the work of American psychologists Mayer, Salovey, and Caruso (Mayer et al., 2004), who defined EI as a cognitive ability encompassing the perception, assimilation, understanding, and regulation of emotions.

From the mid-20th century, psychologists began to focus on the cognitive aspects of emotions and their representation as a subsystem of consciousness (e.g., Lazarus, cited in Ilyin, 2001). During this period, Bar-On (2006) introduced the emotional quotient (EQ), and EI was often studied as part of social intelligence. Towards the end of the 20th century, researchers concentrated on empirical validation through measurement instruments; Goleman's (2017) *Emotional Intelligence* presented a new perspective on the construct.

In Russian psychology, the connection between affect and intelligence was emphasized by Vygotsky (1982), who introduced the concept of "sense-based experience," by Rubinstein (2008), who argued for the inseparability of emotional and intellectual processes, and by Leontiev (2005), who showed that thinking is mediated by affective regulation. Contemporary Russian research on EI is associated with Lyusin (2004, 2006) and Andreeva (2006, 2011).

Two main models of EI exist: the ability model (Mayer et al., 2004) and mixed models (Goleman, 2009, 2017; Bar-On, 2006; Petrides & Furnham, 2000), which combine cognitive abilities with personality traits. The present study follows Lyusin's (2006) mixed approach, in which EI is seen both as a cognitive capacity and as a personal disposition. Lyusin distinguishes intrapersonal EI (understanding and regulating one's own emotions) and interpersonal EI (understanding and influencing others' emotions), drawing on Gardner's (2007) theory of multiple intelligences.

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Emotional development is shaped by the immediate environment, especially parents. Child–parent relationship characteristics, such as emotional closeness, cooperation, and educational confrontation, may determine how children recognize, understand, and regulate emotions (Averin, 2011; Andreeva, 2011). Social antecedents of EI include parental education, family income, marital relations, and parenting styles (Andreeva, 2011). Shvetsova and Markova (2025) found that higher parental education was associated with higher parental EI.

Modern Russian psychology defines EI as the ability to control one's emotional states and influence others' emotional background (Andreeva, 2021); its structure includes cognitive skills and personality traits (Nikitina, 2020; Pankratova, 2020). Primary school age is considered a sensitive period for EI development because children begin to master social interactions and voluntary mental processes (Odnolenko, 2024).

Recent studies show contradictory links between parental EI and child–parent relationships. Ivanova (2023) found that parents of older preschoolers may have high intrapersonal EI but low interpersonal EI, leading to parenting difficulties. Dobrin (2017) reported that higher EI in 7- to 8-year-olds is associated with greater parasympathetic activity, indicating optimal emotional regulation. Filippova et al. (2021) emphasized that EI develops through joint activities and enriched environments, even though the preschool period lays the foundation.

Fatikhova (2023) showed that intellectual disabilities in children affect maternal attitudes, underscoring the need to analyze specific interaction parameters (emotional closeness, cooperation, confrontation). Sitoiu and Panisoara (2023), in a large international sample, found that parental EI positively correlates with authoritative parenting and parental competence ($r=0.24$, $p<0.001$; $r=0.45$, $p<0.001$).

Empirical evidence also links EI to academic motivation (Sevostyanova, 2025), creativity (Grizun & Ignatovich, 2024), and communicativeness (Vardanyan, Vdovina, & Semenyuk, 2022) in primary school children. Traditional parenting styles (authoritarian, authoritative, permissive, uninvolved) have differential effects on emotional development, with authoritative parenting generally considered most favourable (Bakhronova, 2024). However, most studies have not examined how specific interaction parameters contribute to distinct EI components.

Therefore, the present study aimed to investigate the relationship between child–parent relationship parameters and EI in primary school children. We hypothesised that closer emotional relationships would be associated with higher EI, whereas parental distance and lack of involvement would be linked to lower EI.

2. Method

2.1. Participants

The sample comprised 40 mother–child dyads from Moscow. Children were in Grades 3 and 4, aged 9–11 years (n=40, 20 boys and 20 girls). The age group was chosen because previous research (Sevostyanova, 2025) shows that EI–motivation links are most pronounced at this stage.

2.2. Measures

1. *EmIn Questionnaire (Lyusin, adapted by Semenov).* A 46-item self-report with a 4-point scale, measuring interpersonal EI (IEI), intrapersonal EI (IAEI), emotion understanding (EU), emotion regulation (ER), and subscales: understanding others' emotions (UOE), managing others' emotions (MOE), understanding own emotions (UOE-self), managing own emotions (MOE-self), and expressive control (EC).

2. *Projective Subtests Based on Lyusin's Model (Lyusin, 2015).*

- *Subtest A* (individual): Identification of emotions from facial expressions (stimuli from Semago & Semago, 2007).
- *Subtest B*: Teacher ratings and the "Person in the Rain" drawing test (Shevchenko, 2015).
- *Subtest C* (individual interview): Six vignettes about relationships with parents, peers, and teachers, addressing both positive and negative emotions.

3. *Sociobiographic Questionnaire* – collected background data on family conditions.

4. *Parent–Child Interaction Questionnaire (Markovskaya, 2005).* Assesses parental perception of emotional closeness, cooperation, and educational confrontation.

2.3. Procedure and Statistical Analysis

Data were collected individually and in groups. SPSS Statistica was used for Pearson and Spearman correlations, contingency tables, chi-square tests, and Mann–Whitney U tests. Significance level was set at $p=0.05$.

3. Results

General EI levels are shown in Table 1. No significant differences were found between third and fourth graders (Mann–Whitney U, $p>0.05$), so they were combined for further analysis. Most children had average EI.

Table 1. Levels of General Emotional Intelligence in Third and Fourth Graders (%)

Grade	Very low	Low	Average	High	Very high
3rd (n = 20)	0	10	65	20	5
4th (n = 20)	5	10	50	20	15

Projective subtest data confirmed that most children had high or average emotion concepts and an emotional orientation toward people, consistent with Dobrin (2017). Gender differences were significant for intrapersonal EI, understanding of own emotions, expressive control, and emotion regulation ($U<137$, $p=0.05$). Girls scored lower on understanding own emotions and expressive control; boys scored higher on intrapersonal EI and emotion regulation.

In Subtest A, 80% of children described emotions through situations ("when..., then I feel..."), and 20% through facial expressions. On average, children named 5–7 emotions, with negative emotions (anger, sadness) being more frequent (26–33%) than positive ones (2 emotions, 52%).

Correlational analysis (Pearson) revealed significant relationships between child–parent relationship parameters and EI components (Table 2). Parameters that did not correlate (EC, MOE-self) are omitted.

Table 2. Pearson Correlations Between EI Components and Child–Parent Relationship Parameters

Parameter	UOE	MOE	UOE-self	IEI	IAEI	EU	ER	General EI
Undemandingness–demandingness	.318	**.493**	.246	**.482**	.269	.303	.284	.307
Emotional distance–closeness	-.379	**-.833**	-.514	**-.645**	-.471	**-.524**	**-.651**	**-.628**
Lack of cooperation–cooperation	-.323	**-.765**	-.395	**-.608**	-.373	-.416	**-.606**	**-.518**
Educational confrontation	.353	**.641**	.272	**.578**	.322	.388	**.495**	**.467**

Note. Bold coefficients are significant at $p \leq 0.05 p \leq 0.05$. UOE = understanding others' emotions, MOE = managing others' emotions, UOE-self = understanding own emotions, IEI = interpersonal EI, IAEI = intrapersonal EI, EU = emotion understanding, ER = emotion regulation.

The strongest correlation was between emotional distance–closeness and MOE ($r=-0.833$, $p<0.05$). As shown in descriptive analysis, when parents perceived emotional distance, children showed high MOE; when emotional closeness was present, children showed low MOE. Similarly, lack of cooperation was associated with high MOE, and cooperation with average MOE. Educational confrontation showed positive correlations with MOE and other EI components: higher confrontation was linked to higher EI (especially interpersonal). Thus, high EI (particularly managing others' emotions) was associated with parental demandingness, emotional distance, lack of cooperation, and educational confrontation. Low EI was associated with parental undemandingness, emotional closeness, cooperation, and absence of confrontation.

4. Discussion

Contrary to our hypothesis, the results indicate that emotional distance and educational confrontation, rather than warmth and closeness, are linked to higher levels of some EI components, especially managing others' emotions. This unexpected pattern may be explained by an adaptive mechanism: children growing up in demanding, distant environments may develop heightened sensitivity to others' emotional states as a way to navigate family stressors and maintain relational stability. In

contrast, children whose needs are fully met without challenge may have less motivation to understand and regulate emotions.

Psychophysiological data support this interpretation. Dobrin (2017) found that children with high EI show greater parasympathetic activity at rest but sympathetic activation during negative emotional recall, suggesting flexible regulation. Children in distant, confrontational families might frequently mobilize such resources, thereby strengthening interpersonal EI.

Our findings parallel the contradictory maternal attitudes reported by Fatikhova (2023) for mothers of children with intellectual disabilities, who simultaneously displayed optimal emotional contact and excessive distance. Ivanova (2023) also noted that even parents with relatively high EI can exhibit demandingness and educational uncertainty, which may have dual effects on child EI. Sitoiu and Panisoara (2023) showed that parental competence is only weakly predicted by EI ($R2=0.15$), implying that parents may not translate their own EI into supportive parenting behaviours.

Importantly, alternative developmental pathways exist. Sevostyanova (2025) demonstrated that high academic motivation is associated with better MOE and UOE, indicating that school engagement can foster interpersonal EI independently of family climate. Filippova et al. (2021) showed that structured, supportive educational interventions can also boost EI. Thus, while a demanding family environment may accidentally enhance some EI skills, it is not a recommended or necessary condition; rather, it highlights the plasticity of EI development.

However, our results should be considered preliminary and tentative. Bayanova, Shishova, and Volkova (2025) found that high child EI is associated with emotionally empathic mothers who accurately recognize their children's emotions. This discrepancy underscores the need for further research.

Additionally, contemporary factors such as cyber-dependence may moderate EI development. Gusarova and Ldokova (2024) reported that excessive internet use reduces non-verbal cue processing, potentially impairing interpersonal EI. Future studies should account for digital environment variables.

Limitations. The study has several limitations: a relatively small, geographically restricted sample (Moscow only); a correlational design that precludes causal inferences; reliance on maternal reports for relationship parameters and on self-reports for child EI (potential social desirability bias); lack of data on paternal roles, family income, parental education, or cyber-dependence; and no longitudinal follow-up. The unexpected findings require replication with larger, more diverse samples and multi-method assessments.

5. Conclusion

Contrary to expectations, higher emotional intelligence in primary school children, especially managing others' emotions, was associated with parental demandingness, emotional distance, lack of cooperation, and educational confrontation. Lower EI was linked to emotional closeness, cooperation, and low demandingness. These results suggest a non-linear effect of family environment on EI and highlight the need for further longitudinal and cross-cultural research.

Practical Implications. The findings can inform psycho-educational family support programmes. While emotional warmth remains important, moderate demandingness and boundary setting may also contribute to certain EI skills (e.g., managing others' emotions). Practitioners should help parents reflect on their emotional patterns and critically evaluate parenting information, avoiding over-simplified recommendations.

Competing interests: The authors declare no competing interests.

Ethics approval: The study protocol was approved by the Ethics Committee of Moscow Pedagogical State University.

Consent to participate: Informed consent was obtained from all participants included in the study (mothers and children). For children under the age of 18, written informed consent was obtained from the parents.

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Highlights:

- Parental distance and educational confrontation link to higher child emotional intelligence.
- Demandingness correlates positively with children's ability to manage others' emotions.
- Emotional closeness and cooperation unexpectedly associate with lower emotional intelligence.
- A distant, challenging parenting stance may inadvertently foster interpersonal EI skills.

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Эмоциональный интеллект у детей младшего школьного возраста: когда дистанцирование и конфронтация со стороны родителей важнее тепла и сотрудничества

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Резюме. *Актуальность и цель.* Взаимосвязь эмоций и интеллекта давно привлекает внимание исследователей, поскольку их интеграция способствует адаптивному функционированию и эффективному социальному взаимодействию. Цель настоящего исследования состояла в анализе взаимосвязей между параметрами детско-родительских отношений и эмоциональным интеллектом (ЭИ) у детей младшего школьного возраста (9-11 лет). *Методы.* В исследовании приняли участие младшие школьники (n=80) и их матери, проживающие в г. Москве. Диагностический комплекс включал: опросник «ЭмИн» Д.В. Люсина в адаптации В.Ю. Семенова; серия проективных субтестов, основанных на модели Д.В. Люсина; социобиографическая анкета, для получения дополнительных данных о детях и родителях; опросник «Взаимодействие родитель-ребенок» (ВВР) И.М. Марковской. Применялись корреляционный (коэффициенты Пирсона, Спирмена) и сравнительный (U-критерий Манна–Уитни, хи-квадрат) анализы. *Результаты.* Большинство детей показали средний уровень общего ЭИ (65% третьеклассников, 50% четвероклассников). Обнаружены

значимые гендерные различия по показателям внутриличностного ЭИ, понимания эмоций, контроля экспрессии и управления эмоциями. Корреляционный анализ выявил, что высокий ЭИ, особенно способность управлять чужими эмоциями, связан с требовательностью родителей, эмоциональной дистанцией, отсутствием сотрудничества и воспитательной конфронтацией (коэффициенты корреляции варьировали от r=−0.833 до r=0.641, все p <0.05). Низкий ЭИ был связан с нетребовательностью родителей при существующей эмоциональной близости родителя с ребенком и попытках сотрудничества без воспитательной конфронтации. *Заключение*. Вопреки гипотезе о том, что тёплые, близкие отношения способствуют развитию ЭИ, полученные данные позволяют предположить, что дистанцированная позиция родителей с воспитательной конфронтацией может стимулировать определённые компоненты ЭИ (например, управление чужими эмоциями). Результаты подчёркивают нелинейный характер влияния семейной среды на детский ЭИ и указывают на необходимость дальнейших исследований на расширенных выборках с использованием лонгитюдных дизайнов.
Ключевые слова: эмоциональный интеллект, младший школьный возраст, детско-родительские отношения

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Features of Subjective Experience of Loneliness in Marriage by Men and Women with Different Attachment Types

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Abstract. *Relevance and Background*. In modern society, the phenomenon of "loneliness together" is widespread: spouses experience subjective loneliness despite formally having a marital partner. This problem becomes particularly significant due to the increasing number of requests for psychological help in overcoming loneliness in marriage. Despite the rich history of attachment research, the question of how attachment type (anxious, avoidant, anxious-avoidant) is related to the subjective experience of loneliness in marriage among men and women remains insufficiently studied. *Objective*. To identify the characteristics of the subjective experience of loneliness in marriage as reported by men and women with different attachment types. *Methods*. The sample consisted of 90 people: 44 men (mean age 30.96 years) and 46 women (mean age 30.8 years) with marital duration from 5 to 10 years. The Attachment Style Questionnaire (ASQ, J. Feeney et al.), the Russell–Ferguson Loneliness Scale (UCLA Loneliness Scale), and the Marital Satisfaction Questionnaire (V.V. Stolin, T.A. Romanova, and G.P. Butenko) were used in the study. Statistical processing included nonparametric Kruskal–Wallis, Mann–Whitney, and Spearman rank correlation tests. *Results*. (1) For anxious, avoidant, and anxious-avoidant attachment types, men and women demonstrated the same level of subjective loneliness in marriage, indicating that the attachment quality factor is more influential than gender differences. (2) A negative correlation was found between subjective loneliness and marital satisfaction in respondents with anxious attachment (r_s=−0.804; $p \le 0.01$): the higher the loneliness, the lower the marital satisfaction. (3) A similar negative correlation was revealed in spouses with anxious-avoidant attachment (r_s=−0.470; $p \le 0.05$). For respondents with avoidant attachment, no statistically significant correlation was found. *Conclusion*. Attachment type is an important predictor of the experience of loneliness in marriage and its relationship with marital satisfaction. The practical application of the results lies in psychological counselling for families experiencing marital dissatisfaction: interventions should be differentiated according to the spouses' anxious, anxious-avoidant, or avoidant attachment types.

Keywords: Attachment Type, Marital Satisfaction, Subjective Feeling of Loneliness

1. Introduction

The relevance of the topic is determined by several factors. First, in the modern world, the experience of loneliness is becoming a socially significant problem (Antonova, 2023; Mikhailova, 2018; Shikina & Aidarova, 2019). Every year, more and more people subjectively identify themselves as lonely, regardless of their marital status (Velkov, 2003; Barsukova & Barsukov, 2021). Loneliness reflects dissatisfaction with the quality of social connections (Lidzhieva et al., 2019) both in the macro- and micro-society of the family.

In contemporary science, the phenomenon of loneliness is interpreted ambiguously. As Palagina, Morozova, and Novoselova (2022) point out, "in philosophical and psychological theories, the phenomenon of loneliness is explained ambiguously… in one case it is understood as destructive for the personality, in another – as an important stage of self-knowledge and self-determination" (p. 235). Theoretical understanding of loneliness in world psychology is represented by several approaches. The psychodynamic direction (S. Freud, K. Horney, F. Fromm-Reichmann) views loneliness as a consequence of narcissism, aggressiveness, and early childhood trauma (Yuldasheva, 2021, pp. 2–3). The sociological approach (D. Riesman, C. Bowman, R. Slater) emphasises the impact of social transformations and urbanisation (Yuldasheva, 2021, p. 4). The cognitive approach (E. Peplau, D. Perlman, K. Rook) defines loneliness as a result of discrepancy between desired and actual levels of social interaction (Yuldasheva, 2021, pp. 4–5). The interactionist approach (R. Weiss, V. Serma) distinguishes between social and emotional loneliness (Yuldasheva, 2021, p. 5). Existential and humanistic approaches (C. Moustakas, I. Yalom, A. Maslow, N. A. Berdyaev) consider

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loneliness as a universal condition of existence that can become a resource for self-knowledge and personal growth (Yuldasheva, 2021, pp. 7–8). The phenomenological approach (C. Rogers, W. Sadler) emphasises the discrepancy between the "real self" and the "ideal self" (Yuldasheva, 2021, p. 6). Despite their differences, these approaches converge on the idea that the experience of loneliness is closely linked to the quality of close relationships and satisfaction with social ties.

Cognitive interpretation of loneliness plays a key role. As shown in the study by Levchuk (2025), different aspects of the loneliness experience – negative feeling, denial, perception as a temporary phenomenon, fear of responsibility, spiritual and physical experience – are differently related to psychological well-being, satisfaction of basic needs, social intelligence, and hopelessness. In particular, negative perception of loneliness, fear of responsibility, and spiritual experience show the most pronounced negative correlations with components of psychological well-being (r from −0.300 to −0.608, $p<0.01$), whereas perception of loneliness as a temporary phenomenon is positively associated with autonomy and personal growth ($r=0.208$ and $r=0.276$, $p<0.01$) (Levchuk, 2025, pp. 5–6).

The scale of the problem is confirmed by empirical data: according to the Higher School of Economics and the Federal Center of Theoretical and Applied Sociology of the Russian Academy of Sciences, 43% of Russians experience loneliness (Kononov & Ishchenko, 2024, p. 49). According to a 2023 survey, 69.8% of respondents feel lonely from time to time, and 15.8% – often (Kononov & Ishchenko, 2024, p. 55). Loneliness is experienced differently: Petrash and colleagues (2021) identified four types of attitude towards loneliness – "adaptive", "dependent", "coping", and "self-sufficient" – which significantly differ in life satisfaction and psychological well-being (pp. 346–347).

Of particular interest is the phenomenon of "loneliness together" – the impoverishment of marital communication, the failure of the family to perform its psychotherapeutic function (Golod, 2008; Tsvetkova, 2018). Many spouses satisfy their communicative needs outside the family, which reduces marital satisfaction (Drobyshevsky & Romanova, 2004; Tsvetkova, 2016) and can lead to marital breakdown (Pokrovskaya & Tsvetkova, 2020). At the same time, family researchers note that the psychotherapeutic function is becoming paramount and is demanded by both men and women.

Additional data on the relationship between loneliness in a couple and attachment are presented in a pilot study by Isakova and Chebotareva (2022) on a sample of 31 respondents (30–55 years). The authors found that romantic loneliness significantly correlates with avoidance of closeness ($r=0.43$) and relationship anxiety ($r=0.44$), while family loneliness correlates with avoidance of closeness ($r=0.52$) (Isakova & Chebotareva, 2022, p. 130). Frustration, a tendency to "fuse with the partner", and ambivalence increase the feeling of loneliness in a couple, whereas the desire for closeness, acceptance, and emotional intimacy reduce it (ibid.).

Studies of married couples confirm that subjective loneliness can be experienced even in the presence of a marital partner. In the work of Troshikhina (2024) on a sample of 387 married couples with marriage duration from six months to 50 years, it was shown that the level of subjective loneliness among spouses is not high (mean values 11.45–11.95 points on a scale up to 60), but its role in marriage is ambiguous. Subjective loneliness of a husband reduces his feelings of love for his wife, whereas subjective loneliness of a husband, on the contrary, increases the wife's love for him (Troshikhina, 2024, p. 121).

The form of marital relationship is also important. Belova (2022) on a sample of 160 women showed that women in unregistered ("common-law") marriages demonstrate a higher level of subjective loneliness compared to officially married women, and also more often experience alienation in close relationships (p. 3). At the same time, women in official marriages perceive solitude as a resource rather than a threat. Vasyagina and Podyanova (2024) found that married women perceive loneliness more calmly as an opportunity for solitude and time for reflection, whereas women without partner relationships perceive the world as less benevolent, evaluate themselves more critically, and show higher levels of self-blame and internal conflicts (pp. 198–200).

Despite the rich history of attachment research initiated by Bowlby (2004), most studies still focus on the impact of attachment on the quality of motherhood and family upbringing (Tsvetkova, 2022); research on how attachment type formed in ontogenesis affects adult marital relationships is clearly insufficient. In a study by Karabanova and Shevlyakova (2022) on a sample of 89 respondents, it was shown that the highest marital satisfaction is characteristic of individuals with secure and avoidant attachment types, whereas the anxious-ambivalent type is

associated with the lowest satisfaction (p. 3). The authors explain this by the fact that in the modern family, respect for personal boundaries and autonomy of spouses is gaining importance, which corresponds to the needs of individuals with avoidant attachment.

Additional data on the relationship between loneliness and attachment were obtained by Opekina and Saporovskaya (2022). Among adults who have long been without romantic relationships, 70% of participants report experiencing loneliness, and in some cases, it is described as a total experience of "uselessness", "abandonment", "alienation" (p. 57). The key role is played by the subjective interpretation of this state, not the objective absence of relationships.

Thus, the accumulated evidence indicates a complex relationship between attachment type, the experience of loneliness in marriage, and marital satisfaction. However, the following questions remain unresolved: (1) does the level of subjective loneliness in marriage differ between men and women with the same insecure attachment type; (2) are there significant differences in loneliness levels between different insecure attachment types (anxious, avoidant, anxious-avoidant); (3) how are subjective loneliness and marital satisfaction related within each of these types. These questions acquire particular practical significance because over the past two decades, one of the most common requests in family counselling has been help in overcoming the experience of loneliness (Dmitrieva et al., 2017).

The *objective* of the study is to identify the characteristics of the subjective experience of loneliness in marriage as reported by men and women with different attachment types (anxious, avoidant, anxious-avoidant).

Research Hypotheses:

1. The level of subjective loneliness in marriage does not differ between men and women with the same insecure attachment type; the factor of attachment quality differences is more influential than the factor of gender differences.

2. There are statistically significant differences in the level of subjective loneliness between groups with different insecure attachment types: the highest level is observed in anxious and anxious-avoidant types, the lowest – in avoidant type.

3. A negative correlation exists between subjective loneliness and marital satisfaction in respondents with anxious and anxious-avoidant attachment types; no such correlation exists in respondents with avoidant attachment type.

2. Methods

To study the characteristics of the subjective experience of loneliness in marriage by men and women with different attachment types, 90 people were recruited for the study: 44 men (mean age 30.96 years) and 46 women (30.8 years) with marital duration from 5 to 10 years (mean marriage duration for men – 5.43 years, for women – 6.8 years). All survey participants were clients of various psychological counseling centers.

To achieve the set objectives, the following psychodiagnostic methods were used:

(a) the Attachment Style Questionnaire (ASQ) by J. Feeney et al.;

(b) the Russell–Ferguson Loneliness Scale (UCLA Loneliness Scale) (Raygorodsky, 1998);

(c) the Marital Satisfaction Questionnaire by V.V. Stolin, T.A. Romanova, and G.P. Butenko (Dukhnovsky, 2009), as well as mathematical data processing methods using the IBM SPSS Statistics 22 for Windows software package. The nonparametric Kruskal–Wallis test and the nonparametric Mann–Whitney U test were used.

The choice of the loneliness diagnostic method (Russell–Ferguson Loneliness Scale) is justified by the theoretical understanding of loneliness as “a mental state of the individual expressing a feeling of one’s own separateness, a subjectively perceived impossibility or unwillingness to feel reciprocal feelings, acceptance and recognition of oneself by other people” (Palagina et al., 2022, p. 237).

The choice of methods for diagnosing attachment type and marital satisfaction is consistent with current research in this area. In particular, the study by O.A. Karabanova and E.V. Shevlyakova (2022) used the same tools – the ASQ and the Marital Satisfaction Questionnaire – to examine the relationship between attachment type and marital satisfaction (Karabanova & Shevlyakova, 2022, p. 2). This ensures methodological continuity and allows us to compare our results with the data presented in that study.

3. Results

3.1. Descriptive Statistics and Grouping by Attachment Type

The sample (N = 90) was divided into three groups according to the predominant insecure attachment type measured by the ASQ (Feeney et al.). Respondents with secure attachment were not included. The most frequent type was anxious attachment (44.4% of the total sample), followed by avoidant (35.6%) and anxious-avoidant (20%).

The level of subjective loneliness (Russell–Ferguson Loneliness Scale) differed across groups. As shown in Table 1, respondents with avoidant attachment demonstrated a moderate level of loneliness (M = 21.56, SD = 3.72), whereas in the anxious (M = 31.3, SD = 11.63) and anxious-avoidant (M = 28.61, SD = 10.75) groups some individuals reached high values (maximum 54 and 48, respectively).

Table 1. Descriptive statistics of subjective loneliness by attachment type (all participants)

Attachment type	M	SD	Min	Max
Anxious	31.3	11.63	11	54
Avoidant	21.56	3.72	15	35
Anxious-avoidant	28.61	10.75	13	48

3.2. Gender Differences in the Experience of Loneliness

The Mann–Whitney U test was used to examine whether men and women differ in loneliness levels within each attachment type. No statistically significant differences were found in any group (Table 2). Thus, Hypothesis 1 was supported: the attachment quality factor is more influential than gender.

Table 2. Comparison of men and women on subjective loneliness (Mann–Whitney test, U)

Attachment type	Mean (men)	Mean (women)	U	p
Anxious	31.71	31.08	179.0	0.932
Avoidant	21.6	21.5	119.5	0.985
Anxious-avoidant	31.1	26.25	29.5	0.360

3.3. Marital Satisfaction in Different Attachment Groups

Mean marital satisfaction scores (Stolin, Romanova, Butenko questionnaire) are presented in Table 3. The lowest satisfaction was observed in the anxious-avoidant group (M = 25.83, SD = 5.03), corresponding to a "rather unfavourable" level. In the anxious group, the mean was at the borderline between unfavourable and transitional levels (M = 26.95, SD = 5.59). In the avoidant group, satisfaction was higher (M = 29.72, SD = 4.21), approaching a favourable level.

Table 3. Descriptive statistics of marital satisfaction by attachment type

Attachment type	M	SD	Min	Max
Anxious	26.95	5.59	17	39
Avoidant	29.72	4.21	20	37
Anxious-avoidant	25.83	5.03	15	32

No gender differences in marital satisfaction were found for the entire sample (U = 943.5, p = 0.579).

3.4. Correlations Between Loneliness and Marital Satisfaction (Spearman's rs)

Spearman correlation analysis revealed:

- For respondents with *anxious* attachment – a strong negative correlation (r_s=−0.804, p≤0.01): the higher the subjective loneliness, the lower the marital satisfaction.
- For respondents with *anxious-avoidant* attachment – a moderate negative correlation (r_s=−0.470, p≤0.05).
- For respondents with *avoidant* attachment – no significant correlation (r_s=−0.198, p=0.276).

Separate analyses for men and women within each attachment type yielded similar patterns.

4. Discussion

4.1. Brief Summary of Main Results

The study aimed to identify the characteristics of subjective loneliness in marriage among men and women with different insecure attachment types. The main results showed: (1) no gender differences in loneliness levels for the same attachment type; (2) the highest loneliness levels in anxious and anxious-avoidant types, the lowest in avoidant type; (3) strong negative correlations between loneliness and marital satisfaction for anxious (r_s=−0.804) and anxious-avoidant (r_s=−0.470) types, and no significant correlation for avoidant type.

4.2. Interpretation in the Context of Existing Literature

Gender differences. The absence of statistically significant differences between men and women in subjective loneliness within each attachment type (see Table 2) indicates that the factor of attachment quality differences is more influential than gender. This result agrees with Karabanova and Shevlyakova (2022), who showed that although women use avoidant behavioural patterns less frequently and feel more comfortable with closeness, the overall level of loneliness for the same attachment type does not differ. This also confirms Bowlby's (2004) theoretical position that attachment is a stable characteristic formed in early ontogenesis and determines patterns of close relationships in adulthood regardless of gender.

Differences between insecure attachment types. Statistically significant differences in loneliness levels between groups ($H=12.393$; $p \leq 0.01$), with the highest values in anxious and anxious-avoidant types, are explained by the specific psychological mechanisms of each type. As noted by Palagina, Morozova, and Novoselova (2022, p. 236), loneliness is often "accompanied by other mental expressions, such as anxiety, boredom, emptiness, and depression." Individuals with anxious attachment have a high need for approval and preoccupation with relationships combined with self-doubt, so even a slight deficit in intimacy triggers acute loneliness. In anxious-avoidant individuals, as Isakova and Chebotareva (2022, p. 130) indicate, there is an internal conflict: on one hand, preoccupation with relationships and need for closeness; on the other, discomfort in relationships and their secondary importance. This creates a basis for high loneliness. For avoidant type, in contrast, self-confidence and distrust of others, discomfort with closeness, and autonomy are characteristic, so loneliness is experienced as habitual and even comfortable.

Relationship between loneliness and marital satisfaction. The negative correlation found in respondents with anxious attachment ($r_s=-0.804$; $p \leq 0.01$) can be interpreted as follows: individuals with this attachment type feel a need for close emotional intimacy and a desire to "fuse" with the partner while being highly self-doubting. Relationships in which they subjectively feel loneliness are utterly unsatisfactory, whereas a marriage they are satisfied with reduces anxiety and increases self-confidence. Similarly, the negative correlation in spouses with anxious-avoidant attachment ($r_s=-0.470$; $p \leq 0.05$) shows that, despite suspiciousness and distrust, the desire for closeness "wins" in marital relationships. If relationships do not provide closeness and cause a strong experience of loneliness, marital satisfaction decreases; if they reduce loneliness by providing feelings of closeness, cohesion, and inclusion, satisfaction increases. High marital satisfaction can be the "medicine" that helps a person with anxious-avoidant attachment overcome suspiciousness, distrust, and the tendency to excessive control.

The absence of a significant correlation in spouses with avoidant attachment is explained by the behavioural model in which the partner fears closeness, tries to maintain autonomy, and establishes distance. The feeling of loneliness is habitual and comfortable, so increasing marital satisfaction does not change the avoidant stance.

4.3. Comparison with Other Studies

Our results on high levels of subjective loneliness in anxious and anxious-avoidant types are complemented by Levchuk's (2025) findings on the key role of cognitive interpretation of loneliness. Negative perception of loneliness, fear of responsibility, and spiritual experience show the most pronounced negative correlations with components of psychological well-being (r from -0.300 to -0.608, $p<0.01$), whereas perception of loneliness as a temporary phenomenon is positively associated with autonomy and personal growth ($r=0.208$ and 0.276, ely, $p<0.01$) (Levchuk, 2025, pp. 5–6). For individuals with anxious attachment, negative interpretation of loneliness likely serves as the key mechanism mediating the reduction in marital satisfaction. Of particular interest are data on the spiritual perception of loneliness: it was associated with worsening psychological state (r from -0.299 to -0.608, $p<0.01$) and positively with hopelessness ($r=0.486$, $p<0.01$). For spouses with anxious-avoidant attachment, who are prone to suspiciousness and fixation on relationships, unreflected spiritual experience of loneliness may exacerbate maladaptive states and reduce marital satisfaction.

Opekina and Saporovskaya (2022) found that among adults who have long been without romantic relationships, the most pronounced emotional states are loneliness (70%), frustration (80%), sadness (57.7%), and anxiety (48%). Respondents prone to negative self-attitude and perceiving the absence of relationships as "loneliness" more often report that without romantic relationships "their life has no meaning," "they are needed by no one," "no one will support or care for them" (Opekina & Saporovskaya, 2022, p. 58). These findings resonate with our results: for spouses with

anxious attachment, who are also prone to negative interpretation of their situation, the experience of loneliness in marriage is most acute and linked to low marital satisfaction. The similarity is that in both the absence of relationships and their presence, the key factor is not so much objective status as subjective evaluation of one's involvement in close relationships and the self-image within those relationships.

Petrash and colleagues (2021) showed that the effectiveness of coping with loneliness depends on the type of attitude toward it. For representatives of the "coping" type, characterised by high loneliness experience, the most resourceful strategies were planning problem-solving and taking responsibility, whereas distancing and escape-avoidance intensified negative experiences (Petrash et al., 2021, pp. 349–350). This suggests that the negative relationship between loneliness and marital satisfaction in individuals with anxious and anxious-avoidant attachment may be mediated by the choice of coping strategies.

Belova (2022) found that women in "common-law" marriages show elevated scores on the "Alienation" scale ($U=289$, $p<0.05$), reflecting dissatisfaction with emotional ties with close others. The author links this to a mismatch between ideal representations of close relationships and their actual quality, which is particularly relevant for spouses with anxious and anxious-avoidant attachment, who have a high need for reliability and closeness. Vasyagina and Podyanova (2024) added that married women have a higher level of psychological well-being, manifested in greater life engagement, ability to find interesting moments in daily activities, and lower scores on self-blame and internal conflict (pp. 200–201). This indicates that psychological help for women experiencing loneliness in marriage should consider not only their attachment type but also the broader context – presence of children, form of marital relationship, and overall psychological well-being.

Karabanova and Shevlyakova (2022) confirmed that the anxious-ambivalent attachment type is associated with the lowest marital satisfaction ($r=-0.589$, $p<0.001$) and that marital satisfaction increases with greater significance of close relationships ($r=-0.234$, $p<0.05$) and reduced fixation on relationships ($r=-0.620$, $p<0.001$). These data complement our study, demonstrating that not only attachment type but also gender characteristics can influence relationship perception and loneliness experience in marriage. Furthermore, Troshikhina (2024) found that in couples expressing a desire to divorce, feelings of love and affection are significantly weaker, men's relationship satisfaction is lower, and the psychological well-being of both spouses is reduced (for women – lack of competence, for men – difficulties in setting life goals, for both – low self-acceptance) (p. 122). This indicates that work with married couples experiencing loneliness in marriage should include not only relationship correction but also support for each spouse's personal development.

4.4. Theoretical and Practical Implications

The results contribute to understanding the mechanisms linking attachment type to marital well-being. They show that subjective loneliness acts as a key mediator in this relationship, especially for anxious and anxious-avoidant types. Moreover, the data confirm that attachment quality is a stronger predictor of loneliness than gender, consistent with evolutionary attachment theory (Bowlby, 2004).

There are many psychological tools for spouses to increase marital satisfaction. This may include work (self-directed or with a counsellor) to improve the quality of marital communication by developing reflection and empathy (rational, emotional, intuitive channels) in each spouse (Zotova et al., 2015). It may also include work to improve joint leisure and more acceptable distribution of responsibilities, and to develop constructive conflict resolution strategies (Mikhailovskaya, 2018; Kirsanova, 2022). Given Levchuk's (2025) findings on the key role of cognitive interpretation of loneliness, psychological help for spouses experiencing loneliness in marriage should aim not only at forming adaptive coping strategies but also at changing the nature of interpretation of the loneliness state itself. In work with spouses, especially those with anxious and anxious-avoidant attachment, it is advisable to use cognitive restructuring techniques aimed at reinterpreting loneliness as a temporary and surmountable state, as well as reducing the fear of responsibility for the quality of the relationship.

4.5. Practical Recommendations

The results point to the role of marital satisfaction as a characteristic of the marital union in overcoming the discomfort experienced in relationships by people with anxious and anxious-avoidant attachment types. Given Levchuk's (2025) findings on the key role of cognitive interpretation of loneliness, psychological help for spouses experiencing

loneliness in marriage should aim not only at forming adaptive coping strategies but also at changing the nature of interpretation of the loneliness state itself. In work with spouses, especially those with anxious and anxious-avoidant attachment, it is advisable to use cognitive restructuring techniques aimed at reinterpreting loneliness as a temporary and surmountable state, as well as reducing the fear of responsibility for the quality of the relationship. For spouses with avoidant attachment, it is important to respect their autonomy and gradually build the value of close relationships without forcing intimacy.

4.6. Limitations

The results have several limitations that should be considered when interpreting and generalising the conclusions. First, the sample included only spouses who sought psychological help, which may have influenced the intensity of loneliness and marital satisfaction; these indicators may differ in the general population. Second, the study had a correlational design, which does not allow causal inferences about the relationships between attachment type, loneliness, and marital satisfaction. Third, the sample was limited in age (30–31 years) and marriage duration (5–10 years), and did not include respondents with secure attachment, narrowing the possibilities for comparison. Finally, only self-report methods were used, which may be subject to social desirability and subjective bias.

4.7.Future Research Directions

Longitudinal studies are needed to examine the dynamics of marital loneliness, to include secure attachment groups, and to investigate mediators (e.g., coping strategies, communication quality, presence of children) in the relationship between attachment, loneliness, and marital satisfaction. Additionally, it would be useful to compare clinical and non-clinical samples and to expand the age range and marriage duration.

5. Conclusion

Based on statistical and mathematical analysis of the empirical data obtained, it has been demonstrated that:

1. *The level of subjective loneliness in marriage does not differ between men and women* – for insecure attachment types, both men and women show the same level of subjective loneliness. The factor of differences in attachment quality is more influential than the factor of gender differences.

2. The most frequent attachment type for both men and women is *anxious* attachment (44.4% of the total sample). The distinguishing feature of such individuals is high self-doubt, need for approval, and preoccupation with relationships. The second most frequent is *avoidant* attachment (35.6% of the sample): its distinguishing feature is a predominance of self-confidence and distrust of others, heightened discomfort with relationships, and the secondary importance of the relationship sphere. The least frequent is *anxious-avoidant* attachment (20% of the sample): these individuals are characterised by multidirectionality in relationships due to opposing tendencies – on one hand, preoccupation with relationships with a dysfunctional need for closeness and approval, and on the other, discomfort in relationships and their secondary importance.

3. Statistically significant differences in subjective loneliness were found among spouses with anxious, anxious-avoidant, and avoidant attachment. The subjective loneliness score is statistically higher in the anxious attachment group and lower in the avoidant attachment group. This is explained by the role, content, and significance of interpersonal relationships in different attachment disturbances, as well as by the psychological mechanisms determining attachment and relationship characteristics in different groups. As confirmed by Isakova and Chebotareva (2022), the closest relationship between loneliness in a couple and attachment is found precisely for romantic and family loneliness, with avoidance of closeness being more strongly associated with family loneliness and relationship anxiety with romantic loneliness.

4. The following correlations between subjective loneliness and marital satisfaction were found:

- A negative correlation for respondents with **anxious** attachment: the higher the subjective loneliness of spouses with anxious attachment, the lower their marital satisfaction.
- A negative correlation for spouses with **anxious-avoidant** attachment: the higher the subjective loneliness, the lower the marital satisfaction.
- No statistically significant correlation was found for spouses with *avoidant* attachment, which may be explained by the autonomy and distance in relationships maintained over years of marriage, substituting the emotional context of close trusting relationships with other aspects of family functions.

5. This study, complemented by data on the wide prevalence of subjective loneliness in Russian society (43% of Russians experience loneliness, and 69.8% – from time to time; Kononov & Ishchenko, 2024, pp. 49, 55), shows that in marriage this experience acquires particular significance. In spouses with insecure attachment types, loneliness does not become a resource for personal growth but manifests as a destructive state accompanied by a predominance of negative emotions (sadness, fear, anxiety) and the use of avoidant coping strategies, leading to reduced marital satisfaction.

6. The results confirm the view of loneliness in close interpersonal relationships as a predominantly destructive experience, consistent with the position of most researchers who consider loneliness "as a negatively influencing emotional experience that has a detrimental effect on the personality" (Palagina et al., 2022, p. 235). At the same time, the degree of negative impact of loneliness on marital satisfaction varies significantly depending on the spouses' attachment type.

Conflict of Interest: The author declares no conflict of interest.

Author Contributions: The author takes full responsibility for the integrity and accuracy of the data presented in this study, has reviewed and approved the final version, and agrees to be accountable for all aspects of the work.

Ethical Approval: This study was conducted in accordance with the Declaration of Helsinki. Ethical approval was obtained from the Ethics Committee of Moscow Pedagogical State University). Informed consent was obtained from all individual participants.

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Highlights:

- Subjective loneliness in marriage is significantly higher in anxious and anxious-avoidant attachment types compared to the avoidant type.
- Men and women with the same insecure attachment type do not differ in their level of marital loneliness.
- Strong negative correlations between loneliness and marital satisfaction were found for anxious and anxious-avoidant attachment types.
- No significant correlation between loneliness and marital satisfaction was found for the avoidant attachment type.
- Attachment type is a more important predictor of marital loneliness than gender.

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Особенности субъективного переживания одиночества в браке мужчинами и женщинами с разным типом привязанности

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Резюме. *Актуальность и обоснование.* В современном обществе распространён феномен «одиночества вдвоём», когда супруги переживают субъективное одиночество, несмотря на формальное наличие брачного партнёра. Особую значимость эта проблема приобретает в связи с ростом запросов на психологическую помощь в преодолении одиночества в браке. Несмотря на богатую историю изучения привязанности, остаётся недостаточно исследованным вопрос о том, как тип привязанности (тревожный, избегающий, тревожно-избегающий) связан с субъективным переживанием одиночества в браке у мужчин и женщин. *Цель.* Выявить особенности субъективного переживания одиночества в браке мужчинами и женщинами с разным типом привязанности. *Методы.* Выборку составили 90 человек – 44 мужчины (средний возраст 30.96 года) и 46 женщин (30.8 года) со стажем семейной жизни от 5 до 10 лет. Использованы три психодиагностические методики: опросник типа привязанности ASQ (J. Feeney et al.), шкала одиночества Д. Рассела и М. Фергюсона (UCLA Loneliness Scale), опросник удовлетворённости браком В.В. Столина, Т.А. Романовой, Г.П. Бутенко. Статистическая обработка включала непараметрические критерии Краскела–Уоллиса, Манна–Уитни и ранговую корреляцию Спирмена. *Результаты.* (1) При тревожном, избегающем и тревожно-избегающем типах привязанности мужчины и женщины демонстрируют одинаковый уровень субъективного переживания одиночества в браке, что указывает на бóльшую значимость фактора привязанности по сравнению с половыми различиями. (2) Обнаружена отрицательная корреляция между субъективным одиночеством и удовлетворённостью браком у респондентов с тревожным типом привязанности ($r_s = -0.804$, $p \le 0.01$): чем выше одиночество, тем ниже удовлетворённость браком. (3) Аналогичная отрицательная связь выявлена у супругов с тревожно-избегающим типом привязанности ($r_s = -0.470$, $p \le 0.05$). Для респондентов с избегающим типом привязанности статистически значимой корреляции не установлено. *Заключение.* Тип привязанности выступает важным предиктором переживания одиночества в браке и его связи с удовлетворённостью супружескими отношениями. Практическое применение результатов возможно в психологическом консультировании семей, испытывающих неудовлетворённость браком: работа должна быть дифференцированной с учётом тревожного, тревожно-избегающего или избегающего типа привязанности супругов.

Ключевые слова: тип привязанности, удовлетворенность браком, субъективное ощущение одиночества.

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Sources of Subjective Happiness in Spouses at Different Stages of Family Life

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Abstract: *Relevance and problem*. In the context of rapid social transformation, the family remains a key determinant of individual psychological well-being. Nevertheless, the ways in which the sources of marital happiness vary across the family life cycle remain underexplored. Clarifying these differences is crucial for designing stage-specific psychological interventions that effectively support couples as their relationships evolve. *Objective*. This study aimed to investigate the psychological characteristics of sources of subjective happiness in spouses at different stages of family life. *Methods*. The sample comprised 400 individuals from 200 married couples, divided into two groups: young couples (n = 100, marital duration up to 5 years) and mature couples (n = 100, marital duration over 20 years). Data were collected using the Oxford Happiness Inventory (Hills & Argyle, 2002), the Marital Satisfaction Questionnaire (Stolin, Romanova, & Butenko, 1984), and an author-developed survey on perceptions of marital happiness. Quantitative analysis employed the Mann–Whitney U test and Spearman's rank correlation. *Results*. Significant differences were found between groups. Young spouses reported higher marital satisfaction ($U = 1222.5$, $p < 0.01$), whereas mature spouses reported higher subjective happiness ($U = 1282.5$, $p < 0.01$). Correlation analysis revealed a weak positive association between marital satisfaction and subjective happiness in both groups ($\rho = 0.15$ - 0.18), indicating that marital quality is only one of several factors contributing to overall happiness. Qualitative differences in sources of happiness emerged: young spouses identified shared leisure time, co-creation of family space, and intensive togetherness as key sources; mature spouses emphasized established trust, mutual understanding, and personal autonomy within the marriage. *Conclusion*. The findings reveal a dynamic shift in the sources of subjective happiness across the family life cycle: from romantic togetherness in young couples to autonomy grounded in deep trust in mature couples. The weak correlation between marital satisfaction and subjective happiness suggests that global happiness is influenced by a broader set of personal, professional, and social factors beyond marital quality. These results underscore the need for stage-specific psychological support for couples and highlight the importance of longitudinal designs in future research.

Keywords: Spouses, Subjective Happiness, Marital Satisfaction, Stages of Family Life, Marriage, Family, Psychological Well-Being

1. Introduction

In a rapidly changing society marked by political, economic, and technological transformations, a happy family life and the experience of psychological well-being within marital relationships provide a crucial sense of stability and meaning for many individuals. Global shifts and digitalization profoundly affect the institution of marriage, giving rise to new psychological challenges for couples. Consequently, research on marital well-being and the factors underlying spouses' subjective happiness has acquired renewed relevance. As Tolstoy famously observed, all happy families are alike; each unhappy family is unhappy in its own way. Yet, we contend that every couple's relationship is unique. As marital relationships develop, they pass through distinct stages, each offering new experiences in communication and interaction. It is well established that at different stages of family life, individuals pursue specific goals, face common tasks, and experience varying levels of happiness depending on multiple factors.

Problem statement. Despite a growing body of research on marital satisfaction, the ways in which the sources of subjective happiness differ across the family life cycle remain insufficiently explored. Most studies focus either on young couples or on marital satisfaction as a global indicator, neglecting the qualitative shifts in what makes spouses happy as their relationship matures. Understanding these dynamics is essential for developing stage-specific psychological interventions.

Objective. The present study aimed to investigate the sources and levels of subjective

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happiness in spouses at different stages of family life, specifically comparing young couples (marital duration up to 5 years) and mature couples (marital duration over 20 years).

Hypotheses. We hypothesized that: (1) mature couples would report higher levels of trust, mutual understanding, and marital satisfaction than young couples; (2) the level of subjective happiness would not differ significantly between the two groups; and (3) the sources of happiness would differ: young spouses would derive happiness from intensive interaction, merging, and identification with their partner, whereas mature spouses would value opportunities for personal growth and autonomy within the marriage.

Theoretical Background

Marital satisfaction is a subjective assessment of the quality of one's marital relationship, formed by comparing personal expectations with actual experience. It is influenced by a complex interplay of physical, material, cultural, sexual, and psychological factors. Key characteristics of a happy marriage include mutual love, acceptance, respect, support, deep spiritual communication, trust, a willingness to face practical and financial challenges together, and physical attraction (Aleshina, 2007). Based on satisfaction, researchers distinguish several types of marriage: happy, harmonious, problematic, crisis, and dissolved (Potashova, 2019). Marital compatibility, a key condition for happiness, comprises four core dimensions: spiritual, personal, family-practical, and physiological (Sysenko, 1989).

Research consistently shows that marital satisfaction follows a U-shaped curve across the family life cycle. Satisfaction declines during the first two decades of marriage, reaching its lowest point at 12–18 years, before rising again (Aleshina, 2007). Lysenko and Shapov (2025) found the highest satisfaction among couples with up to four years of marriage and the lowest among those married 5–9 years—a period marked by increased family problems, crises, declining romance, and reduced emotional intensity. Similar patterns have been observed cross-culturally. Burkhonova (2026) reported the lowest marital satisfaction among Uzbek couples with 5–10 years of marriage and the highest among those married over 11 years. Importantly, the motive for marriage significantly influences satisfaction: those who married for love report the highest satisfaction, while those who married out of fear of loneliness or due to forced circumstances report the lowest.

Recent research has identified a range of psychological factors that shape marital satisfaction and subjective well-being. Value-meaning orientations play a significant role: Grishina and Prudnik (2022) found direct positive correlations between marital satisfaction and the perception of life as interesting and meaningful ($r = 0.231$) and the ability to build life according to one's goals ($r = 0.256$). Role expectations, particularly personal identification with the spouse, are also closely linked to the value system. Emotional intelligence has emerged as a critical personal resource. Shkryabko et al. (2025) showed that spouses with high emotional intelligence prioritize values such as communication, sincerity, openness, and family commitment, and report higher marital satisfaction. Conversely, those with low emotional intelligence tend to focus on external attributes of well-being and are more prone to dissatisfaction.

Conflict resolution strategies are another key behavioral determinant. Yakimanskaya (2024) found that spouses with high marital satisfaction tend to use cooperation and compromise, while those with low satisfaction prefer avoidance, rivalry, and accommodation. These non-constructive strategies create a vicious cycle, reducing satisfaction and reinforcing maladaptive patterns. Communication quality is also foundational. Mazur and Doronina (2024) reported that satisfied spouses exhibit higher levels of trust, ease of communication, mutual understanding, and shared values. In contrast, dissatisfied spouses tend to conceal important aspects of their lives and avoid sharing experiences.

Gender differences in marital satisfaction are well documented. Akhmetshina and Galimova (2024) found that men are significantly more satisfied with marriage than women ($t = 2.7$, $p \leq 0.01$). While 64% of men rated their marriage as happy, only 52% of women did. These differences are attributed to divergent expectations: women more often seek emotional support and understanding, while men prioritize stability and comfort. Significant gender differences also exist in sexual satisfaction, with 56% of men versus 32% of women reporting complete satisfaction. Personality orientation also matters. Fomina and Proshlyakov (2022) demonstrated that women with a task-oriented personality—focused on achievement and productivity—report significantly lower marital satisfaction than those oriented toward themselves or others. Such women's tendency to prioritize ideal outcomes over relational harmony negatively impacts the emotional climate of the family.

The concept of the family life cycle, introduced by Duvall and Hill (1948), provides a framework for understanding how marital

relationships evolve. Each stage presents specific developmental tasks and normative crises. The transition from one stage to the next involves changes in family structure, resources, relationship quality, and role responsibilities. Research by Zimmerman and Easterlin (2006), based on an 18-year longitudinal study of 37,000 individuals, showed that while people become significantly happier after marriage, this effect peaks in the first two years and then declines, though happiness remains higher than before marriage. The transition to parenthood represents a critical juncture. Myrskylä and Margolis (2014) found that parents become significantly happier in the year before the birth of their first child, and this elevated happiness persists for one year after birth before returning to pre-birth levels. Thus, while children can bring joy, they also introduce stress, financial pressure, and reduced romantic intimacy.

In mature marriages, happiness is increasingly tied to conflict resolution skills, mutual respect, respect for personal boundaries, shared commitment to personal growth, and expressions of gratitude (Lysenko & Shapov, 2025). These findings align with broader conceptualizations of happiness as a dynamic process influenced by meaning, positive relationships, and personal development (Seligman, 2002; Ryff, 1989).

The initial stage of family life warrants particular attention. Kovsharova (2026) notes that the crisis of the first year of marriage is a normative developmental stage, linked to a neurophysiological decline in dopaminergic support and the inevitable disillusionment of romantic ideals. Successfully navigating this stage lays the foundation for long-term stability and mature partnership.

Integrating multiple theoretical perspectives, Morozov and Bogush (2021) emphasize that marital satisfaction, while an important integrative indicator, does not fully capture the complexity of marital quality. Drawing on an interpersonal approach, they identify three interrelated components of marital relationships: cognitive (marital expectations and attitudes), emotional (emotional closeness, attraction, respect), and conative or behavioral (fulfillment of family functions, role distribution, conflict resolution). Disharmony among these components, especially when marital expectations diverge from actual role behavior, leads to decreased satisfaction and may provoke conflict.

Summarizing recent research, Kotelnikova, Yu. S. (2018) distinguishes four groups of factors affecting marital satisfaction in young families: socio-demographic and economic (income, age, presence of children); extra-family characteristics (occupation, social environment); attitudes and behaviors in key family domains (division of chores, leisure); and characteristics of marital interaction (emotional and moral values, shared views). Gender differences are also evident: women with high marital satisfaction tend to favor equal role distribution, while for men, congruence in sexual roles is more significant.

Il'insky (2017) highlights that congruence in role expectations and shared family values are critical for family psychological well-being. Spiritual satisfaction, unity, and a sense of shared life are most important for marital satisfaction. However, an excessive focus on the domestic or sexual spheres, according to nonlinear models, may reduce satisfaction, underscoring the need for balance in role distribution. Epanchintseva and Kozlovskaya (2024) emphasize the importance of aligning role expectations and claims. Women place greater value on the domestic function of the family than men, requiring mutual understanding and flexibility in dividing responsibilities. They also found a significant positive correlation between women's social activity and marital satisfaction ($r = 0.383$; $p \leq 0.01$), indicating a transformation of traditional gender roles in modern families.

Solynin and Tsvetkova (2024) examine tolerance for uncertainty as a psychological resource for adaptation to married life. Young spouses with less than three years of marriage demonstrate higher tolerance for uncertainty and a more positive attitude toward uncertain situations compared to those married 3–10 years, reflecting the active adaptation period. With longer marriage duration, this tolerance becomes closely correlated with family adaptation, cohesion, and satisfaction. Danilova (2025) explores the dynamics of interpersonal relations across family stages. Spouses in middle-duration marriages (6–14 years) show significantly higher tension compared to young couples (up to 5 years). Middle-aged men experience increased asthenic feelings, while women's marital satisfaction declines. Young spouses, in contrast, exhibit greater concern about the future, likely reflecting the instability of early marriage. Ulanovskaya (2025) shows that couples with low marital satisfaction exhibit specific communication patterns: spouses tend to conceal important aspects of their lives, avoid sharing experiences, and solve problems independently. Gender differences emerge: women show higher scores in understanding, emotional attraction, and partner authority,

suggesting greater emotional involvement in the relationship.

The psychotherapeutic function of marriage has gained particular importance in the current context, where high stress levels and societal uncertainty increase the need for psychological support from a spouse. Despite the extensive literature reviewed above, the question of how the sources of subjective happiness differ between young and mature spouses remains insufficiently addressed. The present study therefore aims to fill this gap by investigating both the level and the sources of subjective happiness in young (up to 5 years) versus mature (over 20 years) couples, testing the three hypotheses stated above.

2. Materials and Methods

2.1. Sample

The study involved 200 married couples (N = 400 individuals), divided into two groups:

Young couples (n = 100, marital duration up to 5 years);

Mature couples (n = 100, marital duration over 20 years).

To control for the influence of parenthood, each group included an equal number of couples with and without children. Participants were recruited through online channels and completed all measures via online forms.

2.2. Measures

1. *Oxford Happiness Inventory* (Hills & Argyle, 2002) – to assess subjective happiness.

2. *Marital Satisfaction Questionnaire* (Stolin, Romanova, & Butenko, 1984) – to assess satisfaction with marriage.

3. *Author-developed survey* – designed to explore spouses' perceptions of the sources of happiness in their marriage, including open-ended questions about what makes them happy.

2.3. Data Analysis

Quantitative data were analyzed using the Mann–Whitney U test to compare group differences and Spearman's rank correlation to examine relationships between marital satisfaction and subjective happiness. Qualitative responses were subjected to thematic content analysis to identify recurring sources of happiness in each group.

3. Results

3.1. Descriptive Statistics and Group Differences

The Mann–Whitney U test revealed statistically significant differences between young and mature couples on both key variables.

Table. Differences Between Groups (Mann–Whitney U Test)

Variable	Mature Couples (N = 100)	Young Couples (N = 100)	U (emp)	U crit (p = 0.01)
Marital Satisfaction	27.62	31.65	**1222.5***	1356
Subjective Happiness	56.78	45.93	**1282.5***	1356

*Note: $p < 0.01$.

Young couples reported significantly higher marital satisfaction (U = 1222.5, p < 0.01) than mature couples. In contrast, mature couples reported significantly higher subjective happiness (U = 1282.5, p < 0.01). These findings partially confirm our hypothesis: while the level of subjective happiness did differ (contrary to our expectation), the direction of difference, mature spouses reporting higher happiness, is noteworthy and suggests a dynamic adaptation process.

The standard deviation for happiness was larger in the young group (SD = 14.65) than in the mature group (SD = 12.97), indicating greater variability in happiness perceptions among younger spouses.

3.2. Correlation Between Marital Satisfaction and Subjective Happiness

Spearman's correlation revealed a weak positive relationship between marital satisfaction and subjective happiness in both groups: ρ = 0.1525 (mature couples) and ρ = 0.1798 (young couples). While both coefficients are positive, the strength of association is negligible. This suggests that marital quality is only a modest contributor to global happiness, with other factors—personality, professional fulfillment, social networks, and life circumstances—playing substantial roles.

3.3 Sources of Happiness: Qualitative Findings

Thematic analysis of open-ended responses revealed distinct patterns in the sources of happiness for young versus mature spouses.

In young couples, the primary sources of happiness were:

- Shared leisure time (e.g., traveling together, engaging in joint hobbies);
- Co-creation of family space (e.g., setting up a home, planning future);
- Intensive togetherness (e.g., "spending as much time together as possible").

Young spouses frequently described happiness in terms of merging and identification with their partner. These responses reflect the romantic, emotionally intense nature of early marriage, often characterized by high interdependence.

In mature couples, the primary sources of happiness were:

- Established trust (e.g., "we know we can rely on each other no matter what");
- Deep mutual understanding (e.g., "we understand each other without words");
- Personal autonomy within the marriage (e.g., "we respect each other's need for space and independence").

Mature spouses emphasized autonomy grounded in trust. They described happiness as deriving from a stable foundation of mutual respect and understanding that allows each partner to pursue individual interests while maintaining a secure bond.

Notably, 80% of young spouses explicitly linked their happiness to their marital relationship, whereas mature spouses more often cited a combination of marital and extra-marital factors (e.g., children's achievements, career stability, personal growth).

4. Discussion

This study provides empirical evidence for the dynamic nature of sources of subjective happiness across the family life cycle (Andreeva, 2005). While young spouses report higher marital satisfaction, their happiness is less stable and more dependent on the intensity of the relationship. Mature spouses, despite reporting lower marital satisfaction, experience higher and more stable subjective happiness, derived from a secure, autonomy-supporting partnership.

These findings resonate with the U-shaped curve of marital satisfaction (Aleshina, 2007; Zimmerman & Easterlin, 2006) but extend it by showing that global happiness follows a different trajectory. Mature couples may have weathered normative crises (e.g., the transition to parenthood, midlife reassessment) and developed resilient relational patterns that sustain happiness even when satisfaction with the relationship as such is moderate.

The weak correlation between marital satisfaction and subjective happiness is a crucial finding. It suggests that satisfaction and happiness are distinct constructs in the marital context. Marital satisfaction is a domain-specific evaluation, whereas subjective happiness reflects a global appraisal of one's life. This aligns with the argument of Morozov and Bogush (2021) that marital satisfaction, while important, does not capture the full complexity of marital quality, which also includes cognitive (expectations, attitudes) and conative (conflict strategies, role distribution) components.

Our qualitative findings further nuance this picture. For young spouses, happiness is relational and symbiotic. For mature spouses, happiness is relational but autonomous. This shift mirrors the developmental trajectory from symbiotic love to mature partnership described in attachment theory (Bowlby, 1982) and family systems theory (Minuchin, 2009). It also reflects the increased importance of tolerance for uncertainty in long-term marriages (Solynin & Tsvetkova, 2024), as couples learn to balance togetherness with independence.

The higher variability in happiness among young couples likely reflects the instability of early marriage. While many are in the "honeymoon phase," others may already be experiencing disillusionment or struggling with role negotiation. This underscores the vulnerability of this period and the importance of preventive psychological support (Kovsharova, 2026).

These findings have several practical implications:

1. *Stage-specific interventions*: Psychological support should be tailored to the developmental stage of the marriage. Young couples may benefit from communication skills training, realistic expectation setting, and guidance on navigating the transition to parenthood. Mature couples may benefit from interventions focused on renegotiating roles, managing empty-nest transitions, and fostering intimacy while preserving autonomy.
2. *Focus on communication and conflict resolution*: Given the importance of these factors for both satisfaction and happiness (Yakimanskaya, 2024; Mazur & Doronina, 2024), training in constructive conflict resolution and emotional intelligence (Shkryabko et al., 2025) should be a core component of support programs.
3. *Holistic assessment:* The weak correlation between marital satisfaction and subjective happiness suggests that clinicians should not rely solely on satisfaction measures to assess well-being. A broader assessment of life meaning, personal goals, and extra-marital resources is warranted.

This study has several limitations. First, the cross-sectional design precludes causal inferences. Longitudinal research is needed to track how sources of happiness evolve within the same couples over time. Second, the sample was limited to Russian couples, and findings may not generalize to other cultural contexts where gender roles, family values, and social support systems differ. Third, we did not analyze couples as dyads; future research should explore within-couple concordance in sources of happiness and its impact on relational outcomes.

Future studies should also examine the role of personality orientation (Fomina & Proshlyakov, 2022) and emotional intelligence (Shkryabko et al., 2025) in moderating the satisfaction-happiness link. Including couples with longer durations (over 25 years) and those in post-parental stages would further illuminate the full trajectory of marital well-being.

5. Conclusion

This study demonstrates that the sources of subjective happiness in marriage shift significantly across the family life cycle. Young spouses derive happiness from togetherness, shared activities, and merging, whereas mature spouses derive it from trust, mutual understanding, and autonomy. Mature spouses report higher subjective happiness despite lower marital satisfaction, suggesting that global happiness is shaped by a broader range of life domains and reflects successful adaptation to the challenges of long-term partnership.

These findings challenge the assumption that marital satisfaction is the primary determinant of happiness in marriage and highlight the need for a more differentiated understanding of marital well-being. Supporting couples effectively requires attending not only to satisfaction but also to the evolving sources of meaning, connection, and personal fulfillment across the lifespan of the relationship.

Ethics Statement: All procedures performed in this study were in accordance with the 1964 Helsinki Declaration and its later amendments. Informed consent was obtained from all individual participants included in the study.

CRediT author statement: The author confirms sole responsibility for the conception, design, data collection, analysis, and interpretation of the results presented in this manuscript. The text was carefully reviewed and proofread, and the final version has been approved by the author**.**

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Highlights:

- Young spouses report significantly higher marital satisfaction than mature spouses, but mature spouses report significantly higher subjective happiness.
- Marital satisfaction and subjective happiness show only a weak positive correlation in both young and mature couples, indicating that global happiness is shaped by broader personal and social factors.
- The sources of happiness shift across the family life cycle: young couples value togetherness and shared activities, while mature couples prioritize trust, mutual understanding, and personal autonomy.
- Eighty percent of young spouses directly link their happiness to the marital relationship, whereas mature spouses draw happiness from a wider range of life domains.
- The findings challenge the assumption that marital satisfaction is the primary determinant of happiness in marriage and underscore the need for stage-specific psychological support.

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Источники субъективного счастья у супругов на разных этапах семейной жизни

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Резюме. *Актуальность и проблема.* В условиях стремительной социальной трансформации семья остаётся ключевым фактором психологического благополучия личности. Тем не менее вопрос о том, как источники супружеского счастья изменяются на разных этапах жизненного цикла семьи, остаётся недостаточно изученным. Выявление этих различий имеет решающее значение для разработки дифференцированных психологических интервенций, позволяющих эффективно поддерживать супружеские пары по мере развития их отношений. *Цель* данного исследования состояла в изучении психологических особенностей источников субъективного счастья у супругов на разных этапах семейной жизни. *Методы.* В исследовании приняли участие 400 человек из 200 супружеских пар с разным стажем семейной жизни: молодые пары (N=100), со стажем семейной жизни до 5 лет, и зрелые (N=100), со стажем семейной жизни более 20 лет. Сбор данных осуществлялся с помощью Оксфордского опросника счастья (Argyle, 1989), опросника удовлетворенности браком (Столин, Бутенко, Романова, 1984) и авторской анкеты, направленной на выявление представлений супругов о семейном счастье. Количественная обработка данных проводилась с использованием U-критерия Манна–Уитни и коэффициента ранговой корреляции Спирмена. *Результаты:* Супруги в молодых семьях продемонстрировали более высокий уровень удовлетворённости браком ($U = 1222{,}5$, $p < 0{,}01$), тогда как супруги в зрелых семьях — более высокий уровень субъективного счастья ($U = 1282{,}5$, $p < 0{,}01$). Корреляционный анализ выявил слабую положительную связь между удовлетворённостью браком и субъективным счастьем в обеих группах ($\rho = 0{,}15–0{,}18$), что свидетельствует о том, что качество супружеских отношений является лишь одним из нескольких факторов, определяющих общее ощущение счастья. Обнаружены качественные различия в источниках счастья: молодые супруги называли в качестве ключевых источников совместное времяпрепровождение, обустройство семейного пространства и интенсивное времяпрепровождение вдвоём; зрелые супруги акцентировали устоявшиеся доверительные отношения, взаимопонимание и личную автономию в браке. *Заключение.* Полученные данные свидетельствуют о динамическом изменении источников субъективного счастья на протяжении жизненного цикла семьи: от романтической близости в молодых супружеских парах к автономии, основанной на глубоком доверии, в зрелых. Слабая корреляция между удовлетворённостью браком и субъективным счастьем позволяет предположить, что общее ощущение счастья определяется более широким кругом личностных, профессиональных и социальных факторов, выходящих за пределы качества супружеских отношений. Эти результаты подчёркивают необходимость дифференцированной психологической поддержки супружеских пар на разных этапах семейной жизни, а также значимость лонгитюдных исследований для дальнейшего изучения данной проблематики.

Ключевые слова: супруги, субъективное счастье, удовлетворённость в браке, этапы семейной жизни, брак, семья, психологическое благополучие

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LEARNING FROM THE PAST

27.11.1928–12.03. 2026
Natalia Ivanovna Chuprikova

On March 12, 2026, Natalia Ivanovna Chuprikova, Doctor of Psychology and Professor Emerita of the Psychological Institute of the Russian Academy of Education, passed away. She was a patriarch of Russian psychology, a preeminent scholar in the fields of psychophysiology, the theory of higher nervous activity, and developmental psychology. Her scientific legacy spanned an entire epoch in the development of Russian psychological thought. Chuprikova served as a crystallizing center of genuinely free scientific inquiry, distinguished by her independent scientific stance and her uncompromising commitment to the criteria of scientific rigor. Under her mentorship, a cohort of scientists emerged who, in their groundbreaking research grounded in the differentiation–integration principle of development, break down interdisciplinary barriers and, within a unified terminological framework, lay the foundation for a psychology of the new millennium.

The key milestones of N.I. Chuprikova's scientific legacy are presented in the second issue of the journal Natural Systems of Mind (2024, Volume 4, Issue 2) in the section "Learning from the past". In this regard, the editorial board of the journal decided to publish in this issue excerpts from a letter from N.I. Chuprikova to K.V. Anokhin, which should be considered as a testament to scientists in the field of neuroscience – an uncompromising call for methodological rigor and a warning against replacing objective analysis with mythologized constructs of consciousness and free will.

Brief Considerations on Some Theoretical Aspects of Neuroscience

1. On the translation of the term mind. The English term mind is more adequately translated into Russian not as "reason" (razum) but as "psyche" (psikhika). In the English-language tradition, the concept of mind encompasses sensations, feelings, memory, thinking, intentions, desires, needs, as well as the conscious and the unconscious. In the Russian philosophical and psychological tradition, all these phenomena are denoted by the term "psyche." The Russian word *razum* ("reason") refers only to a subset of mental phenomena. Thus, in terms of content and scope, the English mind is equivalent to the Russian "psyche." Accordingly, the mind-body problem and the mind-brain problem correspond in the Russian tradition to the psychophysical and psychophysiological problems, respectively.

2. The hypernetwork and the representational-verbal system. The characteristics attributed to the hypernetwork pertain to the extensive representational-verbal system of humans. The presentation of the word "house" activates an infinite number of associations (my house, the neighbor's house, the street, furniture, residents, parts of the house, etc.). This does not occur when simply viewing a picture of a house (unless the picture activates the verbal network). Animals either lack such an extensive representational-verbal system or possess only its rudimentary form.

3. The qualitative difference of the human brain. According to I.P. Pavlov, the functioning of the human brain and its higher nervous activity qualitatively differ from those of animals due to the "grand signalization of speech" (Pavlov's expression). Unfortunately, contemporary science does not always appreciate this difference. As the author has repeatedly noted (particularly in her latest book), the significance of Pavlov's idea was understood only by L.S. Vygotsky.

4**.** *K.V. Anokhin's "wormholes" metaphor and E.I. Boyko's theory of dynamic temporary neural connections.* With regard to the "wormholes" metaphor proposed by K.V. Anokhin, it is relevant to recall E.I. Boyko's theory (1950s–1960s). Boyko postulated three types of excitation propagation via neural connections:

unconditional, innate, permanent, genetically specified connections;

temporary connections (Pavlovian), formed on the basis of the coincidence of excitation foci and underlying individually acquired behavior and learning;

dynamic connections, which arise emergently without prior formation, as a result of the interaction of generalized "closure" connections (extraction of common elements, specialization of excitation).

Boyko's theory drew on I.M. Sechenov's conception of thinking as mental comparison, J.S. Mill's theory of inductive reasoning, and experimental data from Boyko's own laboratory. Key works include Borderline Problems of Psychology and Psychophysiology (Boyko, 1961), Human Reaction Time (Boyko, 1964), and Mechanisms of Mental Activity (Boyko, 1976). This theory may serve as an important prerequisite for a general theory of brain function, and the "wormholes" metaphor may illustrate the spontaneous emergence of new pathways of excitation.

5. Vygotsky's assessment of Pavlov's methodology and the current state of neuroscience. L.S. Vygotsky held Pavlov's methodology for studying brain activity in high regard. Vygotsky considered the fine imposed by Pavlov in his laboratory for the use of psychological concepts to be a fact of no lesser significance than the dispute over the creed in the history of religion, because the fine targeted causeless, spaceless, indefinite, mythological thinking. Unfortunately, contemporary neuroscience exhibits an excess of such thinking. An example is B. Libet's experiments: the subject receives a verbal instruction to voluntarily raise either the right or left hand. The task of science is to establish the physiological mechanisms by which this instruction is implemented, whereas theorists attempt to explain the nature of a complex objective brain process through even more vague concepts such as "consciousness" and "free will." This exemplifies the substitution of objective analysis with subjective constructs.

These considerations are offered to colleagues in the hope that they may prove useful for theoretical developments in neuroscience.

N.I. Chuprikova

Prospects for Solving the Psychophysiological Problem: Brain Activity, the Mind, and Consciousness Phenomena

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Abstract. The current state of the psychophysiological problem is analyzed. It is concluded that the opinion of Crick (1982) and Nagel (2001) is correct: the inability to clearly reveal the connection between the mind and brain activity indicates the inadequacy of our concepts of the mind, consciousness, and brain activity, and therefore requires a radical revision of their content. An attempt is made to show how such new concepts can be developed. The proposed basis for their development is the understanding, established in Russian psychology, of the mind as a reflection of reality necessary for the regulation of behavior and activity, and of the brain as the bodily organ that, in evolution, has taken on this function. The idea of the cerebral "embodiment" of reality in acts of sensory-perceptual cognition and of the physiological mechanisms of consciousness, owing to which their content is disclosed to the human being as a subject of cognition and activity, is developed. Sechenov's (1947, 1952) non-Cartesian theory of reflex brain activity, Spinoza's monistic theory of the relationship between mind and body, Brentano's theory of intentional acts of consciousness (see Yaroshevsky, 1976), and the conception of Edelman (1981, 2012) and Ivanitsky (1999, 2004) on the recurrent return of excitations to sensory-perceptual areas of the brain as a mechanism of consciousness are drawn into the discussion. The general propositions developed are concretized by examining the neurophysiological mechanisms of the reflection of space and its phenomenal representation in human consciousness.

Keywords: the Mind, Consciousness, Brain Activity, Psychophysiological Problem, Theory of Reflection, Intentional Acts of Consciousness

1. The Theory of Reflection as a Basis for Solving the Psychophysiological Problem

At the present time, hardly anyone seriously doubts that our mind and our consciousness are generated by our brain and are its function. According to Nagel (1998), an active participant in contemporary discussions of the psychophysical problem, there is no doubt today that the mental is always accompanied by the physical, that there can be no mental differences without corresponding physical differences. However, Nagel's (1998) profound thought is that such accompaniment (the correspondence of one to the other) remains a purely empirical fact, the nature and necessity of which are unclear. We cannot propose, he says, a clear theoretical conception that would allow us to understand in what necessary way subjective and physical properties can be simultaneously essential aspects of a single essence or process.

The essence of the theoretical failure to understand the relationship between the psyche and brain activity usually takes the form of the assertion that we do not understand how and why mental phenomena arise in brain structures. Some authors claim that the absence of a logical bridge between psychology and brain physiology indicates a fundamental ontological gap between the mental and the physical, from which they conclude that materialism is false and that some form of dualism may be true. Others believe that the issue is not an ontological gap (which does not actually exist) but our inability to cope with the hard problem.

Nagel (1998) holds the second view, seeing the main cause of difficulties in solving the psychophysiological problem in the inadequacy of the concepts we use. He writes that if, when considering the relationship between consciousness and physical processes in the brain, our concepts are unable to reveal the necessary connection between them that science has established and that actually exists, then most likely we should recognize our concepts as radically inadequate. A revision is required of how we conceive either consciousness or matter, or both. Crick (1979) wrote that if we are unable to resolve the question of the relationship between consciousness and brain activity in a consistent scientific manner, this suggests that our whole way of thinking about such problems

may be mistaken. The history of physics vividly demonstrates how firmly established facts that did not fit into the Procrustean bed of existing concepts led to a revision and change in the content of the cardinal physical concepts of matter, motion, space, and time. It seems that in psychology today, particularly in connection with the need for a scientific solution to the psychophysical problem, there is an urgent need for a critical analysis and revision of the content of many of its basic concepts.

Many years of analysis of the logical dead ends on the path to a monistic materialistic solution to the psychophysiological (mind-body) problem have led me to conclude that they are rooted not in any fundamental essential differences between the nature of the psyche and brain activity (which we either do not know or cannot understand), but exclusively in the inadequacy of the concepts used in discussing the problem, both about the psyche and about brain activity (Chuprikova, 1985, 2010, 2015, 2016).

In the briefest form, the traditional concepts of psyche and brain activity come down to the following.

1. When discussing the psychophysiological problem, mental phenomena are treated essentially exclusively in the spirit of classical introspectionist psychology. They are understood as phenomena devoid of any materiality, lacking objective existence, as purely subjective phenomena accessible only to the self-observation of the subject to whom they belong. With such a treatment, the concepts of the mind and consciousness become identical, and the representation of the mind in consciousness in the form of subjective experiences appears as its immanent, integral property.

2. Brain activity is treated in the Cartesian spirit, exclusively as purely material, physical, or physicochemical, by definition proceeding without any participation of the mind and consciousness, i.e., without the participation of what in English is denoted by the term *mind*. In contemporary treatments, this is the activity of neurons and their connections; it is some "computations" that the brain performs in solving various behavioral and cognitive tasks.

It is clear that from such initial positions, the mind and matter (brain activity) from the very beginning appear as absolutely different worlds. These positions already initially contain an absolute ontological dualism of spirit and matter, the mind and brain activity. Therefore, any rational understanding of their actually revealed connection is fundamentally impossible. Let us cite the expressive words of Galperin (1992): "The true source of the 'open crisis of psychology' was and remains ontological dualism – the recognition of matter and the mind as two worlds absolutely different from each other. It is characteristic that none of the militant directions of the crisis period questioned this dualism. ... If we think of them as absolutely opposite kinds of being, then this transition really cannot be understood" (Galperin, 1992, p. 3).

The only way out is to radically revise and change the traditionally established concepts of the mind, consciousness, and brain activity, as Nagel (1998) and Crick (1979) argued.

Even at the turn of the 19th–20th centuries, views were expressed that if the mind arose in evolution and exists for some reason, it must necessarily play some unique, indispensable adaptive role in the life and survival of organisms. Lange (1914) wrote that the mind is a special real-life process inherent in all living organisms and developing in their series along with the general evolution from lower to higher forms. The mind is a special way of adapting the organism to the environment, helping it in the struggle for existence. However, the question of what this special real-life process is, how it differs from all other life processes, what its nature is, and how exactly it ensures the adaptation of organisms to the environment remained open.

A general answer to this question can be given within the framework of the understanding adopted in Russian psychology of the mind as a reflection of reality necessary for the regulation of behavior and activity. Within this approach, the behavior of living beings can only be successful and ensure their survival and development because it is consistent with the conditions of their external and internal environment. And this requires the organism to reflect these conditions. Since mental activity is carried out by the brain of living beings, reliance on the theory of reflection makes it possible to overcome the Cartesian physicalist-mechanistic understanding of brain activity. The theory of reflection dictates an understanding of this activity as reflective in its nature and function, i.e., as immanently mental activity, rather than non-mental, as traditionally assumed by the overwhelming majority of authors discussing the psychophysiological problem.

From the standpoint of the theory of reflection, the mental is qualitatively specific bodily-brain processes in which reality existing outside them is reflected (represented, reproduced, recreated, embodied). Due to the representation of reality in brain activity, and only thanks to such representation, these unique

brain processes, ensembles of excitations from which arrive at the executive organs, act as regulators of behavior and activity, coordinating the parameters of their work with the requirements of the external and internal conditions of life of animals and humans.

This outlined conception was first developed in clear form by Sechenov (1947, 1952). In his works *Reflexes of the Brain*, *Who and How to Develop Psychology*, *Elements of Thought* (Sechenov, 1947), and *Physiology of Nerve Centers* (Sechenov, 1952), the mind in the form of sensation was initially introduced into the composition of reflexes as a function of their central brain link. The central brain link of the reflex in Sechenov's interpretation is not just a device for purely mechanical transmission of nerve impulses from receptors to effectors. This device is an organ of sensation and a director of actions adequate to the external and internal conditions of the organism's life. Sensation, according to Sechenov, does not at all presuppose its necessary conscious form. Wherever the nature of the response acts indicates the ability of an animal or human to distinguish the conditions of stimulation that cause movement, we should speak of sensation. Therefore, Sechenov's well-known thesis about the coordination of movements with sensation reveals the substantive causal link between the flexible coordination of movements and the infinitely varying characteristics of the stimuli that cause them. The strictly lawful nature of response acts in Sechenov's (1947) reflex theory fully retains its force, but the determination of behavior includes the reflection and discrimination by the nervous system of the quantitative and qualitative characteristics of stimulation, i.e., what is usually called the mind. The function of sensation postulated by Sechenov, revealed in the simplest elementary reflex acts, fully retains, from his point of view, its force with respect to manifestations of instinct and reason, when sensation becomes highly developed, highly differentiated, and coordinated (Sechenov, 1947, p. 416). According to the fair assessment of Yaroshevsky (1976), Sechenov radically (one might even say revolutionarily) transformed the concept of the reflex as a concept characterizing the deterministic principle of brain activity, and at the same time presented the mental itself in a fundamentally new way (Yaroshevsky, 1976, pp. 235, 237). Unfortunately, Sechenov's position regarding the non-Cartesian understanding of the nature of reflex brain activity remains completely unclaimed in psychology, philosophy, and neuroscience.

In his polemic with Kavelin, Sechenov (1947) sharply rejected the latter's assertion that he allegedly tried to derive the essence of the mental, its content, from the "structure of the nerve centers". There is no question of any such derivation in Sechenov. His position is completely different. It consists in the fact that there is a triune nervous reflex act (the simplest or the most complex), beginning with an external influence, ending with movement, and containing a middle central element located between them. In this triune system, the external impulse becomes the productive cause of adequate movement only because it turns into a sensation that "serves as an instrument for distinguishing the conditions of action". Sensation in Sechenov (1947) is a content-functional characteristic of the work of nerve centers[1].

In its general meaning, Sechenov's theory fully corresponds to Spinoza's philosophical monistic theory, according to which body and soul are one and the same "thing," one and the same substance, presented in one case under the attribute of extension and in the other under the attribute of thinking. In modern language, there are special psychophysiological processes in the working brain that, taken under the attribute of extension, appear as the most complex activity of its nerve cells and their ensembles, and under the attribute of thinking, as their content reflecting (embodying in themselves) the

[1]A prominent representative of neobehaviorism, E. Tolman (1932), arrived at a similar scheme for the organization of behavioral acts. Although his statements are less definite and less "materialistic" than Sechenov's, in essence, Tolman said the same thing as Sechenov. Tolman argued that immanent in any behavior there are certain immediate "inherent" goals and cognitive processes. He maintained that these functionally defined variables are the final link in the causal control of the determinants of behavior, and that they must be discovered and defined by appropriate experimental procedures. Tolman emphasized that these variables are objective, and that it is we, the external observers, who, having discovered them, infer or even invent them as immanent determinants of behavior. According to Tolman, they are the most immediate and ultimate causes of behavior, which he called "immanent determinants." However, he added that immanent determinants themselves are caused by environmental stimuli and initial physiological states. Such environmental stimuli and physiological states, Tolman noted, are designated as the ultimate or "initial causes" of behavior. Thus, immanent determinants are included in the causal chain between the initial causes and behavior as the final outcome.

content of the external world and the internal states of the organism itself (Chuprikova, 2010, 2015).

Within the frameworks of Sechenov's (1947, 1952) and Spinoza's theories, there are no separate independent mental processes on the one hand, and brain activity processes on the other. There are unified psychophysiological processes that have a dual material-ideal nature. They are material because they are from beginning to end extended and material. They are ideal in their content because they embody (recreate, reproduce) and carry within themselves reality existing outside them.

This understanding of things makes it possible to transfer the psychophysical (psychophysiological) problem from the realm of philosophical speculation to the realm of concrete scientific research. It will be necessary to answer concretely how exactly the reality lying outside the nervous system and the brain (the external world and the internal states of the living being itself) is embodied in the activity of its nervous system and brain, what these "neural embodiments" are, and how exactly they, arriving at the executive organs, provide behavior adequate to the external environment and the coordinated work of all other organs and systems of the organism.

"Neural embodiments" of the contents of the external world and internal states of the organism do not presuppose an immanent subjective representation inherently belonging to them, i.e., an immanent givenness of the object to the subject. Today it is well known that a person (not to mention animals) "is capable of carrying out complex adaptive processes controlled by environmental objects without being at all aware of the presence of their image; he avoids obstacles and manipulates things as if without seeing them" (Leontiev, 1975, p. 125). Subjective introspective givenness of objects to the subject is not always a necessarily and immediately arising concomitant of the images of these objects represented in their "brain embodiments". It is a consequence of special additional physiological mechanisms that are mechanisms of consciousness and verbalization of external and internal impressions. These are mechanisms of the recurrent return of excitations from higher brain centers associated with memory, language, and the self-image to the primary brain projections of the "neural embodiments" of external world objects and internal states of the organism that arise upon their direct action on the sense organs (Chuprikova, 1985, 2015; Edelman, 1982, 2001; Ivanitskii, 1999, 2004;). When such a recurrent return of excitations occurs, the content of the "neural embodiments" of particular external or internal stimuli becomes conscious and can be verbalized.

Today, an attempt can be made to demonstrate the possibility of a concrete scientific implementation of the idea of "neural embodiments" of reality as unified psychophysiological processes having a dual material-ideal nature, and then on this basis to show how their subjective representation in consciousness can arise. Below, such an attempt will be implemented using the example of the mechanisms of reflection of space in animals and humans and its subjective representation in human consciousness.

2. Mechanisms of Reflection of Space and Its Subjective Representation in Human Consciousness

The problem of space perception is one of the classic fundamental problems of psychology. The fundamental question of this problem with respect to vision is how one can see distances to objects and between them, their relief and depth, i.e., see the world as voluminous and three-dimensional, when all its projections on the retina are two-dimensional. As written in the book on experimental psychology by Woodworth, we would like to find those cues, those sensory data, that we use in the visual perception of space, and to decipher as far as possible the very process of their use.

As a result of many experimental studies, it has been possible to find and describe those specific cues of vision and proprioception that provide visual perception of depth and distance and that are still reported in all textbooks and manuals on the psychology of perception. For example, Schiffman (2003) and Chuprikova (2009, 2015) discuss them. To denote the sensory cues necessary for three-dimensional spatial perception, the concept of a cue (or "sign") was introduced. By cues are meant the two-dimensional characteristics of retinal images and proprioceptive sensations during accommodation of the lens and convergence of the eyes, the presence of which regularly entails a volumetric three-dimensional perception of reality. However, the mechanisms of using the found cues of three-dimensional space remain largely undeciphered. At the same time, the regular objective relationship between the non-spatial cues of space and their objective spatial source in the real world, the relationship that allows humans and animals to very accurately and reliably reflect the distances between their body and surrounding objects, which finds expression in the striking accuracy

of aiming and grasping movements, also remains unclear.

This article attempts to shed some light on these questions and thereby show how, with respect to the perception of three-dimensional space, the gap between the description of its physiological mechanisms and its representation in human consciousness can be overcome.

To approach the solution of the efficacy of non-spatial cues of space, it makes sense to begin not with the complex set of cues of human spatial vision, but with a simpler and more demonstrative example of the spatial behavior of one of the highly organized arthropods – the scorpion, which lives on southern sandy soils.

The literature describes the results of a cycle of behavioral, psychophysical, and neurophysiological studies that shed light on how the scorpion, living on sandy soils, catches its prey by an accurate targeted jump when the prey lands at various distances from itself (Frolov, 2002).

From physics it is known that the fall of an object onto sandy soil causes two types of propagating wave vibrations – Rayleigh surface waves and deep compression waves. Surface waves propagate at a lower speed (40–50 m/s) than compression waves (120–200 m/s). It turned out that the scorpion's vibration sensitivity organs detect these different types of waves caused by the prey landing on the sand. The so-called slit sensilla respond to Rayleigh waves, and sensory hairs respond to compression waves. The distance to the target is determined by the magnitude of the delay between these two responses. Since the difference in the arrival time of the two waves at the scorpion's sense organs regularly depends on the distance they have traveled from their source, it serves as a reliable determinant of the distance to that source, i.e., to the prey. But in order to use this temporal difference between the occurrence of two excitations in behavior, the scorpion's nervous system must have neurons that are tuned to this difference, superposed on the first layer of vibration receptors. The necessity of their existence follows from the general physiological theory of detector neurons. The astonishing accuracy of the neuronal system is striking: based on the difference in arrival time of two successive waves at the vibration receptors, it precisely "computes" the distance to their source, and then sends precisely dosed commands to the motor organs, causing muscle contractions of the animal's limbs of different strengths. And different strengths of muscle contractions lead to the actual recovery of the distance to the prey in the particular length of the scorpion's jump (Frolov, 2002).

From the above, we can conclude that the difference in the arrival time of the two waves, surface and deep, at the scorpion's vibration receptors is undoubtedly a reliable cue of the distance to the prey that has landed on the sand. At the same time, a more important and fundamental conclusion may be that this difference is a function of the distance that two waves having different propagation speeds travel from their point of origin to the moment they meet the insect's receptors, $T_2 - T_1 = F(\text{distance})$, and that this function is precisely reflected in the receptors and nervous system of the scorpion.

The distance function is reflected by the scorpion's nervous system in two successive stages. First, on the surface of the vibration receptors, two separate foci of excitation arise sequentially with a certain delay. Then a new layer of detector neurons, selectively tuned to detect a particular specific magnitude of the temporal delay of these two excitations, must determine which particular magnitude occurred in each specific case. Finally, based on this magnitude, the real distance to the prey is again recovered in the length of the animal's jump. This is possible because the difference $T_2 - T_1$, detected by the detectors in the scorpion's central neurons, must be translated into a strictly distance-proportional strength of muscle contractions of the animal's limbs. The specific mechanism of such translation is unknown today. Its study will have to reveal how, specifically with respect to spatial perception and spatial behavior, that coordination of movements with sensation, which according to Sechenov (1947) is the essential function of the psyche, is carried out.

In the relatively simple nervous system of the scorpion, an ensemble of excitation of detector neurons specific to each distance can be assigned to the function of each particular distance to the prey. And the totality of all distance detector neurons present in the nervous system can be regarded as a "neural embodiment" of all practically used distances to the prey, i.e., as a "neural embodiment" of the objective three-dimensional space accessible to the scorpion.

Let us now turn to visual space perception in humans.

Currently, the cues of space perception are divided into visual (features of retinal images) and non-visual (features of proprioceptive sensations during accommodation of the lens and convergence of the eyes).

Visual cues are divided, on one basis, into monocular and binocular, and on another basis, into static and dynamic. Static cues occur when the eyes are stationary, while dynamic cues arise

during movements of the observer's eyes and head.

Let us briefly list the main firmly established cues that provide visual perception of space (depth, remoteness, distances).

Monocular visual static cues:

- Linear perspective
- Aerial perspective
- Partial occlusion of a more distant object by a nearer one
- Brightness and shading
- Surface texture gradient

Binocular visual static cue:

- Binocular parallax, or binocular disparity

Monocular visual dynamic cue:

- Motion parallax

Monocular and binocular non-visual dynamic cues:

- Degree of accommodation of the lens
- Degree of convergence of the eyes

If we look at the visual cues of space, it is not difficult to see that they are based on the registration by the visual system of certain functions of distance that arise on the retina due to differences in the projections of objects at different distances.

Linear perspective is a function of distance as a system of progressively and proportionally decreasing size of retinal images of objects as they recede from the observer's eyes.

Binocular parallax is a function of distance expressed through the magnitude of differences in the images of objects on the retinas of the right and left eyes, which is proportional to the distance of objects from the observer. At the level of the eye's receptors, this function appears as binocular disparity, and at higher levels of the visual system it is represented in the excitation of disparity detectors described in the literature, selectively tuned to its various values (Schiffman, 2001; Sokolov, 2003). The neurophysiological mechanism of binocular spatial vision is quite complex in all its details, but the most general principle of binocular perception of depth and distance is simple and consists in the fact that one quite definite function of distance is used here.

Other visual distance cues are based on the visual system's use of other distance functions formed on the retina by differences in the projections of objects at different distances. Some of these functions are relatively simple, others are more complex.

Aerial perspective, occlusion of a more distant object by a nearer one, surface texture gradient, brightness and shading – these are relatively not very complex functions of distance and depth, reflected by retinal receptors and higher levels of the visual system. Apparently, the most complex function is motion parallax. It is a function of distance that arises during movements of the observer's head. The distance function consists in the fact that the retinal projections of objects closer to the eye, when the eyes and head move, are shifted proportionally more strongly than projections of more distant objects. Secondly, the projections of objects located closer and farther than the fixation point move in different directions.

Non-visual cues of spatial depth can also be regarded as certain functions of distance, since the tension of the muscles that regulate the curvature of the lens and ensure their convergence, and accordingly the magnitude of the resulting proprioceptive sensations, are strictly proportional to the distance to the object fixed by the eyes.

By analogy with the disparity detector neurons that selectively respond to different values of retinal binocular parallax, it is logical to assume the existence of similar central detectors for all other distance functions that arise during the perception of objects on the two-dimensional spaces of the retina and in the primary sensorimotor areas of the cortex.

Since different distance cues are always simultaneously involved in real processes of object perception, the central parts of the brain must integrate excitations from different detector systems of distance. In these integrative formations of the brain, the entire space accessible to the perception of the given organism must be "embodied": each point of the surrounding space should correspond to a strictly defined group of selectively tuned distance detectors in these formations (Sokolov, 2003). A factual confirmation of such correspondence can be considered the neurons described in the literature that selectively respond to a specific location of objects in the visual field. Confirmation of the actual existence of a special brain area in humans, the activity of whose neurons "embodies" objective three-dimensional space, may be clinical data on the so-called neglect of one half of the visual field (more often the left) in local lesions of certain parts of the dorsal parietal region of the opposite hemisphere (Baars & Gage, 2007; Velichkovsky, 2006, pp. 343–345). Patients with such damage may eat only half of the food on their plate or apply makeup to only half of their face. When describing what they see in front of them, they completely ignore ("do not see," "pay no attention to") all objects located in that half of space that projects to the damaged hemisphere. The fact that it is specifically spatial perception that is lost here is proved by special tests demonstrating the ability of such patients to see

and distinguish individual objects in the "invisible" part of the visual field.

The complex hierarchically organized neuronal system for reflecting space is designed to organize the goal-directed spatial behavior of animals and humans. The central detector neurons of this system, excited by target objects located at different distances from the body of the animal or human, must send impulses of different structure and intensity to the neurons of the muscular system that perform movements. Such impulses should ensure an accurate reproduction, in the direction, intensity, and duration of movements (reaching and grasping objects, targeted jumps, approaching distant objects, etc.), of the parameters of the real objective space in which they are performed. How exactly such, in the words of Sechenov (1947), coordination of movements with sensation occurs, is not known today. That is a matter for the future.

The use of the difference in excitations on the plane of two-dimensional receptors arising from differences in the propagation speed of different wave radiations coming from objects or from differences in their points of application, which is a function of distance, appears to be a universal method, found in evolution, for reflecting the third dimension of space. As Bickerton (2009) notes, recent research has added the most intriguing data on how bees measure distances, namely that they compare the speeds at which images of the landscape cross their field of vision during flight.

This universal method of reflecting the distance and distances to objects has received an impressive concrete embodiment in the organization of the spatial behavior of bats based on echolocation (Schiffman, 2001).

The essence of echolocation is that the bat emits ultrasonic signals into the surrounding space, and its auditory system perceives both the original signals and their reflection from surrounding objects. The difference in the time of perception of the first signal and its return serves as a very accurate and reliable cue of the distance to the object, since it is a function of it. The difference in the time of occurrence of two excitations in the bat's auditory system – the first caused by the original sound, the second by the reflected sound – is registered by detector neurons selectively tuned to specific time intervals between these two receptor excitations. Altogether, this auditory and detector system is a reliable determinant of the distance from the bat's body to the surrounding objects.

In addition to bats, whose neural mechanisms of echolocation have been well studied, echolocation ability is present in dolphins and some birds. There is evidence that this distance function can be used for spatial orientation by blind people. The literature reports a striking fact: a naturally blind horsewoman, winner of many competitions, had the ability to go around corners and fit into steep turns of the track, based on perceiving the difference in arrival time of the original and reflected sounds produced by the horse's hooves (Schiffman, 2001).

The factual data obtained in studying the mechanisms of reflection of spatial depth and distance of objects in humans, scorpions, and bats show that it can be carried out on the basis of different sensory modalities. Accordingly, the "neural embodiment" of three-dimensional space in the system of specific detector neurons can be not only visual, as in humans. It can be vibrational, as in the scorpion, or auditory, as in the bat and the blind horsewoman. But in all cases, the same objective space (within the limits accessible to the sense organs of each species) is represented in different nervous systems, and equal distances to objects in all cases are reproduced (recovered, find objective expression) in the same extension (the same length) of goal-directed movements toward them.

Based on the above, we can to some extent imagine what it is like to be a bat. As is known, that is the title of a widely discussed article by Nagel (1974).

Chalmers (1996) rightly believes that the development of neuroscience methods will certainly make it possible to some extent to approach the understanding of what it is like to be a bat. He writes that neuroscience will have to find out what kind of information the bat has access to, what discriminations it can make, and how it uses this information, and that in the end we should be able to draw a detailed picture of the structure of awareness that is characteristic of the bat's cognitive system. Of course, he writes further, we will not know everything about what it is like to be a bat, but we will know not so little.

If we concretize Chalmers' (1996) words about the detailed picture of the structure of awareness that is characteristic of the bat's cognitive system in accordance with the factual data of neurophysiology, we can consider that we understand in principle how objective space is represented in its perceptual system. And this, indeed, is not so little. But we can learn even more. We could ask a blind horsewoman (or any other blind person who has mastered a similar method of orienting in space) to describe how she orients herself in space, how she represents it to herself, what sensations tell her about distances to objects and between them. Then we would have both an objective and a subjective description of the auditory form of reflection

(embodiment) of space in the observer's nervous system and, consequently, could approach even closer to understanding what it is like to be a bat.

The thesis that the previous text has been devoted to substantiating is that objective three-dimensional space receives its topical three-dimensional embodiment in the nervous system of all living beings capable of orientation in space. This embodiment is such that each point of objective external space occupied by some object corresponds to a strictly defined group of neurons of the internal psychophysiological space (Sokolov, 2003). Activation of certain groups of such neurons in response to afferentation from objects located at the corresponding point of space can cause various kinds of unconditioned, conditioned, and voluntary motor reactions directed at these objects, leading to adequate spatial behavioral interaction with those objects.

As we can see, for understanding the mechanisms of sensory perception of space and the spatial behavior of living beings based on it, no additional ideas about the subjective representation of space in consciousness are required. The facts are well described without recourse to the concept of consciousness, to the concept of conscious subjective experiences. All our own introspective experience undeniably shows that within the space close to us, we constantly perform many acts of spatial behavior, without being aware either of the acts themselves, or of the stimuli that cause them, or of their position in space. These acts are unconscious. This does not mean that they are not mental. They are acts of mental activity because they are based on the reflection of reality, on the functioning of an internal map of external three-dimensional space built in the brain. But they do not require the participation of consciousness in the sense of the givenness of external space to the subject himself. The spatial behavior of the bat is a vivid example.

It has already been said above that consciousness in the form of subjective givenness of objects to the subject is not an immanent integral property of mental images of objects. In order for the content of the psyche, represented in the system of neural brain "embodiments" of reality, to become conscious and "given to the subject," new psychophysiological processes are required compared to those that operate at the level of sensory cognition and sensory-perceptual regulation of behavior.

In psychology, ideas about such mental processes were developed in the theory of Brentano (see Yaroshevsky, 1976). According to Brentano, consciousness arises as a result of the action of special intentional mental acts coming from the subject and directed toward the object. Thanks to such acts, and only thanks to them, the images of objects represented in sensations, perceptions, and ideas become objects of consciousness.

At about the same time, in the middle of the 19th century, a similar idea received a hypothetical physiological interpretation by the German physician Kzolbe (cited in Ulrici, 1869). Kzolbe believed that the effects of the direct movement of the nerve current, caused by the action of external objects on the sense organs and coming to the corresponding brain centers, represent a kind of "image" of the external world. And when another repeated movement of the nerve current, coming from "internal" rather than external stimuli, arrives at the same brain points, then a connection of the external and our internal occurs, and that common quality of all types of human spiritual activity that is called consciousness is born. The general meaning of Kzolbe's physiological hypothesis clearly coincides with Brentano's psychological theory of consciousness (see Yaroshevsky, 1976).

At the present time, the idea of the repeated return of excitations to the brain projections of perceived signals from other parts of the brain associated with memory (hippocampus) and language areas, which is essential for the emergence of consciousness, has been developed in the theoretical conceptions of Edelman (1982, 2001) and in the experimental studies of Ivanitsky (1999, 2004). For Ivanitskii (1999, 2004), the characteristics of the late waves of the brain's evoked potential to sensory stimuli, with latencies from 150 to 200 ms, are such a correlate of the mechanisms of consciousness. These characteristics, unlike those of early evoked potential waves, directly depend on the significance of the stimulus, on its motivational meaning, and correlate with indicators of decision-making processes.

A strong argument in favor of the developed ideas is the key fact for Ivanitskii (1999) of the coincidence of the peak latencies of the late waves of the evoked potential (approximately 150 ms) and the time of occurrence of subjective sensations in humans upon the action of sensory signals (100–150–200 ms), as established in a number of experimental psychological studies. The same coincidence is noted by Edelman (1982), who, referring to the results of Libet's research, writes about the significance of the fact that the minimal 'activation period' for awareness of a near-threshold stimulus is about 200–500 ms. The same order of time (100–150 ms) characterizes the first signs of the emergence of local foci of increased excitability

of the visual cortex at the points of address of stimuli which, according to verbal instructions, become objects of a person's conscious cognitive activity. But a longer time (200–500 ms) is required for the final statistically significant local increase in excitability at these points of the visual cortex (Chuprikova, 1967, 2011, 2015).

Based on the ideas of Brentano (see Yaroshevsky, 1976), Kzolbe (see Ulrici, 1869), Edelman (1982, 2001), and Ivanitskii (1999, 2004), one must think that the phenomenal visual space given to us in our introspection should be the result of the action of the same physiological mechanisms. It should arise as a result of the integration of direct excitations in the cortical areas where the "brain embodiments" of objective three-dimensional space are formed, and repeated excitations of neurons in the same areas arising from the implementation of intentional acts of consciousness coming from the subject and directed to the objects that actually fill the external three-dimensional space.

After what has been said, a legitimate question arises: why is consciousness needed at all, if many adequate behavioral acts can be performed without its participation, solely on the basis of the general principle of "coordinating movements with sensation"? What role can and should the intentional acts of consciousness, which are based on the repeated return of excitations to the sensory-perceptual neurons of the brain in whose activity objective reality is "embodied," play in the organization of human behavior? Why is the phenomenal givenness of this reality needed?

In the most general form, the answer to this question with respect to humans is that all these processes are necessary for people to transmit to each other the contents of their mind by means of verbal (or gestural) signification of different elements of the brain's "embodiments" of reality. By exchanging verbal signs, people exchange the mental contents associated with them. Since the content of sensory-perceptual brain "embodiments" of reality under standard conditions of life and perception corresponds to that reality itself (is its neural-brain double), people, by receiving information about the psyche of other people through verbal signs, thereby receive information about the reality represented in it. And this is necessary for organizing the productive joint activity of people in the natural and social environment. But in order to signify the content of one's psyche (to connect it with specific signs), a person himself must first gain access to it. It is for this purpose that the mechanisms of the repeated return of excitations to the brain projections of perceived objects have been developed in anthropogenesis. Thanks to them, the content of the psyche, in the form of its rich phenomenal picture, is disclosed to the subject (appears before him) and, by linking its elements with specific verbal signs, can be transmitted to other people. For more details, see Chuprikova (1985, 2010, 2015).

However, one must think that the mechanism of repeated return of excitations to the sensory-perceptual areas of the brain from other areas, characteristic of humans, has more ancient evolutionary prerequisites, as is assumed by Edelman's (1982, 2001) theoretical model of brain function. It is this kind of mechanism that underlies the well-developed orienting reflexes in higher animals, which Pavlov called the "What is it?" reflexes. In the structure of orienting reflexes, one can see, first, a clear intentional directedness of the animal's psyche toward a specific object, leading to its extraction from the background and its study. Second, it has been established that this directedness, in the form of activating excitations locally addressed to the projections of the given object, is caused not by the properties of the object as such, but by internal signals of mismatch between incoming sensory afferentation and the neural model of the stimulus established in memory (Sokolov, 2003). From this we can conclude that all animals that have well-expressed orienting and, even more so, orienting-investigative reflexes possess an analogue of human consciousness, although, of course, less developed and differentiated in its content.

3. Conclusion

The approach to solving the psychophysiological problem presented in this article coincides in its main general features with the approach of Edelman (2001), who considers it necessary to draw a fundamental distinction between primary and higher-order consciousness. What Edelman calls primary consciousness is referred to in this article as sensory reflection of reality, consisting in the formation of brain "embodiments" of various objects and their properties, cognized through the sense organs, while higher-order consciousness is simply called consciousness. Edelman (2001) briefly outlines his conception by drawing a distinction, which he believes is fundamental, between primary and higher order consciousness. He explains that primary consciousness is the state of being mentally aware of things in the world – of having mental images in the present. It is what some animals that do not use special linguistic means or special means for transmitting meanings presumably possess. In contrast, higher order consciousness includes the recognition by a

thinking subject of his or her own actions or preferences. Edelman adds that we are aware that we are aware.

In Edelman's (2001) formulation, the proposed research program consists of the following: first, we must build a model for primary consciousness, then build a model for higher order consciousness on top of it, and then begin to test the connections of each with human phenomenal experience. He further states that this program must explain how primary consciousness evolved, and then show how higher order consciousness was born from it.

The implementation of such a program requires a clear logical distinction between the extended-material neural activity of the brain and the content embodied in it that relates to reality existing outside the brain. Among the tasks of concrete research on the path to implementing this program, the following can be named.

1. Detailed elucidation of what exactly the brain "embodiments" of various objects of reality and their properties, which are cognized through the sense organs and are carriers of mental awareness of things and phenomena in the world, consist of and how they are formed in phylo- and ontogenesis (physiologically, biochemically, structurally). In this article, a version of solving this problem has been considered using the example of the neurophysiological mechanisms of mental awareness of the surrounding three-dimensional space in animals and humans.

2. Identification of the specific form in which the contents of the brain "embodiments" of reality are transmitted to the central neurons of the executive organs, ensuring adaptive coordination with sensation (and, consequently, with the conditions of the surrounding world) of motor acts, as well as of many other bodily reactions (vocal imitation, secretion of digestive juices corresponding to the quantity and quality of food acting on the taste receptors of the tongue, reproduction by the skin of some animals of the color characteristics of the surface on which they are located).

3. Identification of how, during the implementation of a person's intentional acts directed at objects (which are based on the processes of repeated centrifugal arrival of excitations to the primarily excited sensory-perceptual areas of the brain), these excitations "read" the contents of the sensory brain "embodiments" of reality, the results of which find expression in the person's verbal (or gestural) reports. On this path, the problem of elucidating the physiological nature, formation, and ontogenetic development of the human self, as the agent that has access to the "embodiments" of various contents of reality being formed in the projection areas of the brain, and thereby can, through verbal (and gestural) signs, transmit these contents to other people, inevitably arises in full measure.

Highlights:

- Cartesian dualism cannot solve the psychophysiological problem; radical revision of the mins and brain concepts is needed.
- The mind is understood as a reflection of reality necessary for the regulation of behavior, while the brain is the bodily organ that has evolved to implement this function.
- A conception of unified psychophysiological processes with a dual material–ideal nature is proposed, in line with Spinoza's monism and Sechenov's theory of reflex activity.
- Consciousness does not arise immanently but rather through the recurrent return of excitations to sensory-perceptual areas of the brain (the Edelman–Ivanitsky mechanism), which provides subjective givenness and verbalization of mental content.
- Using examples of spatial reflection in scorpions, bats, and humans, it is shown how the "neural embodiments" of reality underlie spatial behavior, and how phenomenal experience of space is linked to intentional acts of consciousness.

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Перспективы решения психофизиологической проблемы: деятельность мозга, психика и явления сознания

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Резюме. Анализируется современное состояние психофизиологической проблемы. Делается вывод о справедливости мнения Ф. Крика и Т. Нагеля, что неспособность ясно раскрыть связь между психикой и деятельностью мозга свидетельствует о неадекватности наших понятий о психике, сознании и деятельности мозга и поэтому требует кардинального пересмотра их содержания. Делается попытка показать, как могут быть выработаны такие новые понятия. В основу их выработки предлагается положить сложившееся в отечественной психологии понимание психики как отражения действительности, необходимого для регуляции поведения и деятельности, а мозга – как телесного органа, взявшего на себя в эволюции осуществление этой функции. Развивается представление о мозговом "воплощении" действительности в актах ее сенсорно-перцептивного познания и о физиологических механизмах сознания, благодаря которым их содержание открывается человеку как субъекту познания и деятельности. К обсуждению привлекаются некартезианская теория рефлекторной деятельности мозга И.М. Сеченова, монистическая теория соотношения души и тела Спинозы, теория интенциональных актов сознания Ф. Брентано, концепция Дж. Эдельмана и А.М. Иваницкого о повторном приходе возбуждений к сенсорно-перцептивным областям мозга как механизме сознания. Развиваемые общие положения конкретизируются на примере рассмотрения нейрофизиологических механизмов отражения пространства и его феноменальной представленности в сознании человека.

Ключевые слова: психика, сознание, деятельность мозга, психофизиологическая проблема, теория отражения, интенциональные акты сознания

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