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NAS RK is pleased to announce that Bulletin of NAS RK scientific journal has been accepted for indexing in the Emerging Sources Citation Index, a new edition of Web of Science. Content in this index is under consideration by Clarivate Analytics to be accepted in the Science Citation Index Expanded, the Social Sciences Citation Index, and the Arts & Humanities Citation Index. The quality and depth of content Web of Science offers to researchers, authors, publishers, and institutions sets it apart from other research databases. The inclusion of Bulletin of NAS RK in the Emerging Sources Citation Index demonstrates our dedication to providing the most relevant and influential multidiscipline content to our community.

Қазақстан Республикасы Ұлттық ғылым академиясы "ҚР ҰҒА Хабаршысы" ғылыми журналының Web of Science-тің жаңаланған нұсқасы Emerging Sources Citation Index-те индекстелуге қабылданғанын хабарлайды. Бұл индекстелу барысында Clarivate Analytics компаниясы журналды одан әрі the Science Citation Index Expanded, the Social Sciences Citation Index және the Arts & Humanities Citation Index-ке қабылдау мәселесін қарастыруда. Web of Science зерттеушілер, авторлар, баспашылар мен мекемелерге контент тереңдігі мен сапасын ұсынады. ҚР ҰҒА Хабаршысының Emerging Sources Citation Index-ке енуі біздің қоғамдастық үшін ең өзекті және беделді мультидисциплинарлы контентке адалдығымызды білдіреді.

НАН РК сообщает, что научный журнал «Вестник НАН РК» был принят для индексирования в Emerging Sources CitationIndex, обновленной версии Web of Science. Содержание в этом индексировании находится в стадии рассмотрения компанией Clarivate Analytics для дальнейшего принятия журнала в the Science Citation Index Expanded, the Social Sciences Citation Index и the Arts & Humanities Citation Index. Web of Science предлагает качество и глубину контента для исследователей, авторов, издателей и учреждений. Включение Вестника НАН РК в Emerging Sources Citation Index демонстрирует нашу приверженность к наиболее актуальному и влиятельному мультидисциплинарному контенту для нашего сообщества.

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COGNITIVE STYLE "RIGIDITY-FLEXIBILITY OF COGNITIVE CONTROL" AND THE LEVEL INTELLIGENCE INDICATORS

Abstract. *Aim of the study.* The first goal of the study is to determine the relationship of the cognitive style "rigidity-flexibility of cognitive control" with the level indicators of intelligence. The second goal of this study is to identify possible relationships between "rigidity-flexibility of cognitive control" and the properties of temperament.

Materials and Methods. In this work the authors used the Wechsler Adult Intelligence Scale (WAIS), the Stroop color–word-interference task, the Questionnaire of the formal-dynamic properties of individuality (QFDPI, designed by Rusalov V.M.), and 15 heuristic tasks, 5 tasks each in figurative, logical and figurative-logical form (designed by Kulyutkin Y.N., KrutetskiyV.A., Smallian R.).

Results. The general success of solving heuristic tasks is determined by a complex of factors, which includes indicators of the flexibility of thinking, intelligence and "intellectual" temperamental properties.

The flexibility of thinking is correlated with the level characteristics of intelligence in such a way that high levels of verbal, non-verbal and general intelligence correspond to the flexibility of cognitive control, low values of indicators of intelligence correspond to the pole of rigidity of this cognitive style; intellectually developed subjects are more flexible.

Conclusions. The cognitive style of "rigidity-flexibility of cognitive control" can be considered as a meta-ability. This cognitive style correlates with indicators of temperament and intelligence, and to a certain extent determines the success of solving heuristic tasks.

Keywords: rigidity-flexibility of cognitive control, cognitive style, intelligence, temperament, heuristic tasks.

Introduction. This article is devoted to the study of the nature of the flexibility of creative thinking as the ease of figurative-logical mutual transitions. Vekker's L.M.[1] concept of thinking is fundamental for us, in this concept the specificity of the functioning of the living process of thinking is revealed. He considers the interaction of the figurative and logical components of the thinking process not so much from the genetic as from the functional point of view, and these components are denoted by the concept of "alphabets" of thinking. The psychological specificity of the thought process is created by the obligatory participation and the continuous interaction of both display methods - figurative and logical.

Thus, Vekker L.M. proposed a bipolar model of thinking, whose poles are a figurative and logical "alphabet". The living process of thinking is a continuous interaction of these "alphabets". This interaction or the transfer of information from one "alphabet" of thinking to another is carried out very quickly and so far is not amenable to experimental registration. Therefore, we made the assumption that the dynamics of the process of continuous interaction of the two main components of thinking can be expressed in the cognitive style of "rigidity-flexibility of cognitive control". Indeed, the essence of this style is the characteristics of switching the subject from one information alphabet to another or figurative-logical

translation of information. Style characteristics in our work present the features of the mutual transition of two thinking alphabets.

1. We believe that the flexibility of thinking is an element of mental ability, therefore, on the one hand, it must be connected with the structure and level of intelligence, and, on the other hand, it must be determined by the makings of the individual. We stand on the position of the anthropological approach of B.G. Ananiev, i.e. we see in thinking the manifestation of the abilities of the subject as a whole, we are looking for the determinants of thinking in the structural characteristics of the individual. We believe that flexibility is organically integrated into the mechanisms of cognition by the personality of the surrounding world. Therefore, the flexibility of thinking as an intellectual process is necessarily associated with the structure of intelligence.

2. At the individual level, we take some properties of temperament as the alleged determinants of the flexibility of thinking that characterize its dynamic side. Since the flexibility of thinking is an individual stylistic characteristic, and the carrier of the primary stylistic characteristics is temperament, therefore, flexibility must be temperamental. If we consider the flexibility of thinking as a special kind of private ability, then the question should be raised about the inborn qualities on which it is based in its development.

In the works of V.M. Rusalov [2-4] the relationship between the basic properties of the nervous system, temperament and abilities are indicated in a "chain of inborn qualities": "the inborn qualities of the first level (the properties of the nervous system)" - "the inborn qualities of a second-level (temperament)" - "abilities" (including creative ones).Following V.M. Rusalov, our scheme is as follows: "mobility of the nervous system"[this is discussed by us in article 5] - "“intellectual” temperamental properties” - "flexibility of thinking". One of such special forms of flexibility is flexibility as the ability to quickly and adequately switch from one to another “alphabet” of thinking, presented in a cognitive style - “rigidity-flexibility of cognitive control”. Asserting that the cognitive style can be considered as an ability, we rely on the work of M.A. Kholodnaya, who believes that “cognitive styles are abilities if the latter are interpreted as a subjective tool for organizing intellectual activity” [6, p. 68]. Based on the concept of M.A. Kholodnaya [7], we consider the cognitive style, representing the flexibility of thinking, as an ability.

So, in our work, the flexibility of thinking as an ability is considered in connection with the structure of intelligence and temperamental properties.

Based on the foregoing, we assume that:

I. The flexibility of thinking is correlated with the level characteristics of intelligence.

II. Flexibility is associated with the properties of temperament.

III. The overall success of solving problems is determined by a set of factors, including indicators of the flexibility of thinking, intelligence and temperamental properties.

Independent variables are flexibility of thinking, level characteristics of intelligence, and temperamental properties.

The dependent variable is the success of solving creative (heuristic) tasks.

Methods. Sample: The sample comprised students from Al-Farabi Kazakh National University (N=92 (59 females and 33 male), average age = 23.5 years).

Test procedures:

1. The Wechsler D. test [8] for determining the individual level of development of general, verbal and non-verbal intelligences;

2. The Stroop color–word-interference task [7];

This test was developed for the diagnosis of cognitive style rigid-flexible cognitive control. "This cognitive style characterizes the degree of subjective difficulties in changing the different ways of processing information in a situation of cognitive conflict. Rigid control indicates difficulties in the transition from verbal functions in sensory-perceptual due to the low degree of automation, while flexible indicates the relative ease of this transition due to the high degree of automation" [7, p.56].

Three cards are sequentially imposed to the subject. The first card contains words for names of four colors (the subject is required to read the words as soon as possible) (W-Card). The second card contains multicolored stars of the same colors (the subject must name the color of the stars as quickly as possible) (C-Card). The third card contains color names that are written in different colors, and the name does not

match the color of the ink. For example, the word "red" written in yellow ink (the subject must name the color of the written words' ink as quickly as possible) (CW-card).

The main index (i.e. indicator of interference) is the time difference in performing CW-card (color of the word) and C-card (color). The greater the cognitive control rigidity, the greater the interference. Conversely, low interference indicators suggest the flexibility of cognitive control.

On the Stroop test, we calculate an additional indicator of "Verbal", proposed by Broverman D. This is a quotient between the performance time of the 2nd card (C-Card) and the 1st card (W-Card). High values of this indicator are evidence of the predominance of verbal (semantic-conceptual) methods of processing information; while low values reflect the predominance of sensory-perceptual (perceptual-motor) methods of processing information [7].

The Stroop Test is commonly employed in experimental psychological studies of emotions, personality and creativity [9-15]. Moreover, activation of the left anterior division of the cerebral cortex was experimentally demonstrated during the performance of the Stroop test [16-20].These findings suggest the possibility of using the Stroop test to diagnose mental flexibility.

3. The Questionnaire of the formal-dynamic properties of individuality(QFDPI) by Rusalov V.M. [21];

The questionnaire contains 150 points and allowsto measure 4 basic formal-dynamic properties of personality, such as

1) ergicity - "latitude-narrowness" of afferent synthesis, or the degree of tension of the interaction of the organism with the environment;

2) plasticity - the degree of ease (difficulty) of switching from one behavior program to another;

3) speed - the degree of speed of execution of a particular behavior program;

4) emotionality.

For each formal-dynamic property, it is proposed to distinguish three aspects: psychomotor, intellectual, and communicative. Consequently, as a result of the questionnaire, 12 relatively independent latent variable properties are distinguished that have varying degrees of individual severity or intensity. Each property can have values from 12 to 48 points.

For our work, of particular importance are the manifestations of the four main properties of temperament (ergicity, plasticity, speed and emotionality) mainly in the "intellectual" sphere. Since it is logical to assume that they are the most "related" to the flexibility of thinking.

4. To diagnose the success of solving problems, we compiled a battery of 15 heuristic tasks that were presented to the subjects in 1) figurative, 2) logical and 3) figurative-logical form (designed by Kulyutkin Y.N., Krutetskiy V.A., Smallian R.). The overall success rate for solving all problems was calculated [22-26].

Results. To check the existence of interconnections of the flexibility of thinking with the level characteristics of the intellect, temperamental properties and the success of solving creative (heuristic) tasks, we performed a Pearson correlation analysis using the SPSS 11.5 program. The results are shown in table 1.

Table 1 - Correlation analysis of the relationship of indicators of intelligence, flexibility of thinking, "intellectual" temperamental properties and the success of solving heuristic tasks

	Nonverbal IQ	General IQ	Gradient of IQ	Flexibility	Logical tasks	Figurative tasks	Figurative-logical tasks	Overall success rate	Temperamental ergicity	Temperamental plasticity	Temperamental speed	Temperamental emotionality
Verbal IQ	,446	,917	,684	-,269	,566	,643	,701	,730	,275	,348	,379	-,228
Nonverbal IQ	1	,756	-,347	-,252	,517	,604	,578	,633		,303	,303	-,261
General IQ		1	,344	-,308	,632	,734	,753	,803	,267	,387	,412	-,280
Gradient of IQ			1	,294			,264	,250				
Flexibility				1	-,294	-,366	-,260	-,339			-,231	
Overall success rate								1	,205	,342	,256	
All correlations are significant at the 0.05 and 0.01 levels.												

The following parameters were correlated: indicators of verbal, non-verbal, general intelligence (the Wechsler D. test); an indicator of the flexibility of thinking and an indicator of the dominant way of processing information (Stroop test); indicators of "intellectual" ergicity, plasticity, speed, emotionality and an index of "intellectual" activity, summarizing all of the listed "intellectual" temperamental properties (QFDPI by Rusalov V.M.); the success of solving figurative, logical and figurative-logical tasks, and an indicator of the overall success rate. We used 5 tasks with figurative, 5 tasks with logical and 5 tasks with figurative-logical representation of conditions. The overall success rate is the sum of the points for solving all types of heuristic tasks.

I) Significant positive correlations were found between the flexibility of thinking and level indicators of intelligence (verbal, non-verbal and general). It should be clarified that the minus sign in front of the indicator of rigidity/flexibility of cognitive control indicates precisely the pole of flexibility of this cognitive style. The high rates of verbal, non-verbal and general intelligence correspond to the flexibility of cognitive control, the low values of the indicators of intelligence correspond to the pole of rigidity of this cognitive style. Thus, intellectually more advanced subjects are more flexible.

II) At the level of the entire sample, a correlation between the indicator of the flexibility of thinking and the "intellectual" temperamental speed was revealed. High speed of mental processes is positively associated with flexibility, and the slowdown in operations is associated with rigidity.

III) According to the results of the correlation analysis, the overall success of solving problems, as we expected, is determined by a complex of factors, including intelligence indicators, flexibility of thinking, and "intellectual" temperamental properties. All correlation coefficients of overall success with the indicated characteristics are statistically significant at the level of $p < 0.01$.

I. To clarify the **relationship of the flexibility of thinking with level indicators of intelligence**, we sequentially performed a Pearson correlation analysis among 3 subgroups of subjects with low, medium, and high indicators of general intelligence. We turn to the description and interpretation of the data obtained as a result of this correlation analysis.

The indicators of the Stroop test, the overall success of solving tasks and the "intellectual" temperamental properties were correlated. The results of the correlation analysis of data according to the Pearson method using the SPSS 11.5 program of three subgroups of subjects with low, medium, and high levels of general intelligence are presented in table 2.

Table 2 - Correlation analysis of data from subgroups of subjects with low, medium and high levels of general intelligence

		Flexibility	Overallsuccessrate	Indicatorof "Verbal"
Low level of general intelligence (n=31)	Verbal IQ	-0,080	0,102	-0,183
	Nonverbal IQ	-0,008	**0,361***	0,040
	General IQ	-0,073	**0,367***	-0,134
	Gradient of IQ	-0,042	-0,186	-0,136
	Temperamental Ergicity	0,126	-0,186	-0,255
	Temperamentalplasticity	-0,059	-0,020	0,052
	TemperamentalSpeed	-0,014	-0,286	0,164
	TemperamentalEmotionality	**-0,388***	**0,377***	0,097
Medium level of general intelligence(n=38)	Verbal IQ	0,198	**0,408***	0,165
	Nonverbal IQ	-0,212	0,080	**-0,357***
	General IQ	0,002	**0,479****	-0,227
	Gradient of IQ	0,230	0,186	0,292
	Temperamental Ergicity	0,097	0,240	-0,046
	Temperamentalplasticity	0,176	0,121	**-0,377***
	TemperamentalSpeed	-0,257	0,052	**-0,422****
	TemperamentalEmotionality	0,186	0,012	**0,454****
High level of general intelligence (n=23)	Verbal IQ	0,017	0,137	0,040
	Nonverbal IQ	0,075	-0,063	0,313
	General IQ	0,028	0,187	0,183
	Gradient of IQ	-0,026	0,122	-0,127
	Temperamental Ergicity	0,064	0,068	0,270
	Temperamentalplasticity	0,049	0,163	0,151
	TemperamentalSpeed	-0,053	-0,239	-0,126
	TemperamentalEmotionality	-0,080	0,081	-0,333
* - correlations are significant at the level of 0.05; ** - correlations are significant at the level of 0.01				

1) Based on the data of the correlation analysis of the subgroup of subjects with low general intelligence (31 people), it follows that if the level of general intelligence is **low** (on average 105 points), then the overall success of solving tasks is associated with indicators of non-verbal and general intelligence, as well as "intellectual" temperamental emotionality. No interconnections of flexibility with level indicators of intelligence were found. Correlation between flexibility and temperamental emotionality was found.

2) The data of the correlation analysis of a subgroup of subjects with average general intelligence (38 subjects) indicate that, with an **average level of general intelligence** (115 points), there are significant relationships between the overall success of solving problems with indicators of verbal and general intelligence. No connection was found between success in solving tasks with indicators of the gradient of intelligence, flexibility of thinking, and "intellectual" temperamental properties. No interconnections of flexibility with level indicators of intelligence were found.

However, negative correlations between the Indicator of "Verbal" (obtained by the Stroop test) and the nonverbal intelligence index and the "intellectual" temperamental properties of plasticity and speed were found. A positive correlation of the Indicator of "Verbal" with temperamental emotionality was found.

3) A correlation analysis of a subgroup of subjects (23 subjects) with **high level of general intelligence** (124 points on average) also indicates that the overall success of solving tasks has no significant connections with indicators of intelligence, flexibility, and "intellectual" temperamental properties. No interconnections of flexibility with level indicators of intelligence were found.

II. At the level of the entire sample, a correlation between the indicator of the flexibility of thinking and the "intellectual" temperamental speed was revealed.

A connection between flexibility and temperamental emotionality is found with a low level of intelligence. The correlations of the Indicator of "Verbal" with temperamental plasticity, speed and emotionality were found with an average level of intelligence.

III. The interconnections of the flexibility of thinking, intelligence indicators, and "intellectual" temperamental properties for **3 types of general (total) success in solving heuristic tasks**: low (15-25 points), medium (25-35 points) and high (35-45 points) were identified.

19 subjects were in the subgroup with low overall success, 44 subjects were in the subgroup with medium overall success, and 29 subjects were in the subgroup with high overall success. Correlation analysis was carried out according to the Spearman method using the SPSS 11.5 program. The results of the analysis are shown in table 3.

Table 3 - Correlation analysis of the relationship of the flexibility of thinking, indicators of intelligence and "intellectual" temperamental properties with 3 types of overall success in solving heuristic tasks

	Low overall success			Medium overall success				High overall success		
	Figurative tasks	Figurative-logical tasks	Overall success rate	Logical tasks	Figurative tasks	Figurative-logical tasks	Overall success rate	Logical tasks	Figurative tasks	Overall success rate
Verbal IQ						,332	,362	,514	,405	,516
Nonverbal IQ				,389	,391	,427				
General IQ						,439	,454	,405	,392	,531
Flexibility								-,405		
Indicator of "Verbal"				,365			,361			
Temperamental ergicity		-,540	-,507							
Temperamental plasticity	,531									
Temperamental emotionality		,602	,645							
All correlations are significant at the 0.05 and 0.01 levels										

1) From table 5 it follows that the low overall success in solving heuristic tasks is associated exclusively with indicators of the temperamental properties of ergicity and emotionality in the intellectual

sphere. Moreover, the connection between overall success and the indicator of temperamental "intellectual" ergicity is negative.

2) The medium overall success in solving heuristic tasks is associated with all indicators of intelligence and an Indicator of "Verbal" (high values of this indicator are evidence of the predominance of verbal (semantic-conceptual) methods of processing information).

3) The high overall success in solving heuristic tasks is associated with parameters of verbal and general intelligence. Undoubtedly, intellectual indicators are most important for achieving a high level of success in solving tasks. At the same time, a correlation was found between the success of solving logical tasks and the flexibility of cognitive control.

Discussion. The experimental study was aimed at solving the question of the interaction of the flexibility of thinking (diagnosed by the Stroop test) with the level characteristics of intelligence (D. Wechsler test), temperamental properties (QFDPI, designed by Rusalov V.M.) and the success of solving creative (heuristic) tasks.

We consider it necessary to briefly consider the whole variety of results obtained in this study in order to draw the main conclusions on their basis. In order to maintain the structure in the presentation of conclusions, we will move in accordance with the 3 hypotheses put forward.

I. Correlation analysis of the data of the entire sample made it possible to detect significant connections between the flexibility of thinking and level indicators of intelligence (verbal, non-verbal, and general intelligence). These data are consistent with psychological studies that show that age-adjusted scores for the Stroop Color-Word Test were found to be more strongly associated with Mayo age-adjusted WAIS-R Full Scale IQ scores[27]; executive functions (The Stroop Color and Word Test) are significantly related to intelligence [28]; IQ correlates with cognitive control abilities, such as interference suppression, as measured with experimental tasks like the Stroop task; people with higher IQs also resolve the interference Stroop tasks better [29].

To identify the links between the flexibility of thinking and level indicators of intelligence, a correlation analysis of 3 subgroups of subjects with low, medium and high levels of general intelligence was carried out.

1) With a low level of general intelligence, the success of the subject in solving heuristic tasks is ensured by non-verbal and general intelligence, as well as "strong emotional feelings about the discrepancy between the expected and actual result of mental work, strong anxiety about work related to mental stress" [21, p. 26] (characteristics of high values of temperamental emotionality in the intellectual sphere according to V. Rusalov).

2) With an average level of general intelligence, the success of the subject in solving heuristic tasks is ensured by verbal and general intelligence. The most interesting negative correlations we have obtained here are the Indicator of "Verbal" with nonverbal intelligence, temperamental plasticity, and speed; and a positive correlation of the Indicator of "Verbal" with temperamental emotionality.

According to Kholodnaya M.A., the lower the Indicator of "Verbal", the more coordinated (integrated) are the main "languages" of information processing (figurative and verbal) [7, p. 100]. Therefore, high values of nonverbal intelligence and the temperamental properties of plasticity and speed in the intellectual sphere are accompanied by greater integration of the main "languages" of information processing. A positive correlation between the Indicator of "Verbal" and the indicator of "intellectual" temperamental emotionality means that "strong emotional experience about the discrepancy between the expected and actual result of mental work, strong anxiety about work related to mental stress" [21, p. 26] (characteristics high values of emotionality according to V. Rusalov) is accompanied by the disintegration of the main "languages" of information processing. The regularity found is in good agreement with the Yerks-Dodson law. With an increase in the temperamental property of emotionality in the intellectual sphere (similar to an increase in motivation), the integration of "languages" of information processing decreases.

3) With a high level of general intelligence, the success of the subject in solving heuristic tasks does not have significant connections with indicators of intelligence, flexibility and "intellectual" temperamental properties. In this case, we can assume that in conditions of a high level of general intelligence, indicators of flexibility and "intellectual" temperamental properties lose their significance.

That is, the correlation analysis of subgroups of subjects with different levels of general intelligence (low, medium, high) did not reveal any definite correlations of the indicator of flexibility of thinking with the level characteristics of general intelligence. This means that the hypothesis that the flexibility of thinking is correlated with the level characteristics of intelligence does not find its experimental confirmation in these subgroups. However, when analyzing the data of the entire sample (table 1), connections between the flexibility of thinking and indicators of general intelligence were found. This can be explained by the fact that a decrease in the units of analysis in this case led to a masking of the existing relationships observed between the flexibility of thinking and level indicators of intelligence when analyzing the data of the entire sample. Also, this may indicate that the connections between the flexibility of thinking and the level characteristics of intelligence are not constant and unambiguous, but rather situational, manifesting themselves in certain conditions (for example, at the level of the entire sample and, as will be seen later, in conditions of a significant intelligence gradient).

II. Based on all the obtained experimental data, the following correlations between the indicators of temperament properties and the cognitive style "rigid-flexible cognitive control" were identified:

1) At the level of the entire sample, a correlation between the indicator of the flexibility of thinking and the "intellectual" temperamental speed was revealed.

2) A connection between flexibility and temperamental emotionality is found with a low level of intelligence. The correlations of the Indicator of "Verbal" with temperamental plasticity, speed and emotionality were found with an average level of intelligence.

III. In our study, it was confirmed that the overall success of solving problems is determined by a set of factors, including indicators of the flexibility of thinking, intelligence and temperamental properties. This is consistent with the data of other authors that divergent thinking is associated with higher attentional flexibility [14]; participants scoring high on test for creative thinking showed better indexes of cognitive control than participants with lower scores [15]; creativity was found to be correlated with inhibition defined either by performance in the Stroop task [30]; cognitive flexibility predicted academic achievement(reading, mathematical and writing skills) [31].

Analysis of the data in table 3 allows us to do the following analysis:

1) Low overall success in solving problems is associated with "a low level of intellectual capabilities, unwillingness of mental stress, low involvement in the process associated with mental activity" (characteristics of low values of ergicity properties in the intellectual sphere according to V. Rusalov [21, p.24]), on the one hand, and "strong emotional feelings about the discrepancy between the expected and actual result of mental work, strong anxiety about work related to mental stress" (characteristics of high values of the properties of emotionality in the intellectual sphere according to V. Rusalov [21, p.26]) on the other. Apparently, we can make the assumption that the low level of success in solving problems is provided mainly by "intellectual" temperamental properties.

2) The average level of success in solving heuristic problems is achieved by increasing indicators of verbal, non-verbal and general intelligence, on the one hand, and a greater bias in the Indicator of "Verbal" in the direction of verbal (semantic-conceptual) methods of processing information, on the other.

3) High rates of overall success in solving heuristic problems are associated exclusively with the parameters of verbal and general intelligence. Undoubtedly, intellectual indicators are most important for achieving a high level of success in solving problems.

The biases we are tracking are interesting: low success in solving problems is associated with "intellectual" temperamental properties; average success in solving problems is associated with indicators of intelligence and flexibility of thinking (Indicator of "Verbal"); and high success in solving problems is associated exclusively with indicators of intelligence. The fact found, apparently, indicates that different levels of success are provided by different structural elements of human personality, which is completely logical.

Conclusions and future research. Based on the analysis of the above results, we came to the following conclusions:

1. The flexibility of thinking is correlated with the level characteristics of intelligence in such a way that high levels of verbal, non-verbal and general intelligence correspond to the flexibility of cognitive control, low values of indicators of intelligence correspond to the pole of rigidity of this cognitive style. Consequently, intellectually developed subjects are more flexible.

2. The connections of the flexibility of cognitive control with indicators of the properties of temperament in the "intellectual" sphere are established.

3. The overall success of solving heuristic problems is determined by a set of factors, including indicators of the flexibility of thinking, intelligence and "intellectual" temperamental properties.

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«ТАНЫМДЫҚ БАҚЫЛАУДЫҢ РИГИДТІЛІГІ-ИКЕМДІЛІГІНІҢ» КОГНИТИВТІК СТИЛІ ЖӘНЕ ИНТЕЛЛЕКТІНІҢ ДЕҢГЕЙЛІК КӨРСЕТКІШТЕРІ

Аннотация. Зерттеу мақсаты. Зерттеудің бірінші мақсаты «танымдық бақылаудың ригидтілігі-икемділігінің» когнитивті стилі мен интеллектінің деңгейлік көрсеткіштерімен өзара байланысын анықтауға қатысты болып келеді.

Зерттеудің екінші мақсаты «танымдық бақылаудың ригидтілігі мен икемділігі» және темперамент қасиеттерінің арасындағы ықтимал өзара қатынастарды анықтау негізінде тұжырымдалды.

Әдістер. Зерттеу жұмысында авторлар ересектерге арналған Векслердің интеллект тестін (WAIS), Струптың «Сөздік-түстер интерференциясы» тестін, жеке адамның формальды-динамикалық қасиеттерін анықтауға арналған сауалнама (QFDPI, В.М. Русалов әзірлеген) және 15 эвристикалық тапсырма пайдаланды: қатысушыларға әрқайсысы 5 тапсырмадан тұратын бейнелік, логикалық және мәнерлілогикалық нысандағы тапсырма берілді (Кулюткин Ю.Н., Крутецкий В.А., Смаллиан Р.).

Нәтижелер. Эвристикалық мәселелерді шешудің жалпы жетістігі факторлар кешені негізінде анықталады, оған ойлау икемділігі, интеллект және «интеллектуалды» темпераменттік қасиеттер кіреді.

Ойлау икемділігі интеллектінің деңгейлік сипаттамаларына сәйкес келеді, яғни вербалды, бейвербалды және жалпы интеллектінің жоғары деңгейлері когнитивті бақылау икемділігіне, ал интеллектінің төменгі көрсеткіштері осы когнитивтік стильдің ригидтілік полюсіне сәйкес келеді, сондықтан интеллекті жақсы дамыған адамдар аса икемді болып келеді.

Қорытынды. Когнитивті стильдің «танымдық бақылаудың ригидтілігі-икемділігін» мета-қабілет ретінде қарастыруға болады. Бұл когнитивті стиль темперамент пен интеллект көрсеткіштеріне байланысты және белгілі бір деңгейде эвристикалық тапсырмаларды шешудің жетістігін анықтайды.

Түйін сөздер: танымдық бақылаудың ригидтілігі-икемділігі, когнитивтік стиль, интеллект, темперамент, эвристикалық тапсырмалар

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КОГНИТИВНЫЙ СТИЛЬ «РИГИДНОСТЬ-ГИБКОСТЬ ПОЗНАВАТЕЛЬНОГО КОНТРОЛЯ» И УРОВНЕВЫЕ ПОКАЗАТЕЛИ ИНТЕЛЛЕКТА

Аннотация. *Цель исследования.* Первая цель исследования заключается в определении взаимосвязей когнитивного стиля «ригидность-гибкость познавательного контроля» с уровневыми показателями интеллекта.

Вторая цель данного исследования заключается в выявлении возможных взаимоотношений между «ригидностью-гибкостью познавательного контроля» и свойствами темперамента.

Методы. В этой работе авторы использовали тест интеллекта Векслера для взрослых (WAIS), тест «Словесно-цветовой интерференции» Струпа, опросник формально-динамических свойств индивидуальности (QFDPI, разработанный Русаловым В.М.) и 15 эвристических заданий: по 5 заданий, предоставленных испытуемым в образной, логической и образно-логической форме (Кулюткин Ю.Н., Крутецкий В.А., Смаллиан Р.).

Результаты. Общая успешность решения эвристических задач определяется комплексом факторов, который включает показатели гибкости мышления, интеллекта и «интеллектуальных» темпераментных свойств.

Гибкость мышления соотносится с уровневыми характеристиками интеллекта таким образом, что высокие уровни вербального, невербального и общего интеллекта соответствуют гибкости когнитивного контроля, низкие значения показателей интеллекта соответствуют полюсу ригидности этого познавательного стиля; интеллектуально развитые люди более гибки.

Заключение. Когнитивный стиль «ригидность-гибкость познавательного контроля» можно рассматривать как мета-способность. Этот когнитивный стиль соотносится с показателями темперамента и интеллекта и в определенной степени определяет успешность решения эвристических задач.

Ключевые слова: ригидность-гибкость познавательного контроля, когнитивный стиль, интеллект, темперамент, эвристические задачи.

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