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СПІВВІДНОШЕННЯ ТИПІВ ЕМОЦІЙНОЇ ЗРІЛОСТІ З ДАНИМИ СХИЛЬНОСТІ ДО ОБМАНУ ПРИ ВИКОРИСТАННІ ПОЛІГРАФНОГО МЕТОДУ В ПСИХОЛОГІЇ

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У статті представлені результати емпіричного дослідження взаємозв'язку показників емоційної зрілості та даних схильності до обману. Розкрито структуру і особливості емоційної зрілості та узагальнено дані про особливість емоційної зрілості в юнацькому віці і методи її діагностики. Зазначено, що основними компонентами емоційної зрілості виступають особливості емоційної експресивності, емоційної саморегуляції та емпатії, які мають специфічні ознаки на особистісному та міжособистісному рівнях прояву. Побудована і проведена програма поліграфного дослідження особистісної схильності до обману в юнацькому віці. Статистичний аналіз отриманих результатів дозволив знайти значущі кореляції які вказують на те, що, чим вище рівень емоційної зрілості тим вище схильність до обману і навпаки. Виходячи з наявності кореляційних зв'язків в структурі емпатійного типу отримані високі взаємозв'язки показників схильності до обману з показниками емоційної зрілості, що може вказувати на ймовірнісну оцінку схильності емпатійного типу до обману.

Ключові слова: емоційна зрілість, схильність до обману з використанням поліграфу, типи емоційної зрілості, взаємозв'язки типів емоційної зрілості та схильності до обману.

Косьянова Е.Ю. Соотношение типов эмоциональной зрелости с данными склонности к обману при использовании полиграфного метода в психологии/ Южноукраинский национальный педагогический университет им. К.Д. Ушинского, Украина, Одесса

В статье представлены результаты эмпирического исследования взаимосвязи показателей эмоциональной зрелости и данных склонности к обману. Раскрыта структура и особенности эмоциональной зрелости, обобщены данные об особенностях эмоциональной зрелости в юношеском возрасте и методы ее диагностики. Указано, что основными компонентами эмоциональной зрелости выступают данные эмоциональной экспрессивности, эмоциональной саморегуляции и эмпатии, которые имеют специфические признаки на личностном и межличностном уровнях проявления. Построена и проведена программа полиграфного исследования личностной склонности к

обману. Статистический анализ полученных результатов позволил найти значимые корреляции которые указывают на то, что, чем выше уровень эмоциональной зрелости тем выше склонность к обману и наоборот. Исходя из наличия корреляционных связей в структуре эмпатийного типа получены высокие взаимосвязи показателей склонности к обману с показателями эмоциональной зрелости, что может указывать на вероятностную оценку склонности эмпатийного типа к обману.

Ключевые слова: эмоциональная зрелость, склонность к обману с использованием полиграфа, типы эмоциональной зрелости, взаимосвязи типов эмоциональной зрелости и склонности к обману.

Kosyanova O. U. Ratio of types of emotional maturity to the data on susceptibility to deception when using a polygraph method in psychology / South Ukrainian National Pedagogical University after K D Ushinsky, Ukraine, Odessa

The article presents the results of empirical study of the relationship between emotional maturity indicators and the data on susceptibility to deception. The structure and peculiarities of emotional maturity are described; the data on the peculiarity of emotional maturity in adolescence and methods of its diagnosis are summarized. The author argues that the main components of emotional maturity are the peculiarities of emotional expressiveness, emotional self-control and empathy which have specific features on the personal and interpersonal levels of their expression. The program of polygraph research on personal susceptibility to deception in adolescence has been developed and carried out. Statistical analysis of the results obtained allowed to find significant correlations indicating that the higher level of emotional maturity the higher susceptibility to deception is and vice versa. It has been proved that it is the empathy type of emotional maturity which revealed the highest correlation with all the structural rates of susceptibility to deception according to the types of personal emotional maturity.

Key words: emotional maturity, susceptibility to deception using polygraph, emotional maturity types, relationships of the types of emotional maturity and susceptibility to deception.

Introduction. Currently, there is a particularly acute need for solving numerous applied tasks of psychology with the help of those methods of psychology which would enable the analysis of subconscious sphere, studying subject's psychical functions without relying on the research on subject's consciousness. These methods include those based on the presentation of the reference tested stimulus, for example, the method of associative experiment, combined motor method of A. R. Lurii and others that have become classics [1].

In contemporary conditions the studies of personality with employing polygraph method are gaining great popularity [2, 3, 4]. This procedure is rather complicated, especially when analyzing a large sample of respondents. In accordance with the above-said some scholars attempt to find out additional, supporting tools for excluding people especially in conditions of professional selection due to possible participation in various illegal events (criminal cases such as stealing, cheating, data leakage). It is worth noting that at present there are certain tool kits, known in literature as psychosemantical analysis – detection of hidden in the subconsciousness information that can characterize the motivation of behavior or intents (Mind Reader, StimulTest, Psycho Scan System) [5, 6]. But these procedures have a number of drawbacks: relatively high cost of the software, compulsory presence of a personal computer connected to the Internet, insufficiently high accuracy of the results, the limited amount of data that would confirm the optimality of such testing and its superiority over the others.

The purpose and tasks of the research. It is known that a polygraph method in its theoretical and methodological foundation is significantly based on the emotional sphere [7, 8, 9] which is closely integrated with all mental processes, states, motives etc. Given this situation, we set the goal to check to what extent the questionnaire "Diagnostics of emotional maturity" by O. Ya. Chebykin may present a certain pragmatical basis which characterizes individual susceptibility to deception. Herewith, we relied on the assumption that the rates of emotional maturity are the most sensitive and present the data focused on themselves and others, so that they may become informative in such a projection, as compared to a polygraph method. After obtaining the results of this comparison we could use the emotional maturity test for the preliminary assessment of the individual susceptibility to deception, thereby optimizing the research procedure and shortening the time required for solving the task set to a specialist.

To achieve the goal the following tasks were to be solved:

firstly, to summarize the data on the peculiarities of emotional maturity in terms of their possible connection with the personal susceptibility to deception;

secondly, to describe the methods, stages and conditions of conducting the research;

thirdly, to provide the analysis of the results obtained which describe emotional maturity and susceptibility to deception;

fourthly, to analyze the data of the correlation according to the types of emotional maturity and structural indicators of susceptibility to deception.

Presenting main material. For solving the first task of our research related to the analysis of the interrelation of the rates of emotional maturity and susceptibility to deception it is pertinent to note that person's emotional

sphere presents a background not only of cognitive processes, but also that of consciousness, integrating and running through almost all psychical and physiological functions of a person, being a certain indicator of changes of the latest. It is this nature of emotional sphere which enables considering it as one of the most important spheres when using a polygraph method. Since all changes which happen in the activity of brain structures of vegetative system are reflected in emotional reactions of person's both conscious and unconscious.

In the framework of psychological parameter of vital importance are not only reasons and goals of deception, but the role of emotions in the genesis of lying as well. Although deception is not an emotion, it is definitely involved into emotional complex of symptoms, whose prevailing component – emotional – is determinant. Analysis of contemporary studies [10, 11], reveals that the prevailing emotions causing deception are those of fear. The ultimate cause of deception is greed, vanity, envy, the desire to unmask a deceiver, the desire to find out the truth and others. Beside the above-listed dominating emotions deception is also stimulated by love for friends, sympathy, pity, the desire to defend oneself. It is well-known that when a person is deceiving, his organism is going through three different processes related to emotions, the complexity of content and control (DePaulo), when each of these processes can affect his behavior or state. In the genesis of deception an important part belongs to emotions such as fear, anger, malevolence, envy, anxiety, hope, despair and so on. Herewith emotional process is based on the fact that deception can lead to the three most common types of emotions associated with it – guilt, fear, and elation (P. Ekman). The power of these emotions depends on the personality of the deceiver and the circumstances in which he has to lie. Some people when lying feel less guilty than the others. Thus, for manipulators deception, telling lies is a normal and acceptable way to achieve their goals, so they probably will not feel guilty. The power of guilt depends on the circumstances as well. Besides, deceiver will not feel guilty in case he supposes that the negative consequences of his lie are not too serious. The power of fear that is experienced by a liar also depends on several factors: in relation to whom the deception is committed; deceiver's opinion on his own ability to lie; what consequences of deception after it is discovered are. The elation, emotional upturn that accompany deception grows if the listener is believed to be difficult to deceive. Another intensifying factor is the presence of foreign observers.

When experiencing a strong emotion such as fear or anger, there are some physiological changes observed in his body such as the acceleration of the heartbeat and breathing, dry mouth and throat, sweating, trembling and feeling of looseness in the stomach. Herewith, most of the above-mentioned changes (latent period can differ) occur

when having emotional arousal due to the activation of the sympathetic part of the autonomic nervous system, which mobilizes the organism for emergency actions: blood pressure and heartbeat are increasing; breathing is accelerating; pupils are dilating; sweating is increasing, salivation and mucus producing are reducing; blood sugar is increasing, providing great energy return; blood is coagulating faster in case of injuries; blood is being redistributed from the stomach and viscera to the brain and skeletal muscles, hairs on the skin are standing up creating goose bumps and so on. By doing so, sympathetic part adapts the body for expenditure of energy. When the emotion subsides, the energy-saving functions of parasympathetic part begin to dominate, which returns the body into its normal state. The very work of autonomic nervous system is set by certain areas of the brain, including the hypothalamus (which plays a leading role in many biological motives) and parts of the limbic system. From there the signals are transmitted to the nuclei of cerebral trunk which control the work of the autonomic nervous system. The latter directly affects the muscles and internal organs, triggering changes in the body and causes indirectly other by-changes by stimulating the discharge of adrenaline hormones. Thus, the above-described increased physiological arousal is typical of such emotional states as anger and fear in which the organism is in a stressful situation, such as polygraph research for deceivers.

It is difficult to distinguish the contribution of emotions in such a process, but the ultimate basis of bioelectrical activity according to the data of numerous studies [12] constitute emotional expressions, changes and reactions [13]. Appearance of vividly expressed emotional reactions to these or those questions, primarily proves that they (due to some subjective for the respondent reasons) are more important for the person, than the others.

In some studies [13] there were attempts to reveal the differences in physiological changes according to the emotions. Thus, the heart rate was higher with the negative emotions of anger, fear and sadness, than with the emotions of joy, surprise and disgust; and the first three emotions partially differed so that with anger, rage the skin temperature was higher than with fear or sadness. .

Thus, although both anger and seeing a loved person make the heart beat faster, only anger makes it beat much faster; and although both anger and fear have a lot in common, anger is hot and fear is cold (it is not surprising that people describe anger as a boiling blood, and fear as cold piercing to the bone). R. Levenson, P. Ekman and their colleagues have shown that these different patterns of excitation can be universal. Thus, heart rhythm was faster with anger, fear and grief, than with disgust, and the skin temperature was the highest with anger [14, 15].

All this demonstrates the interrelations of emotional sphere and deception, which allows us to further proceed with the analysis of consideration of emotional maturity and susceptibility to deception rates.

Summarizing of the works which employ the notion of "emotional maturity" enabled us to distinguish certain trends in the study of this phenomenon.

Firstly, some scientists are inclined to distinguish the partial models of emotional maturity: identification of emotional maturity and emotional competence as an ability to act in accordance with the internal environment of one's feelings and desires (R. Busk) or as generalizing emotional and intellectual construct which reflects emotional maturity (Yusupova G.V.) [16]; emotional maturity as a new formation of a certain age, i. e. as a characteristics of different emotional expressions peculiar to a particular age period of the person (D. N. Isaiev, N. Yu. Maksymova, J. Murray et al.); emotional maturity as a social norm – one of the characteristics inherent to adults, i. e. biologically mature person who has learned and adheres to the norms and values of culture or society where he lives, which exist in relation to emotion (A. N. Luk, A. Reber, P. Fraisse et al.); emotional maturity as emotional intelligence, reflecting aspects of comprehending emotional maturity that synthesizes the characteristics of emotional intelligence – identification, comprehension and emotions management (J. Meyer, P. Selovei, D. Caruzo, H. Gardner).

Secondly, the generative models of emotional maturity may be explained as: emotionally mature personality is a "fully functioning person", open to awareness and trusting his own feelings, able to experience a range of emotions of different depth and intensity, can verbalize, capable of empathy (K. Rogers), is sensitive to his own emotions and understands his own emotions (A. Kocharian), is open to emotional experience and is aware of his own feelings (O. O. Chudina); emotionally mature personality is a personality who is responsible for his actions and emotions, who lives in the present, creative and spontaneous (A. Maslow); emotionally mature person is a genuine person who is able to move away from socio-normalized and socially controlled feelings to the real ones, to see and experience the whole range of real feelings "here and now", to become free and responsible for his emotions, feelings, his life, to refuse from having stereotypes and clichés, to open oneself to a new experience [17]; emotionally mature person as a child, which is characterized by spontaneity, emotionality, children's frankness and liveliness of feelings and also by authenticity of life perception and his position in this world (B. Reich, A. Lowen); emotionally mature person as an adult with such qualities as maturity of mind (Z. Freud et al.), the maturity of protective mechanisms (A. Freud et al.), a positive self-perception (H. Kohut et al.), satisfaction with objects relations (M. Klein et al.); emotionally mature person is involved in transpersonal structures, identifying personal maturity and mental health (S. Grof), revealing the divine beginning in

person (A. Mindell); emotionally mature person which is characterized by a high degree of development of emotional sphere on the level of adequacy of emotional reacting in certain social and cultural conditions (O. Ya. Chebykin, I. H. Pavlova).

Keeping the above-mentioned in mind we can consider the concept of “emotional maturity” as the capacity for adequate emotional reaction according to certain age period of the individual’s life and his development in specific conditions. Given these and other studies in our work we relied on examining the nature of emotional maturity which are suggested by O. Ya. Chebykin and I. H. Pavlova [18]. Taking for granted the fact that people’s emotions have psycho-physiological (natural) and social background and based on years of research in this field they determine emotional maturity as an integrative quality of personality which characterizes the degree of the emotional sphere development on the level of the adequacy of the emotional reaction in certain social and cultural conditions and may be expressed by way of important features:

- to purposefully express one’s emotions and deliberately control their expression,
- to use emotional expression as a means of communication,
- the ability to respond emotionally to the pain of others,
- assessing and understanding one’s own emotions and the emotions of others,
- capacity for adequate perception,
- emotions self-control and reflection of emotional states, etc.

The above-mentioned explanation describes the emotional maturity as an integrative phenomenon of purely emotional nature, a certain level of emotional development and the adequacy of emotional reaction.

In this case the main components of emotional maturity as its main characteristics should cover the peculiarities of emotional expressiveness, emotional self-regulation and empathy which have specific features on the personal and interpersonal levels of its manifestation. As far as the data on the peculiarities of the emotional maturity in adolescence and methods of its diagnosis are concerned, according to the greatest work of O.Ya. Chebykin and I. H. Pavlova, in recent years the following things in this field have become important for our study: revealing the trend to all emotional maturity components increasing with increasing age (from 17 to 18-23 years); revealing sex differences in expressing the features of emotional maturity – girls have more actively developing compassion and sympathy, and the boys have regulation of their own emotions developing; distinguishing four main stages of emotional maturity development, one of which relates to the age period 18-23 years which is investigated in the given paper and represents the autonomously-balanced and relatively stable expression of emotional maturity; ascertaining of the possibility of establishing the typological model of individual’s emotional maturity which

covers 7 types (expressive, self-regulating, empathetic, harmonious, self-regulating and empathetic, expressive and empathetic, expressive and self-regulating) among which the most common are empathetic (30.5%) and self-regulating (25%) of the total sample of respondents; confirmation and justification that the most appropriate tool for measuring the emotional maturity is the questionnaire "Diagnostics of emotional maturity" [19].

Thus, based on the above-listed, solving the second problem we employed the above-mentioned questionnaire which enabled us to obtain all necessary valid and reliable data on the rates of emotional maturity in the shortest time. The questionnaire contains 42 statements aimed at exploring emotional sphere of a person. Thus, the technique involves consideration of emotional expressiveness as an ability to naturally, spontaneously express emotions with facial expressions, mimicry, movements, gestures, intonation of the voice without suppression, since the control over the external expressions of emotions can cause limitations of sensual experiences, lack of understanding. According to this method the high values on the scale of expressivity prove vivid expression of emotions on one's face, in people's actions, the ability to share one's mood with those surrounding him (introexpressivity) and transform their behavior (extraexpressivity). According to various scholar emotional self-regulation is managing one's emotions according to the situation and feasibility, ability to cope with one's emotions by socially acceptable ways. The high level of self-control demonstrates that the person is able to regulate well his emotions when communicating (intro self-regulation) and thus influence the organization of the behavior of others (extra self-regulation).

Empathy implies an ability to penetrate into the world of other person's feelings, an ability to understand the emotional state of others, an ability to sympathize and empathize with them, understand their behavior, emotionally respond to their feelings. High value according to the scale of empathy reflects person's deep understanding of a variety of life circumstances of others, an ability to rise their confidence (introempathy) and thus influence on their behavior and actions (ekstraempathy) [20].

As far as susceptibility to deception is concerned, it should be noted that in our study we consider the term "susceptibility" as the most balanced concept which states person's particular characteristic in terms of its manifestations. Regarding such categories as "deception", "lie" and "untruth" we understand them as a complex unity, since the signs of these categories appear at the same time, it is only the form of manifestation – complete distortion of truth, partial distortion, innuendo etc. However, these forms are not connected with differentiating these categories. Indeed, a person can be deceived by different ways and in different ways: to tell half the truth or tell a lie, make an action (as deceivers do) or vice versa – to promise something without doing this. But to tell a lie is possible

only in one way – verbally, that is, with the help of oral or written language. “Lie has, of course, other functions, too, but its main function is to act as an instrument of deception that allows you to take advantage and benefit.” [21]. But deception can be performed by other means as well, namely, by actions. Thus, while deceiving it is possible to use both words and actions simultaneously. And it is hardly possible to understand where “deception” started and whether it finished with “lie” or “untruth”.

That is why, in our understanding “deception” is still an integrated category, which includes both “lies” and “untruth”. To confirm this we will note that deception can be expressed in the form of: voice messages; actions or lack of actions (false maneuver, machination, game, roles, hypocrisy, promises failure); “deception” as the goal, which is based on intentions and motives of the subject, and can be expressed with hostile orientation (lie) or without hostile orientation (untruth, nonsense, fiction); “deception” as a subject, which manifests itself in untrue information or true information, presented in a way that an interlocutor arrives at conclusions which contradict the exclusive state of things; “deception” as an action of the subject who pursues certain interests” [22]; “deception” as the process of implementing untrue information; “deception” as a result, as an action that has reached its objective, i.e. the interlocutor perceives untrue information as a true one and uses it in his further activity, thus being deceived [22].

According to the purpose of the study we worked out polygraph tests in compliance with all necessary rules and regulations which include: a single-word understanding (“Yes / No”); clear, precise formulation, the maximum conciseness (simple grammatical structure); convenient for pronunciation, correct in meaning; contains only a single action or a single fact; has only one semantic content; does not express the specialist’s distrust to the respondent; in important questions we instinctively avoided dangerous combinations of letters in pronunciation (cr, tr, pr, tsh, ksch, zhr); considers intellectual and educational level, vocabulary peculiarities; absence of questions in the future tense and formulated questions, particles-negations “not”, as well as particles of double negation, that is the statement “not, not”.

In its final version polygraph study consisted of seven test groups, each of them corresponding to the direction of modern youth’s values, and an additional “lie-detecting test” necessary for the procedures of chart analysis and obtaining the results. The first (after the “lie-detecting test”) is a block of tests which is focused on finding deception in a value sphere of the corresponding higher educational institution; the second – that of the past, namely, school age; further: the third – that of the future employment and wealth; the fourth – health; the fifth – family;; and the sixth – friends and communication; the seventh – compliance with social norms. Overall, polygraph test consists of eight blocks of tests and 122

questions. 51 questions ("significant" questions) are focused on deception detection in key spheres of modern youth's values. In the case of polygraph testing in psychological research "neutral" questions serve as a baseline, those that introduce into the theme of "significant" question (one or more), which follows it and compare the response to the latter. "Neutral" question is really "neutral" in case when the examinee provides consciously truthful answer, and the content of the question does not perform any particular emotional significance for him [23]. However, in the purposes of psychological research "neutral" questions should attract and even make think over the research topic. "Significant" questions (relevant, checking) carry information about the details of the study or related events which are definitely known to the respondent. In our study "significant" questions are key questions in determining the level of deception of the examinee.

Generally, the whole process of conducting the polygraph examination took 1,5-2,5 hours. The study covered 70 people including 48 girls and 22 boys aged 19-22 years, who completed the "Diagnostics of emotional maturity" questionnaire. An expert analysis, i.e. qualitative and quantitative evaluation of the polygraph charts has been carried out based on it some generalizations have been made. Given the need for comparison of the polygraph examination methodology in our study we performed the modernization of the results obtained in terms of their representation in certain digital values. In this case, we relied on the way of measuring the scales which means assignment to the examinees the characteristics of digital values (points) and each statement of the examinee was given a conditional numerical value. When calculating the number of points for questions focused on deception in a certain value sphere each positive response was assigned "1", which indicates the presence of verbal deception (admittance) of the respondent. When getting a negative answer the value "0" (no admittance) was assigned. According to the methodology of polygraph examination and the chart results analysis in the same way numerical values were assigned to false statements which describe fraud.

In our study we used an integrated rate of susceptibility to deception – "total deception", which is a combination of hidden deception (detected while using polygraph) and verbal deception (examinee's oral admittance of the deception according to the methods of polygraph testing).

Table 1

Statistically significant correlations of the rates of emotional maturity and susceptibility to deception (total sample, n = 70)

Rates	IEX	EEX	EE	IS	ES	S	IEM	EEM	EMP	EM	SINC	FV	FCH	GOF
IEX	1	0,323*	0,803**		0,283*		0,331**		0,281*	0,544**			0,298*	0,528**
EEX		1	0,823**		0,357**		0,283*	0,414**	0,437**	0,631**			0,337**	0,525**

EE			1		0,394**	0,249*	0,377**	0,334**	0,444**	0,723**		0,252*	0,391**	0,647**
IS				1	0,277*	0,752**				0,415**			0,328**	
ES					1	0,841**	0,313**	0,563**	0,551**	0,785**			0,386**	0,453**
S						1	0,298*	0,476**	0,486**	0,772**			0,449**	0,363**
IEM							1	0,279*	0,791**	0,617**				0,321**
EEM								1	0,809**	0,690**			0,370**	0,458**
EMP									1	0,818**			0,378**	0,489**
EM										1			0,530**	0,644**
SINC											1			
FV												1	-0,509**	0,509**
FCH													1	0,482**
GOF														1

Notes: 1. IEX - introexpressivity; EEX – extraexpressivity; EE – emotional expressivity; IS – intro self-regulation; ES – extra self-regulation; S – emotional self-regulation; IEM – introempathy; EEM – extraempathy; EMP – empathy; EM – emotional maturity; SINC – sincerity; FV – susceptibility to verbal fraud; FCH – susceptibility to fraud revealed when analyzing charts; GOF – general rate of the susceptibility to fraud (these symbols will be used in the following tables as well); 2. * - correlation is statistically reliable on the level of $p \leq 0,05$; ** - correlation is statistically reliable on the level of $p \leq 0,01$.

Based on the results obtained, we went on to the third task of our study aimed at revealing the most significant relationships of the basic properties of emotional maturity and the data on polygraph studies concerning susceptibility to deception. To do this, we conducted a statistical and theoretical analysis and provided a systematization of the data which underwent psychological explanation. To solve this task we employed the following statistical methods: calculation of the sample mean (\bar{x}), mode (M_o) and median (M_e) of the distribution; calculation of the product-moment correlation coefficient of Pearson (r) for correlation analysis, use of t-Student criterion (t) to determine the authenticity of the differences between samples that were compared [24, 25]. Consideration of the rates of emotional maturity and susceptibility to deception using polygraph in adolescence allowed us to find significant correlations between the level of emotional maturity and susceptibility to common deception $r = 0,644$, $p < 0,01$, which may show that the higher the level of emotional maturity the higher susceptibility to common deception is and vice versa. Similar trends have been revealed (see Table 1):

- between the level of emotional expressiveness and susceptibility to common deception $r = 0,647$, $p < 0,01$ which shows that the higher the level of emotional expressiveness the higher susceptibility to deception is and vice versa;
- between the level of empathy and susceptibility to general fraud $r = 0,489$, $p < 0,01$ which may prove that the higher the level of empathy the higher susceptibility to common deception is and vice versa;
- between the level of emotional maturity and susceptibility to hidden deception (detected with the help of polygraph) $r = 0,530$, $p < 0,01$, it may

point out that the higher the level of emotional maturity the higher susceptibility to hidden deception is and vice versa.

The above-mentioned results enabled us to start the fourth task of our research aimed at a more in-depth analysis in terms of differentiating the examinees according to the types of emotional maturity by comparing them with susceptibility to deception. Thus, based on the data on the sample under analysis relating to respondents' susceptibility to deception, the connector may be linking both common rate of emotional maturity and any dominant component of emotional structure. It is necessary to note that it is the variability of specific forms of emotional reaction which serves as the differentiation of the examinees according to the types of emotional maturity. Thus, in determining the types of emotional maturity we assume as the basis a purely pragmatic approach with reliance on the dominating component in its structure [18]. Thus, 30% respondents revealed the expressive type, 20% – empathetic, 20% – self-regulating, 16% – expressive and empathetic. As for the structure of the groups of the respondents of harmonious, self-regulating and empathetic, expressive and self-regulating types, it is not considerable, and for this reason correlation analysis wasn't conducted.

Table 2

Statistically significant correlations of the rates of emotional maturity and susceptibility to fraud in the group of students with empathetic type of EM (n=14)

Rates	IEX	EE X	EE	IS	ES	S	IEM	EEM	EMP	EM	SINC	FV	FCH	GOF
IEX	1		0,575*				0,730**							
EEX		1	0,851**		0,604*				0,649*	0,728**				0,684**
EE			1		0,678**	0,560*	0,705**		0,722**	0,852**				0,615*
IS				1										
ES					1	0,870**		0,611*	0,800**	0,877**			0,575*	0,875**
S						1	0,626*		0,830**	0,894**			0,581*	0,745**
IEM							1		0,673**	0,747**				
EEM								1	0,702**	0,549*			0,535*	0,591*
EMP									1	0,940**			0,570*	0,699**
EM										1			0,574*	0,769**
SINC											1			
FV												1		
FCH													1	0,616*
GOF														1

Notes. * - correlation is statistically reliable on the level of $p \leq 0,05$; ** - correlation is statistically reliable on the level of $p \leq 0,01$.

Thus, according to the empathetic type (Table 2), based on the presence of correlations in this structure, there are very high levels of correlation of the rates of susceptibility to deception and those of

emotional maturity observed: between the level of emotional maturity and susceptibility to common deception $r = 0,769$, $p < 0,05$; between susceptibility to common deception and the level of self-regulation – $r = 0,745$, $p < 0,05$; between susceptibility to common deception and the level of empathy – $r = 0,699$, $p < 0,05$; between susceptibility to common deception and the level of expressiveness – $r = 0,615$, $p < 0,01$. Summarizing these results, we can talk about most probabilistic estimation of the susceptibility of empathetic type to deception in relation to other types.

Table 3.

Statistically significant correlations of the rates of emotional maturity and susceptibility to fraud in the group of students with expressive type of EM (n=24)

Rates	IEX	EEX	EE	IS	ES	S	IEM	EEM	EMP	EM	SINC	FV	FCH	GO F
IEX	1		0,737**							0,587**			0,468*	0,618**
EEX		1	0,827**							0,631**			0,536*	0,530*
EE			1						0,492*	0,777**			0,643**	0,725**
IS				1		0,702**				0,445*				
ES					1	0,864**		0,610**	0,595**	0,800**				
S						1		0,543*	0,535*	0,820**				
IEM							1		0,505*					
EEM								1	0,866**	0,704**			0,450*	0,615**
EMP									1	0,803**			0,497*	0,671**
EM										1			0,607**	0,660**
SINC											1			
FV												1	-0,639**	
FCH													1	0,493*
GOF														1

Notes. * - correlation is statistically reliable on the level of $p \leq 0,05$; ** - correlation is statistically reliable on the level of $p \leq 0,01$.

As for the expressive type of correlation structure (Table 3), the integral rate of emotional maturity in this group on the significantly high level correlates with the rates of deception: between the level of emotional maturity and susceptibility to deception $r = 0,699$, $p < 0,05$; between the level of emotional maturity and susceptibility to hidden deception $r = 0,570$, $p < 0,01$. Similarly, there are close connections of susceptibility to deception and other components of the emotional maturity rates: between susceptibility to common deception and the level of empathy $r = 0,671$, $p < 0,05$; between susceptibility to common deception and the level of expressiveness $r = 0,725$, $p < 0,05$. Besides, we can also see that with this rates of deception closely correlate not only integrals, but also their components, such as: introempathy, extraempathy, introexpressivity and

extraexpressivity. Based on the results obtained, we can also assume that the peculiarities of emotional maturity severity of the representatives of the expressive type can point out to some extent to susceptibility to deception.

Concerning the correlation structure of self-regulating type (Table 4), the integral rate of emotional maturity as well as in previous analyzed types on a significantly high level correlates with the rates of deception: between the level of emotional maturity and susceptibility to deception $r = 0,714$, $p < 0,05$; between the level of emotional maturity and susceptibility to hidden deception $r = 0,658$, $p < 0,01$.

Table 4

Statistically significant correlations of the rates of emotional maturity and susceptibility to fraud in the group of students with self-regulative type of EM (n=14)

Rates	IE X	EEX	EE	IS	ES	S	IEM	EEM	EMP	EM	SINC	FV	FCH	GOF
IEX	1		0,806**							0,560*			0,621*	0,611*
EEX		1	0,622*					0,582*		0,612*				
EE			1			0,643*				0,801**			0,703**	0,608*
IS				1		0,754**	0,561*			0,658*			0,705**	0,740**
ES					1	0,730**		0,664**	0,599*	0,696**				
S						1	0,548*	0,551*	0,712**	0,912**			0,734**	0,788**
IEM							1		0,753**	0,668**				
EEM								1	0,790**	0,639*				
EMP									1	0,845**				
EM										1			0,658*	0,714**
SINC											1			
FV												1		0,627*
FCH													1	0,777**
GOF														1

Notes. * - correlation is statistically reliable on the level of $p \leq 0,05$; ** - correlation is statistically reliable on the level of $p \leq 0,01$.

Similarly, there are close connections of susceptibility to deception with other components of emotional maturity: inclination between susceptibility to common deception and expressiveness $r = 0,608$, $p < 0,01$; between susceptibility to common deception and the level of self-regulation $r = 0,788$, $p < 0,05$. Based on the results obtained, we can also assume that the peculiarities of the emotional maturity severity of the representatives of self-regulating type can show to some extent susceptibility to deception.

Table 5

Statistically significant correlations of the rates of emotional maturity and susceptibility to fraud in the group of students with expressive and empathetic type of EM (n=11)

Показател и	IEX	EEX	EE	IS	ES	S	IEM	EEM	EMP	EM	SIN C	F V	FC H	GOF
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IEX	1	0,735*	0,942*	0,694*	0,822*	0,856*	0,829*	0,812*	0,942**	0,936*				
EEX		1	0,920*	0,618*	0,772*	0,786*	0,676*	0,889*	0,920**	0,896*				0,756**
EE			1	0,707*	0,858*	0,884*	0,814*	0,910*	10,000*	0,984*				0,699*
IS				1		0,877*	0,773*		0,707*	0,791*				
ES					1	0,899*	0,634*	0,827*	0,858**	0,897*				
S						1	0,788*	0,756*	0,884**	0,952*				
IEM							1		0,814**	0,827*				
EEM								1	0,910**	0,877*				0,627*
EMP									1	0,984*				0,699*
EM										1				0,652*
SINC											1			
FV												1		0,615*
FCH													1	0,722*
GOF														1

Notes. * - correlation is statistically reliable on the level of $p \leq 0,05$; ** - correlation is statistically reliable on the level of $p \leq 0,01$.

The fact that expressive and empathetic type shows less confirmation of the connections of the rates of susceptibility to deception and emotional maturity (Table 5) possibly proves that the presence of high dynamic changes in its reactivity, on the one hand, and depressivity, on the other hand, as well as the ambivalence of feelings. Therefore, such data can not perform certain predictive basis for determining susceptibility to deception, that is the representatives of this type haven't shown the susceptibility to deception.

Getting this data, we went on to their inter-type analysis to be able to conduct the procedure of emotional maturity diagnostics in order to predict susceptibility to deception according to the type. Thus, it can be argued with high probability (despite the presence of correlations for all four listed types), the most close correlations according to all parameters are found in empathetic type. That is, if to rank all the types in the hierarchy based on the data on correlation analysis, we can assume that the representatives of empathetic type have maximum susceptibility to deception.

Conclusions. In general, summing up the results of the research we can arrive at the following preliminary conclusions.

First, based on theoretical studies it was stated that the data on susceptibility to deception obtained with the help of polygraph method reflect quite extensively the various changes in the emotional sphere of personality. Based on the current research it was revealed that the data on emotional maturity may be a probable informative indicator of a personal susceptibility to deception, since they integrate the most significant signs of emotional sphere peculiarities: empathy, self-regulation and expressivity.

Secondly, the technology of the pilot study of the peculiarities of susceptibility to deception is built on the basis of a polygraph testing and the questionnaire "Diagnostics of emotional maturity" based on empirical studies.

Thirdly, it was shown that the integrated rate of emotional maturity in the sample under analysis got high correlation with the susceptibility to deception.

Fourthly, it was proved that the highest correlation with all structural rates of susceptibility to deception according to the types of emotional maturity was revealed in empathetic type of personality's emotional maturity. Similar trends to a lesser degree are found with the representatives of expressive and self-regulating types.

Given all these data we can say with a certain assumption that the preliminary use of the methodology "Diagnostics of emotional maturity" by O. Ya, Chebykin can perform a procedure for the preliminary evaluation of individual susceptibility to deception.

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