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**VALUE AND SEMANTIC PSYCHOMETRIC CREATIVITY AND
CREATIVITY SELF-ASSESSMENT CORRELATES**

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Abstract

This article is devoted to the examination of the linkage between different types of creativity and value personal orientation structure. The issue arises from, on the one hand, many researches belief that creativity could be assumed as value, which gives the meaning of life, while creative self-realization is the leading life purpose and crucial point, on the other hand, the level of this issue knowledge is quite low (especially considering the link between creativity and parameters of value and semantic sphere).

The application of the psychological testing and correlates analysis method reveals the connection between value orientation and psychometric creativity, namely, verbal creativity and divergent mindset, and also the rate of personal creativity characteristics self-evaluation. The sample consists of 135 people aged from 18 to 30, Novosibirsk Universities' students of different training fields and working specialists.

The data analysis let to depict the type of value, connected with both characteristics of verbal and non-verbal creativity, divergent mindset and with personal creativity characteristics. This is the type of value "Self-reliance", which core feature is the independence of mindset and behavioral choices. Revealed connections give an opportunity to examine the creative peculiarities as the source for self-reliance value expression and, vice versa, independence of mindset and behavior could be the factor, stimulating creative process and creative activity.

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Keywords: Creativity, artwork, value orientation, meanings, interconnection.



1. Introduction

The discussion about the peculiarities of the interconnection between creativity and value-semantic orientations of the individual is the interest to many philosophical and psychological scientific schools (from psychoanalysis to existential philosophy and psychology). At the same time, the mode of consideration of this interrelation is extremely changeable: from the concept of complete autonomy to factorial theories, suggesting the existence of multiple non-linear links between the phenomenon under the study. This is largely due to the inconsistency of the results obtained by representatives of various scientific approaches, and therefore there is a need to clarify the initial status and the differential aspects of the issue under study.

The discovery and explanation of reliable interconnections in the differential aspect would allow a better understanding of the differences in the test creativity correlation structures (both verbal and non-verbal) and the structure of the evaluation of creative features and qualities by person himself. In addition, the identification of value-semantic foundations of creativity and artwork would allow describing the options of semantic personal self-realization in the creative activity process.

2. Problem Statement

The main problem of the research is connected with the fact that scientists obtain contradictory results that describe the correlation between creativity and value-sense orientations. It should be noted that both creativity and value-semantic orientations are initially complex mental phenomena that imply a wide variation in their understanding and application of diverse research methods. In this regard, the contradiction of the results can be associated with the use of different research constructs: psychometric creativity and human self-esteem of their creative qualities, respectively, giving different connections with the parameters of the value-semantic sphere.

Methodologically, creativity is a stumbling block for three key approaches (Druzhinin, 2002):

- 1) creativity itself does not exist, we can only discuss certain conglomerate of intellectual activity, motivation, values, personality traits;
- 2) creativity is divided into non-verbal, verbal, social and personal, is an autonomous factor independent from the intellect ;
- 3) the creative process as a specific activity form does not exist: a high level of intellect development requires a high level of development of creative abilities and vice versa

At the beginning of the 20th century, within the framework of the emerging psychoanalytic tradition, artwork and creativity had already got the appearance of clinical phenomena, which related to mythological subjects. Z. Freud and O. Rank, considering creativity through the prism of the theories of sublimation and inferiority complex, argued that it is impossible to examine creativity as a form of specific productive human activity. The psychological foundations of creative activity were seen in the sublimation activity of the unconscious, as the drainage of libido energy, which does not get the direct output. According to the C. G. Jung analytical psychology, the autonomous creative complex and the archetypes of the collective

unconscious, acting as the main semantic “raw material” for the artwork, appears to be the core basis (Torshina, 1998).

Analytical and humanistic psychology suggested a new perspective in the consideration of the problem of creativity as a spontaneous human essence manifestation, as a kind of intention to create something qualitatively new, without a strict focus on any particular result (Druzhinin, 2002; Torshina, 1998). Thus, the criteria of artwork and creativity as a universal function of a person, causing a variety of forms of self-expression, were significantly revised. So, for example, K. Rogers and A. Maslow proclaimed the degree of the author’s satisfaction as the main self-expression criterion (opposing to external evaluation of the final product).

The natural science paradigm in terms of cognitive and psychophysiological approaches highlighted the search for the correlation between creativity and a range of mental processes and functions – intellectual abilities (taking into account hemispheric asymmetry), cognitive and epistemological styles, personality traits, factors of gender and age, motivation, self-esteem, etc.

In particular, the study of the interconnection between intelligence and creativity has a long history of scientific confrontation between two hypotheses: about the existence or absence of their connection. The most recent data prove the fact of the existing direct interconnection, although it is highly intermediated by third factors and depends on the specificity of the sample under study (Batey, Furnham, & Saffiulina, 2010).

A range of researchers (Benedek, Jauk, & Sommer, 2010; Razumnikova, 2003, 2011) indicate that the connection between creativity and intelligence can be intermediated by the mechanisms of general cognitive control necessary for the final stage in the decision making process. The common structural components of creativity and intelligence include the frontal and parietal parts of the cortex. At the same time, subcortical structures act as emotional regulation of behavior, influencing the formation of individual strategies of artwork activity. Accounting for functional asymmetry of the hemispheres requires the revealing the mechanism of domination of one of them over the other: it is determined by the nature of the creative purpose (task) facing the person (Razumnikova, 2003).

Considering the connection with the cognitive styles, the results of the research reveals the connection between a rational cognitive style and changes in the frequency-spatial organization of alpha-range bio-potentials in the convergent, and irrational in the divergent thinking (Razumnikova, 2017).

The study of cognitive paradoxes occupied the special place. G. Calic and S. Helie suggest considering cognitive paradoxes as an integral part of human artwork. In the attempts to creatively resolve a contradiction, reaching competing requirements at the same time, is the main potential of a creative person. However, incentives or rewards for resolving contradictions may have the unintended effect of reducing the creative outcome in some circumstances (Calic & Helie, 2018).

The examination of the connection between creativity and personal traits allows to draw conclusions about the rather wide variation of these traits from “openness to experience” (or “search for novelty”), to extraversion / introversion, rationality / irrationality, etc. (Razumnikova, 2011, 2017; Jun & Haier, 2007). At the same time, there are many variables that determine the effectiveness of creative activity and indirectly affect the change in its connection with impulsiveness or severity of rational and irrational features (Razumnikova, 2011; Knyazev, 2012).

Regarding the fact that the creativity problem was rise up to the level of meaningful personal intention, artwork become to be widely discussed as as the optimal variant for the person to realize his inner content. So the question of the interconnection between creativity and key features of the personal sphere, which can hypothetically determine this sphere (motivation, personal qualities and qualities, level of psychological well-being and happiness, value-oriented orientations, etc.), has always been arisen (Vodyaha , 2013, Chikszentmikai, 2015). It turned out that the degree of knowledge of this issue is rather small (especially in conjunction to the value-semantic sphere parameters) and requires further research.

The study and description of the creative process are equally essential, they reveals the essence of the dynamic nature of artwork. While developing the theory of a by-product as a result of an unintentional creative process (Ponomarev, 1976; Martindale, 1990), modern researchers (Chang, Lin, Chien, & Yen, 2018) found that creative spontaneous behavior (corresponding to the inspirational phase of creativity) in solving creative problems favorably affects the activation of creative thinking, and the ideas diversity, and planned behavior affects the quality of ideas and the result of creativity.

Neuroscience does not stop trying to designate the classification parameters of creativity. A. Dietrich, noting that nowadays there is no viable experimental approach to solve the problem of identifying the classification creativity parameters, and relying on the data from numerous psychophysiological studies, insists on allocation of three basic creative activity modes that determine its types: deliberate mode, spontaneous and flow regimes (Dietrich, 2018).

Long-term attempts to divide creativity and artwork activity into types led to the division of four main of them: verbal, non-verbal, social and personal. Verbal creativity here refers to the ability and readiness to create a new verbal product, while non-verbal creativity is the readiness to create a product figuratively-graphic. Social creativity is manifested in the sphere of relationships, and personal creativity is expressed in reflection and conscious transformation of one's life path. This classification is based on the empirical study of the structure of creativity (Barysheva, 2014).

A.N. Leontiev had already accented the possibility of existence of the direct link between personal meaning and creative activity components. The possibility of acquiring personal meaning is accompanied with the need for self-awareness, critical evaluation of the social values system, a sort of "going beyond" its limits, which are entailed as norms, values, behavior patterns, activities, etc., established in society. This is comparable to what E. Fromm called "transcendence", which is the essence of the creative process. In other words, the acquisition of personal meanings occurs on in the realized creative activity (Leontiev, 1999; Torshina, 1998).

The problem of importance and meaning is also connected with the traditionally distinguished characteristics of creativity, which constitute its psychological basis. These include novelty, social significance (utility), as well as characteristics responsible for the awareness and meaningfulness of creative activity: the ability to detect and formulate, to generate a lot of ideas, to produce slight associations and unusual answers, intellectual, creative initiative, breadth of categorization, fluency, flexibility and originality of thinking (Druzhinin, 2002; Barysheva, 2014). A kind of "breakthrough" in this field made M. Goncalves. He offered to consider the value as a component of creativity and artwork in general. Employing a range of qualitative methods (including the method of peer review in the study of artwork and the creative

product), the researcher concludes that it is necessary to consider value as the third basic component of creativity, along with novelty and utility (Goncalves, 2018).

Creativity is considered specifically as a value, which attach a certain meaning to life. V. Frankl claimed that creative self-realization is the leading vital purpose of a person, allowing him to translate his talents into activity and channel energy into development. He also believed that the true meaning should be found not inside of oneself, but in the external world due to self-transcendence, as the overcoming of one's own passivity, a kind of "going beyond one's self" (Frankl, 1990).

M. Chikszentmihai, in the stream theory developed by him, proclaims creativity as the main source of meaning in human life, contributing to the emergence of new, both subjectively and objectively important products of activity. M. Chikzentmihaji called creativity the cultural equivalent of the process of genetic change, and emphasized its semantic principle (Cikszentmihaji, 2015).

Moreover, the human meaning system can be envisaged as both relatively sustainable and autonomous establishment. D. A. Leontiev introduces the concept of a "dynamic semantic system" (DSS), which he defines as a hierarchically organized and autonomously functioning coherent whole (Leontiev, 1999). The same meaning (for example, artwork) can act as an independent one, and can be included in the system of other meanings (gaining a greater degree of freedom, professional self-improvement, etc.).

As we address the value level of personal substance, we become consider values as stable personal beliefs, which determine the ultimate goal and the *raison d'etre*. Thus, for example, M. Rokeach, when describing the structure of final human values, selected the particular cluster – supreme values, which are freedom, love, development, cognition and artwork. According to M. Rokeach, values are the core life principles, defining its way and behavioral pattern (Rokeach, 1973).

The approach of Sh. Schwartz is fundamentally important for this research; he suggests the need to distinguish two types of values: 1) values of society and social groups (social values); 2) personal values (individual values). A person bases on culturally accepted values, "testing" them to failure and determining their level of acceptability in a particular social environment. At the same time, individual values are far from being always derived from social ones and may even conflict with them (Schwartz, & Bilsky, 1987).

The concept of values, according to Schwartz, is polysemous. It incorporates convictions (opinions), goals and a behavior strategy that corresponds to the achievement of these goals. In addition, the values are systemized by their significance and importance towards each other. Schwartz claimed, the social value priorities act as the main cultural element, while the personal value priorities represent the central goals related to all aspects of behavior. Thus, there is always a multi-level manifestation of values (Schwartz, 2003).

3. Research Questions

The main issue of the study is the problem of the interconnection between creativity and value-semantic orientations of the individual: is this relationship direct or is it mediated by third factors? And is it possible to claim that each type of creativity, as well as creativity self-assessment, corresponds to a certain complex of value orientations?

4. Purpose of the Study

The purpose of this study is to identify and systematize the interconnections between various types of creativity and value orientations.

5. Research Methods

The test method was used as the main research method. The following *techniques* were used:

- for the creativity examination: test to study the verbal creativity; test of divergent thinking to study the non-verbal creativity; technique to study the personal creative characteristics (creative self-esteem of the individual);
- to study the value orientations.

The sample consisted of 135 people aged from 18 to 30 years, Novosibirsk university students of different fields of study and working professionals.

6. Findings

According to the results of the verbal creativity examination (see Figure 1), we can say that on average, the test subjects gave 1-2 responses to each stimulus. At the same time, the indicator of verbal originality, reflecting the ability to conduct unusual ideas that differ from the generally accepted ones, was 0.66, which can be attributed to the average level in accordance with the percentile scale.

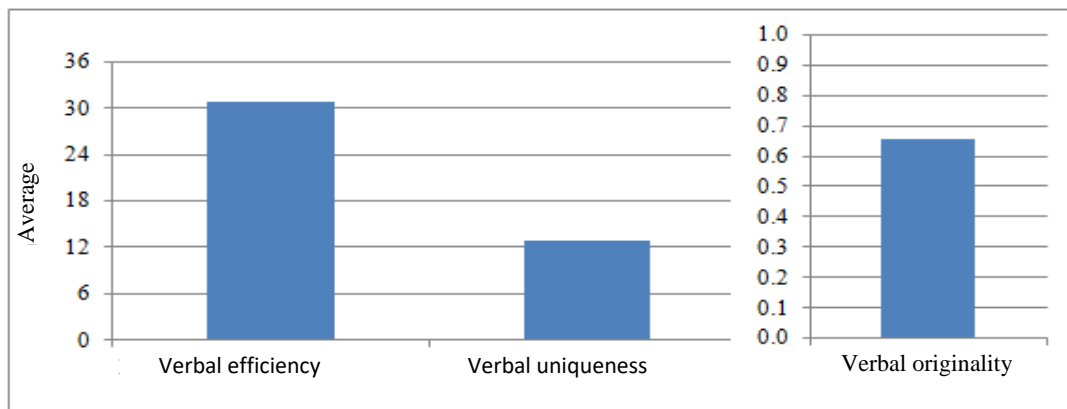


Figure 01. Distribution of indicators of divergent thinking (n = 135 people)

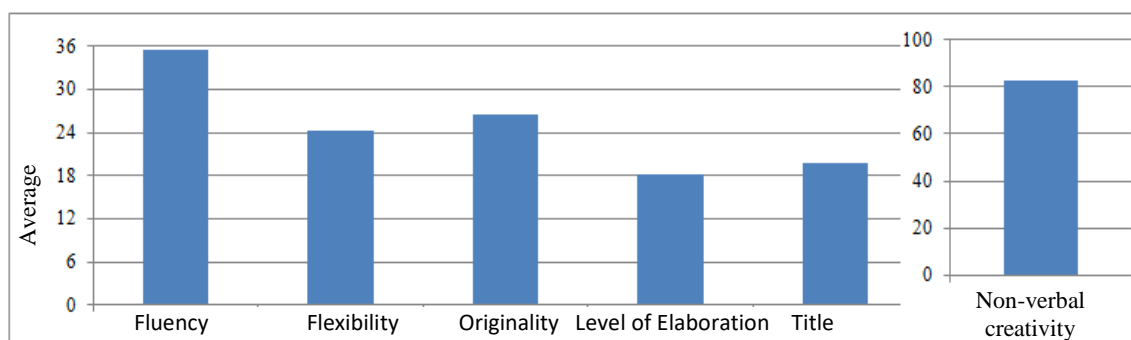


Figure 02. Distribution of indicators of divergent thinking (n = 135 people)

Figure 2 shows the indicators of non-verbal creativity, and it is seen that fluency is the most expressed as the productivity of numerous ideas generating. The indicators of flexibility, reflecting a person's ability to implement different approaches while solving a problem, and originality, demonstrating a person's ability to produce original, non-standard ideas, are less expressed. The factor of elaboration as the desire to complement the basic idea with something new, to ennoble it, was expressed least of all.

The analysis of the results obtained by the method of N.F. Vishnyakova (see Figure 3), revealed the fact that the manifestation of personal creative qualities corresponds to the average level, while ideally respondents would like to see themselves more creative, especially in terms of the characteristics of creative thinking and creative attitude to the profession.

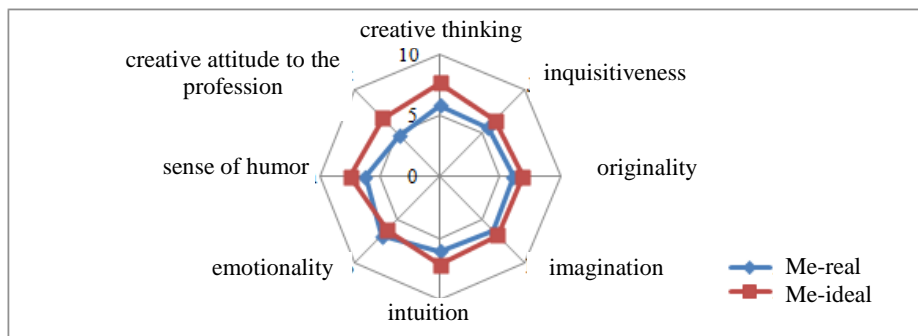


Figure 03. Distribution of personal creative characteristics indicators (n = 135 people)

It should be noted that in a previous study, where the sample was 83 people (Kavun & Tarakanov 2016), the substantially identical results were obtained in terms of verbal creativity, divergent thinking and self-esteem of creative thinking.

To analyze the structure of values on methods of S. Schwartz, we compared the way respondents rank values at the convictions level (normative ideal) and values at the behavior level (individual priority). The data are presented in Figure 4.

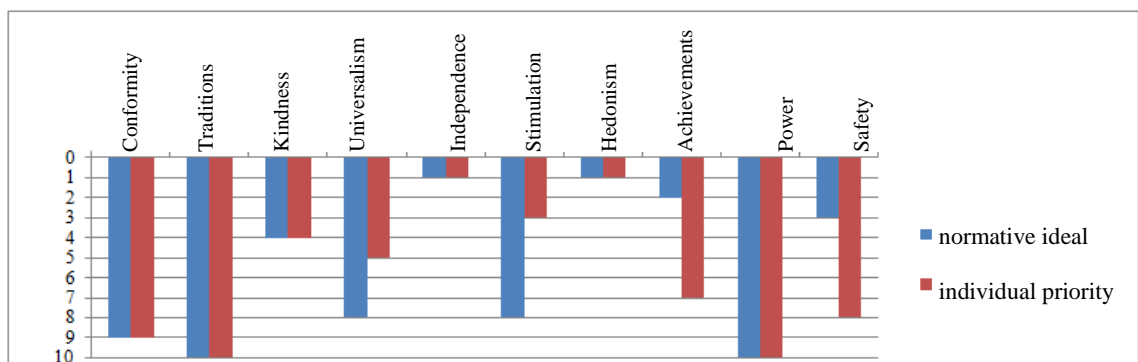


Figure 04. Distribution of values according to ranks (n=135 ppl)

It is noteworthy that the discrepancy between normative ideals and individual priorities has been traced on four values. Values such as universalism and stimulation at the level of belief were on the 8th place, and at the level of individual priorities - on the 5th and 3rd, respectively. A reverse tendency is observed in achievement values and safety indexes. At the level of normative ideals, they were on the 2nd

and 3rd place, at the level of real behavior - on the 7th and 8th places. Implementing the universalism and the ranks at the level of declared and realizable values in real behavior all appears to be in the zone of average values, while the other three values and the significance of the value does not coincide with the way this value is realized by the individual at all. It turns out that the desire to achievement, personal success through the manifestation of competence in accordance with social standards and, therefore, something socially approved is regarded by respondents as a significant value, but at the level of individual priorities, the subjects do not seek to implement it. The exact tendency is for the value of "Security", described by Schwarz as a need for security for other people and for oneself, as harmony, stability of society and relationships. The value of this value is high, but the desire for implementation is low. The reverse picture is observed for the value of "Stimulation". Respondents do not view the desire for novelty and deep feelings as a great value, but at the level of individual priorities they consider that this need should be satisfied one of the first.

Thus, it is occurred, that the respondents on the level of their idea about the way one's should behave, the values "Achievements" and "Safety" are important and largely defines their behavioral strategy in life. But in the reality, when, on the one hand, a lot of depends on external environment, there are a phenomenon of social impact, on the other hand, in current considerable social instability and need for real achievements, so, make an effort and meet the demand of safety and achievements appears to be a hard task to do. However, at the same time modern world offers a lot of opportunities to meet the demand in novelty and impressions. The respondents pursue these opportunities, but on the level of ideals, the value "Stimulation" is not important to them.

In the analysis of the correlations of verbal creativity and divergent thinking characteristics with values at the level of normative ideals and individual priorities (Tables 1, 2), a rather heterogeneous picture of relationships was revealed. For both verbal and non-verbal creativity, it is common that the maximum number of positive connections is found with the value of "Independence", both at the level of life principles and at the level of realization of values in behavior. According to Sh. Schwarz, the defining goal of the type of values, united in the notion of "Self-Direction", consists in the independence of thinking and the choice of behavioral strategy, in artwork and research activity (Schwartz, 2003). Independence as a value is derived from the organismic need for self-control and self-government, as well as from the interactional needs for autonomy and independence. Then, the revealed interconnections between the parameters of verbal creativity and divergent thinking allows to consider creativity as a resource for maintaining and developing independence, and, vice versa, independence of thinking and choice of behavioral strategy can act as a factor stimulating the creative process and creative activity.

Table 01. Significant correlations between verbal creativity and values at the level of life ideals and their expression in behavior ($p < 0.05$)

	Verbal uniqueness		Verbal originality	
	(value)	(behaviour)	(value)	(behaviour)
Conformance	—	-0.25	—	-0.20
Independence	0.22	—	0.19	0.17
Stimulation	0.21	—	—	—
Hedonism	—	—	—	-0.22

Table 02. Significant correlations between the characteristics of divergent thinking and values at the level of life ideals and their expression in behavior ($p < 0.05$)

	Development		Name		Divergent thinking	
	(value)	(behaviour)	(value)	(behaviour)	(value)	(behaviour)
Conformance	—	—	—	-0.27	—	—
Kindness	—	0.19	—	—	—	0.21
Universalism	—	0.24	—	—	—	0.20
Independence	—	0.17	0.25	0.30	0.20	0.23
Stimulation	—	0.22	0.19	0.21	—	0.24
Progress	—	0.19	—	—	—	—
Power	—	0.20	- 0.18	—	—	—

It should be emphasized that in the structure of values, independence goes on the first place, both in significance and in readiness to implement it in behavior; respondents believe, autonomy acts as a life principle, which can orient their real life situation. We were wondering, whether there are interrelations between the components of creativity and those values for which a discrepancy between normative ideals and individual priorities was found. It turned out that there was no connections with safety at all; there is only one correlation between achievements and such a parameter of divergent thinking as development (the ability to refine the idea, making it more interesting, add something to the basic idea). However, the stimulation turned out to be positively associated with one component of verbal creativity (verbal originality), two components of non-verbal creativity (development, name) and with a general indicator of divergent thinking. So, the meaningful, but not expressed in a specific behavior values of “Safety” and “Achievements” turned out to be not related to creativity, but the value of “Stimulation”, reflecting the need for novelty and impressions, realizing in behavior, but not significant at the level of values and ideals, correlates with a number of indicators of creativity.

Table 03. Significant correlations between personal creative characteristics of values at the level of life ideals and their realization in behavior ($p < 0.05$)

	Creative thinking		Curiosity		Originality		Imagination		Emotionality		Sense of humor		Creative relation to the profession	
	Me-real, value expression in	Me-ideal, proclaimed value	Me-real, value expression in	Me-ideal, proclaimed value	Me-real, value expression in	Me-ideal, proclaimed value	Me-real, value expression in	Me-ideal, proclaimed value	Me-real, value expression in behaviour	Me-ideal, proclaimed value	Me-real, value expression in	Me-ideal, proclaimed value	Me-real, value expression in	Me-ideal, proclaimed value
Conformance	—	0.19	—	—	—	—	—	—	0.28	-	—	—	—	—
Traditions	—	—	—	—	—	—	—	—	0.19	-	—	—	—	—
Kindness	—	0.18	—	—	—	—	—	0.20	0.19	-	0.20	0.26	—	—
Universalism	—	0.29	—	—	—	—	—	0.19	—	-	0.21	0.24	—	—
Samos-	0.27	0.19	0.18	0.25	0.35	0.23	0.27	—	—	-	0.21	—	0.35	0.24
Loyalty	—	—	—	—	0.35	—	0.18	—	—	-	—	—	0.19	—
Stimulation	—	—	—	—	—	—	—	—	—	-	—	—	—	—
Hedonism	0.21	—	—	0.19	—	0.30	0.23	—	—	—	—	0.20	0.27	0.19
Progress	—	—	—	—	—	—	—	—	-0.23	—	—	—	—	—
Power	—	0.17	—	—	-0.23	—	—	—	0.24	—	—	0.25	—	—

In general, the connection between the values “Independence” and “Stimulation” with the characteristics of creativity are logical and correlate with the theory of dynamic relations between value types of S. Schwartz, which considered the values of “Independence” and “Stimulation” in the pole of “Openness to Change” as opposed to “Conservation”, which includes the values of security, conformity and tradition. And for a creative person, openness to change is a necessary installation, which is impossible without creative activity.

The analysis of the value connection between personal creative features (see Table 3) and comparison with value correlation with test creativity indexes (see Table 1,2) enables us to concentrate on the three core aspects. First, the structure of the interconnection between value orientations and the personal creative characteristics self-esteem is more diverse, although more controversial. This can be explained by the fact that the expression of one’s personal qualities, self-assessment of existing creative characteristics and one’s correlation with the ideal helps to determine how valuable and important these qualities are, which allows to empower meaning and significance to creative activity, while creative abilities themselves are connected with value system to a much lesser extent.

Second, the greatest number of positive and uncontroversial connections of personal creative characteristics was found between the “Independence” value, which corresponds to the situation in the described above connections between value orientations and the characteristics of test creativity. It is possible to point that the “Independence” value is the most important for the actualization, maintenance and giving meaning to creative activity.

Third, there contradictive connections between personal creative characteristics and values, which show the discrepancy between normative ideals and individual priorities, were revealed. The explanation of this phenomenon requires further research.

7. Conclusion

Thus, according to the results of the study of the structure of interconnections between the parameters of verbal creativity, divergent thinking and personal creative characteristics and value orientations, we can draw the following conclusions:

1. The structure of creativity, consisting of the characteristics of verbal and non-verbal creativity, divergent thinking and personal creative qualities is reconcile with the structure of values that exist at the level of normative ideals and individual priorities, through such a type of values as “Independence”, whose goal is independent thinking and choice of the behavioral strategy, creativity and research activity.
2. The revealed interconnections allow considering creative abilities as a source the value of independence expression, and, vice versa, independence of thinking of thought and action can be a factor stimulating the creative process and creative activity.
3. Reflection of one’s personal qualities, self-assessment of the existing creative characteristics and their correlation with the ideal situation helps to identify the value and importance of these qualities, and enriches creative activity with significance and meanings.

4. Extreme significance of the “Independence” value both at the level of life principles and at the level of values expressions in behavior, as well as a huge amount of positive connections between this value and different parameters of creativity and personal creative qualities, suggests that independence as a value in the greatest degree can contribute to self-actualization and personal creative self-realization, contrary to the “Achievement” value, which the respondents identified as significant, but not realizable value in the behavior. This assumption requires further verification.

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