

*Chapter 3*

**IMPLICIT THEORIES AND SELF-ESTEEM  
OF CREATIVITY IN THE STRUCTURE  
OF SELF-CONSCIOUSNESS**

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**ABSTRACT**

The connection between objective indicators of creativity and its representation on the level of self-consciousness (in the form of direct self-esteem and implicit theories of creativity) is discussed in this chapter in the context of the acceptance of the role of uncertainty. We created a new questionnaire for implicit theories of creativity (CIT) that diagnoses four scales: Originality (creativity in the usual conditions), Intelligence

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and personal potential (use of components of intelligence and personal potential), Novelty (creativity in uncertain situations) and Activity (creativity in activity and communication) as proved by factor analysis and structural modeling.

We tested creative professionals (writers, composers and theater and cinema directors, all - recognized by the community,  $N = 52$ ), which allows us to introduce an external criterion of creativity. The study we present is dedicated to the functioning of implicit theories of creativity and self-esteem of creativity as parts of the intellectual and personal potential of a person. It is shown that creativity is represented at the self-consciousness level in the form of self-esteem and implicit theories (which are connected hierarchically), and the process of self-evaluation reflects objective indicators of creativity but is also based on the implicit theories of creativity. Creative professionals demonstrate the link between creativity and personal attributes of tolerance for uncertainty, intuition, the self-esteem of creativity, and creativity itself. The professional development of a person within creative professions is accompanied by the development of a solid system in which self-esteem acts as an integrative element. The results prove that a person reduces their level of uncertainty of a self-esteem process by using implicit theories as a basis.

**Keywords:** creativity, acceptance of uncertainty, implicit theories of creativity, self-esteem of creativity, intuition, self-consciousness, experientiality

## INTRODUCTION

The components that comprise self-consciousness still need to be distinguished. One of the key components of a person's self-concept is one's self-esteem. Self-esteem can be understood in a number of ways: as a generalized affective assesment of self, or as a sum of specific assessments of different characteristics.

It is not clear if self-esteem is an adequate reflection of an objective level of one's ability (for example, creativity). This problem lies not only in the way self-esteem functions but also in the ambiguity of criteria self-esteem is based on. The results of studies of the connection between self-rated creativity and its objective level are not consistent both in terms of the procedure (wherein different measures of creativity are used), and the

results. A. Furnham and colleagues showed that creativity self-esteem predicts only 5.5% of non-verbal creativity (Furnham, Zhang and Chamorro-Premuzic 2005). The self-esteem of creativity in different domains shows low or not significant connection with the objective level of creativity (Reiter-Palmon, et al. 2012).

Another problem is to define a basis for self-evaluation within different personality traits. Studies usually use the factorization of the subject's self-esteem in different domains to solve this problem, but their results tend to be mixed.

J.C. Kaufman and J. Baer (2004) factorized self-esteem of creativity in ten domains (science, interpersonal relationships, writing, art, interpersonal communication, solving personal problems, math, craft and body/physical movement) and found that it had a three-factor structure. According to their results, it includes Creativity in Empathy/Communication, "Hands on" Creativity and Math/Science Creativity. Later on, their results were duplicated by D. Rowlings and A. Locarnini (2007).

Similar results were established by Z. Ivcevic with colleagues in their study of creative behavior (Ivcevic and Mayer 2009). According to their results, self-esteem of creative behaviour is a three-level structure, with such factors as Creative lifestyle (crafts, interpersonal creativity, visual creativity, and literature; this factor is similar to communication in Kaufman and Baer's model), Arts (music, theatre, dance; similar to manual creativity), and Intellectual achievement (creativity in technology, science and academic achievements; similar to science creativity). Some authors understand creativity as more a dynamic phenomenon (Corazza 2016).

The self-esteem of creativity in different domains usually shows a harmonic factor structure, but often some domains are left out (such as math creativity or architecture creativity). A creative person can be defined as an adaptor or an innovator (Gralewsky and Karwowski 2016). Some papers touch on cultural differences in attitude towards different kinds of creativity: for instance, it is shown that teachers are biased towards art creativity in Western cultures and towards science in Eastern settings (Bereczki and Karpati 2018). It means that some domains are not perceived as important

for a person's creative potential implementation, therefore these domains are not included in one's implicit theories.

One of the ways to conceptualize creativity within one's self-conscience is through so-called creative self-believes (CBSs) that can be defined as persons convictions about his or her creative abilities, or a mix of self-efficacy, self-concept, and self-esteem (Karwowski and Barbot 2016), but the studies of this concept are usually limited to little-c and mini-c creativity.

The term "implicit theories" (as opposed to "explicit theories", scientific notion of a phenomenon) stands for the range of folk conceptions of a given phenomenon that are formed nonsystematic in the course of one's life. Implicit theories of abilities are important because they relate to a person's expectations and self-esteem (Sternberg, Forsythe, et al. 2000). At the same time there is no consent in the understanding structure of implicit theories (Luftenegger and Chen 2017).

The studies of implicit theories of creativity usually focused on the differences in the understanding a phenomenon of creativity between certain groups of people. This comparison of research groups helps to reveal the characteristics that are important for creative potential. Frequently these characteristics include intelligence, curiosity, imagination, resourcefulness. The inclusion of intelligence can be interpreted in terms of the threshold theory: the creative potential realization demands some base level of intelligence (Runco 2006).

The structure of self-esteem as a component of a person's self-conscious was shown in the example of self-esteemed intelligence. According to A. Furnham (2001), the studies usually show the correlation between self-rated and psychometric intelligence. There is evidence that latent variable Intellectual Self-concept (which includes different kinds of intellectual self-esteem parametres) acts as a mediator between intellectual and personal traits such as Acceptance of uncertainty and risk (Kornilova and Novikova 2012, Novikova and Kornilova 2013). The debate about whether creativity and intelligence are connected and precisely how (some authors even consider them to be one united trait) raises a question whether creativity and its self-esteem are connected in the same manner as intelligence and its self-esteem are.

A person's self-awareness has a leveled structure and it suggests two bases for the self-esteem of creativity. One is an estimation of own creative potential activity. Another one is based on one's implicit theories of creativity as an individual representation of a phenomenon of creativity (and it is located deeper within the structure of self-awareness).

The criteria of self-esteem are varied because the understanding of what it means to be creative is vague. We suggest to address this problem by analyzing one's objective level of creativity and its representation in one's self-awareness (in the form of direct self-esteem of creativity and implicit theories), and the link between the two.

The latent variable Acceptance of uncertainty and risk includes the experiential ability (Kornilova and Novikova 2012). The latter is important for regulating a person's thinking. At the same time, it is connected to the novelties one creates while solving the uncertainty (Kornilova and Razvaliaeva 2017); they are shown to play an important role in the process of thinking according to O.K. Tikhomirov's theory (Babaeva, et al. 2013). Tolerance for uncertainty also acts as a predictor of personal choice, in particular among creative professionals (Pavlova and Kornilova 2016). At the same time, we still do not know what the connection between tolerance for uncertainty, experiential ability, and creativity self-esteem is.

The structure of creativity is yet to be established. It involves not only the objective level of one's ability but also a variety of concepts influencing the creative activity, such as implicit theories of creativity.

There are cultural differences in understanding creativity (Kaufman 2006, Loewenstein and Mueller 2016). R. Sternberg (2018) argues that cultural differences in implicit theories of creativity do not mean that the creativity differs across groups but rather that it can be conceived differently in different settings.

Based on the definitions of creativity (Runco 2006) given by psychology students we developed a questionnaire for assessing implicit theories of creativity called CIT (Pavlova 2014). We assumed that psychology students base their definitions not only on their implicit theories but also rely on scientific understanding of the term CIT has four scales: (a) originality under ordinary conditions (*originality*), (b) use of one's intelligence and personal

potential (*IPP*), (c) creativity in uncertain situations (*novelty*), (d) creative activity and communication (*activity*).

According to R. Sternberg (Sternberg, Forsythe, et al. 2000) implicit knowledge changes into explicit through preliminary views of the science community. Scales of CIT questionnaire can be compared to scientific views on creativity: *novelty* represents the understanding of creativity as functioning under uncertainty; *IPP* reflects the tendency to study intelligence and personal potential of a creative person; *activity* – the course of life of a creative person; and *originality* describes creativity as an ability to develop new ideas.

Creativity scholars usually divide creativity into so-called “Big-C” and “little-c”. “Big-C” is a level of creative geniuses, who achieved high success in their field, whereas “little-c” had to do with everyday life creativity. The researchers of “Big-C” argue that significant creative achievements are usually based not only on creative abilities but also on experience and training in the field, for example so-called “10-year rule” (Hayes and Mellon 1989). In addition, two more levels of creativity sometimes are mentioned: “mini-c” (subjectively original activity, “re-inventing the wheel”), and “professional-c” that represents the creativity of people who are professionals in some field, but haven’t achieved legendary success (Kaufman, Beghetto, et al. 2010).

We invited professionals in creative fields (writers, composers, directors) to participate in our study, in an attempt to solve the problem of objective assessment of creativity. Involving professional artists is a known approach in the literature, but they usually act as experts (Csikszentmihalyi 1996).

The integral nature of self-esteem and implicit theories of creativity are emphasized in the concept of creative self-beliefs, CBS (Karwowski and Barbot 2016). Established artists presumably should have fully formed

self-esteem of creativity and implicit theories of creativity (that are based on their professional experience). Researches usually stress that Big-C artists have a high awareness of their creativity (Kozbelt 2007).

The *main hypothesis* of the study was the following: self-esteem creativity includes both direct self-esteem and implicit theories of creativity and also is correlated to the objective level of one's creativity and tolerance for uncertainty. To study the functioning of implicit theories of creativity, its self-esteem, and other characteristics within the intelligence and personal potential, we tested the following hypotheses:

- H1: Creativity functions within self-consciousness of a person in a form of implicit theories of creativity and its self-esteem, which in turn are connected hierarchically.
- H2: The objective level of creativity is the basis of its self-esteem and at the same time implicit theories of creativity act as the base of the estimation process.

## **METHODS**

### **Participants**

Fifty-two professional artists participated in the study (79.2% male, age Mnd = 45.65, SD = 10.49):

- 21 professional writers (80.9% male, age Mnd = 49.57, SD = 9.21), award-winning poets and novelist translated into dozens of foreign languages,
- 18 professional composers (83.3% male, age Mnd = 44.61, SD = 9.21), award-winning authors of large-scale works (operas, symphonies, oratorios, etc.), performed at concerts and festivals in different cities around the world;
- 14 theatre and cinema directors (71.4% male, age Mnd = 40.31, SD = 12.78), award-winning authors of drama performances or full-length films.

All participants were carefully selected for the study based on their achievement in the field and recognition in the artistic community.

## Measures

*Verbal creativity* was assessed using two different questionnaires:

1. *The Creative Stories task*, which is part of a comprehensive assessment of intelligence ROADS by Kornilov and Grigorenko (2010), where participants are asked to write a short story based on one of five proposed unusual titles;
2. The modification of Sternberg's *Cartoon Task* (Pavlova and Kornilova 2013, Sternberg and The Rainbow Project Collaborators 2006), where participants are asked to write titles for six different cartoons (we used three cartoons drawn by Russian artists and three original cartoons taken from The New Yorker Magazine archive).

Three and four experts (respectively) assessed the responses using four scoring criteria (so-called rubrics): originality, complexity/cleverness, emotionality/humor, and task appropriateness. The rubrics were originally developed by R. Sternberg and colleagues. We used a multifaceted Rasch modeling (MFRM) approach as implemented in FACETS (Linacre 2006) to calculate the final score for each participant.

*The self-esteem of creativity* was assessed using the procedure developed by A. Furnham see (Furnham 2001): subjects were presented with a graph of normal distribution and asked to assess their level of creativity in IQ-scores.

*Implicit theories of creativity* were assessed using CIT Questionary (Pavlova 2014), that assess four scales: originality (Cronbach's  $\alpha = .828$ ), intelligence and personal potential (Cronbach's  $\alpha = .789$ ), novelty (Cronbach's  $\alpha = .753$ ), and activity (Cronbach's  $\alpha = .788$ ). You can see the definitions of scales above on p. XX).

*Tolerance for uncertainty.* We used the New Questionnaire of Tolerance for Uncertainty NTN (Kornilova 2010) to assess tolerance for uncertainty (TU, an ability to act in uncertain situations), intolerance for uncertainty (ITU, a tendency to avoid uncertainty in the “world of ideas”), and interpersonal intolerance for uncertainty (interpersonal ITU, a tendency to seek certainty in interpersonal relationships. This questionnaire is based on the understanding of tolerance for uncertainty as a personal trait. Intolerance for uncertainty is considered to be an independent scale and not the opposite of tolerance.

*Experientiality* were assessed using two subscales of Rational-Experiential Inventory, REI (Epstein, et al. 1996, Kornilova and Razvaliaeva 2017): experiential ability (EA, the self-esteem of one’s intuitive ability) and experiential engagement (EE, the reliance of one’s intuition and feelings).

## **RESULTS**

### **Correlation Analysis**

The correlations between the variables were studied using Spearman’s  $\rho$  correlation coefficient (see Table 1). The correlation between implicit theories of creativity with TU, as well as the correlation between novelty and activity with EA was significant. The self-esteem of creativity significantly correlates with the objective level of one’s creativity, assessed with Cartoon task, and also EE.

**Table 1. The correlations between implicit theories of creativity, its self-esteem, two indexes of creativity (Creative stories and Cartoon task), TU and Experientiality (Spearman's correlation coefficient)**

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	
1.	Originality (CIT)	1												
2.	IPP (CIT)	<b>.425**</b>	1											
3.	Novelty (CIT)	<b>.725**</b>	<b>.636**</b>	1										
4.	Activity (CIT)	<b>.735**</b>	<b>.516**</b>	<b>.653**</b>	1									
5.	Self-esteem of creativity	.192	-.141	.151	.232	1								
6.	Creativity (Creative stories)	-.081	-.287	-.282	-.211	-.060	1							
7.	Creativity (Cartoon task)	-.087	.013	.011	-.039	<b>.429**</b>	.005	1						
8.	Tolerance for uncertainty (NTN)	<b>.376*</b>	<b>.365*</b>	<b>.476**</b>	<b>.368*</b>	-.223	.087	-.163	1					
9.	Intolerance for uncertainty (NTN)	-.100	.116	.065	-.009	-.039	-.019	-.151	.023	1				
10.	Interpersonal intolerance for uncertainty (NTN)	-.164	.059	-.152	-.265	.121	-.038	.101	-.107	<b>.422**</b>	1			
11.	Experiential ability (REI)	.300	.170	<b>.372*</b>	<b>.403*</b>	.248	.027	.105	<b>.473**</b>	.145	-.018	1		
12.	Experiential engagement (REI)	<b>.415**</b>	.132	<b>.480**</b>	<b>.355*</b>	<b>.407**</b>	.119	.145	<b>.332*</b>	.024	-.082	<b>.779**</b>	1	

Note \*p < 0.05, \*\*p < 0.01.

### Predictors of Implicit Theories of Creativity and Its Self-Esteem

We used linear regression (enter method) to study predictors of implicit theories of creativity and its self-esteem. In the first part we used scales of CIT questionnaire as the dependent variables, predictors were included in the analysis in three blocks: creativity (Creative stories, Cartoon task, and self-esteem of creativity), intuition (experiential engagement and experiential ability), and tolerance for uncertainty (TU, ITU, and interpersonal ITU). Part two studies the predictors of creativity self-esteem, three blocks were used: creativity (Creative stories and Cartoon task), tolerance-intolerance for uncertainty (NTN scales), and implicit theories of creativity (scales of CIT questionnaire). Significant predictors are shown in Table 2.

**Table 2. Predictors of implicit theories of creativity and its self-esteem (linear regression, enter method)**

Dependent variable	Predictor	B	SE	t
Originality (CIT)	Constant	14.428	6.193	2.330
	Tolerance for uncertainty (NTN)	.187	.070	2.693
IPP (CIT)	Constant	15.078	7.097	2.124
	Creativity (Creative stories)	-.543	.275	-1.975
	Tolerance for uncertainty (NTN)	.160	.080	2.006
Novelty (CIT)	Constant	12.179	5.287	2.304
	Creativity (Creative stories)	-.462	.205	-2.254
	Tolerance for uncertainty (NTN)	.175	.059	2.950
Activity (CIT)	Tolerance for uncertainty	.174	.094	1.840
Self-esteem of creativity	IPP (CIT)	-4.535	1.881	-2.410
	Activity (CIT)	2.611	1.562	1.711

Regression analysis showed that tolerance for uncertainty is a predictor of all four scales of implicit theories of creativity. At the same time, creativity (measured with Creative stories task) negatively predicts IPP and novelty scales of implicit theories of creativity.

In the second part of the analysis, we used self-esteem of creativity as a dependent variable. We found that the objective level of creativity (measured with Creative stories and Cartoon tasks) has a tendency to predict self-esteem of creativity, but it becomes insignificant when implicit theories

of creativity are entered. IPP and activity scales of CIT are also the predictors of creativity self-esteem.

## **DISCUSSION**

In this paper, we found a connection between self-esteem of creativity, its implicit theories and some personal traits in the sample of professional artists. We showed that implicit theories of creativity correlate with tolerance/intolerance for uncertainty; artists disposed to act under uncertainty at the same time see creativity as an ability to function in new and ordinary situations, show creative abilities in different kinds of activity and manifest their intelligence and personal potential. Scales of CIT questionnaire also correlate with experientiality. Based on the analysis we can assume that implicit theories of creativity are connected with the self-esteem of creativity through a person's intuition.

We showed a correlation between self-esteem of creativity and creativity itself, which proves the results obtained for a different creativity measure – Guilford divergent thinking task (Batey, Furnham and Safiullina 2010).

Using regression analysis, we established predictors of implicit theories of creativity of professional artists, namely personal characteristics of tolerance for uncertainty and objective level of creativity. At the same time, implicit theories themselves predict self-esteem of creativity. It proves that the process of self-estimation is guided by one's view of what it means to be creative.

Objective level of creativity negatively predicts implicit theories of creativity. This indicates that less creative people (among creative professionals) tend to see creative people as realizing their intellectual and personal potential under uncertainty.

Thus professional development within creative professions implies not only the development of creative abilities themselves but it also implies the reassessment of the essence of said abilities and their necessity. Established artists' implicit theories of creativity are engaged in an integrated hierarchy

of characteristics, such as self-esteem of creativity and tolerance for uncertainty.

In previous works, it was shown that students' intolerance for uncertainty interfere with their creativity whereas high tolerance for uncertainty does not guarantee high creativity (Kornilova and Kornilov 2010). We showed a different connection for a criterion sample of creative professionals. Tolerance for uncertainty predicts their understanding of creativity (for all scales of CIT). Therefore, tolerance for uncertainty in professional artists exists in a more integrated system in comparison with students (who have yet to develop professionally).

Subjective self-esteem of intelligence is shown to be constructed based both on its objective level and person's readiness to use uncertain information (Kornilova and Novikova 2012). Introduction of implicit theories allows us to discuss the deeper connection between the objective level of ability (in this case – creativity) and acceptance of uncertainty. Our results concretize this connection: we show that implicit theories mediate self-esteem and tolerance for uncertainty (see Fig. 1). These results prove the assumption that personality traits (in our study – tolerance for uncertainty) cause the self-concept characteristics (Karwowski and Lebuda 2016).

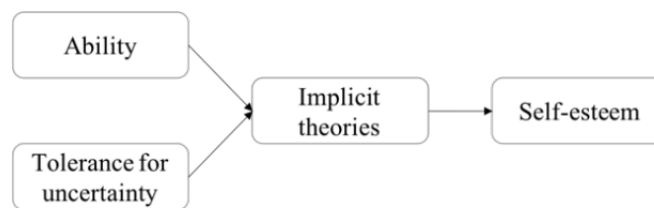


Figure 1. The theoretical model of the relationships between an ability, its implicit theories, its self-esteem and tolerance for uncertainty (based on data obtained for creativity).

Gralewski and Karwowski show that teachers assess their students' creativity based on their implicit theories of creativity (Gralewsky and Karwowski 2016). We showed that it is also true for self-assessment. Creative self-efficacy sometimes is considered to be a result of interpreting

previous success, that, in turn, relies on the abilities (Karwowski and Barbot 2016). Our results allow us to include implicit theories in this theoretic structure.

Self-esteem (in the form of direct self-esteem and implicit theories) manifests itself in self-understanding and self-relation, and it acts as an integral formation of the dialogical self-consciousness. To esteem oneself, a person is continually trying to answer a question “who am I?”. This question is ambiguous because its criteria are not certain and the answer keeps changing together with one’s developing. Our results are a compelling argument that while assessing his or her creativity, a person reduces a level of uncertainty by using implicit theories of creativity as a foundation.

The results support H1 and H2.

## CONCLUSION

Implicit theories of creativity relate to personal characteristics of tolerance for uncertainty and experientiality, and self-esteem of creativity and its objective measures. In the process of professional development, implicit theories of creativity integrate into the system of self-consciousness. At the same time, the process of self-estimation also develops and finds its foundation in the implicit theories.

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