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# COGNITIVE COMPLEXITY OF PARANOID PATIENTS

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**Summary**. *From both clinical and phenomenological perspective, paranoid construction is the most striking characteristic of the paranoid process. By its nature it represents the cognitive organization by which paranoid patients organize the meaning of the world around them. Cognitive complexity, as one of the characteristics of cognitive style, marks the level of categorical differentiation given through quantitative basis of classifications used for differentiation of reality. In this study, cognitive complexity was measured in paranoid psychotic patients compared to normal subjects. Cognitive complexity was measured using the Role Construct Repertory Test (REP) (Bieri, 1981) which has its base in the theory of personal constructs. Two variants of the test were given: in the first the role-carriers were people from the patient's personal life, and in the second the members of a small psychotherapeutic group of paranoids. Measurements were done in the phase of presence of psychotic symptoms and after their withdrawal. The results show that paranoid patients exhibit lower cognitive complexity in all the measurements, compared to normal subjects. This suggests a consistently generalized evaluation of others, based on subjective criteria. Uniformity of evaluation shows that there is no recognition and acceptance of differences attributed to others. Expectations of the paranoid, which seek for confirmation of the projected aggression or an explanation for the feeling of vulnerability in the outer world, determine the meaning that the patient ascribes to his experience. This type of cognitive organization (with generalized, rigid concepts based on personal principles) requires an adjustment of communication and manner of therapeutic engagement in the psychotherapeutic process.*

**Key words**: *Paranoid, cognition, cognitive complexity*

## Introduction

The paranoid process is a complex mechanism the basis of which is a polarization of the experience of the self and the world, determined by introjective poles of aggression and narcissism. Mechanisms that this paranoid process is formed by involve introjection, projection, and paranoid construction (1). While introjection and projection determine the dynamics of the paranoid process, paranoid construction is the most prominent clinical and phenomenological characteristic of the paranoid process. Paranoid construction is a cognitive organization, defensively determined, by which the meaning is created and related, thus enabling the perception of the self and the surrounding reality. The forming of this meaning is dominantly influenced by subjective needs and specifications of the cognitive organization of the paranoid, leading thus to delusional elaboration of reality in psychotic paranoid patients. The importance of the paranoid construction (as a system of attitudes, beliefs, and interpretations of reality) is evident in that it is the first field we encounter when working with paranoid patients (a delusional system is the basis of the clinical picture) and, at the same time, it is also the only space we can approach in psychotherapeutic treatment of the patient.

According to Magaro (2), the formal characteristic of cognitive organization of the paranoid represents a developed and hyper-organized conceptual organization with a clear hierarchical structure. A paranoid cognitive structure is always formed according to logical rules (which is why it gives the paranoid patient assuredness in his own judgment), although the concepts are organized on the basis of subjective needs and expectations, not necessarily in accord with reality. This type of cognitive structure determines and controls the entire process of realization. Expectations of paranoids, who seek confirmation for the projected aggressiveness or explanation for their own feeling of vulnerability in the outside world, direct cognitive organization in a way that confirms these expectations. Cognitive organization of the paranoid creates the meaning determined in advance which in turn enforces the cognitive organization itself, thus emphasizing the vicious circle of the paranoid pathology. The paranoid does not need a realistic judgment of the situation, nor is it easy for him to achieve it.

Cognitive style is defined as a relatively stable individual characteristic of the subjects' cognitive processes, which is expressed in their use of cognitive strategies. Cognitive style determines characteristic ways in which individuals conceptually organize their surroundings so as to attribute it a psychological meaning. Cognitive style is observed through several dimensions, and one of

them is cognitive complexity. Cognitive complexity represents a degree of categorical differentiation given through a quantitative basis of classifications used for differentiation of reality (3). Cognitive complexity is based on the theory of personal constructs according to which behaviour is a consequence of interpretation of reality through a system of bipolar determination of meanings. The system of personal constructs (i.e. cognitive organization) as a conceptual grid "sifts" reality and determines it by its own form. Cognitive complexity marks the complexity, i.e., the richness of constructs that an individual uses in determining the world.

This paper explores the characteristics of cognitive complexity in paranoid psychotic patients by comparison with normal subjects. Precise specification of ways of categorization in paranoids can determine the ways of therapeutic influence.

## Patients and Methods

The study was conducted at the Psychiatric Clinic in Gornja Toponica. It included 48 paranoid psychotic patients from nosological categories: paranoid schizophrenia (22 patients or 45.84%), persistent disorder with delusions (17 patients or 35.41%), other acute psychotic disorders with delusions (6 patients or 12.5%), and psychotic complications of paranoid personality disorder (3 patients or 6.25%) (according to the Tenth International Classification of Mental Disorders). The average duration of paranoid disorder was 2.4 years and most of the patients were hospitalized for the first time (22 patients or 45.84%). In the paranoid group 87.5% had one to three hospitalizations. The average age of paranoid patients was 31.8 years. Educational profile of the group was: 25 patients were university students or graduates, while the rest completed high school. Patients with the paranoid syndrome were initially identified by the diagnosis listed on their hospital records; however, additional screening was applied seven days after admission. Conditions for inclusion of patients in the study were: diagnosis established independently by two different psychiatrists, at least an average intellectual functioning (confirmed by IQ tests), non-existence of data about organic pathology of CNS in the anamnesis of illness. For every patient a dossier was opened containing a psychiatric sheet, a scale for clinical estimate of delusional ideas of persecution, and a psychological profile dossier (containing intelligence estimate on a WB scale, P18 questionnaire for estimation of paranoid symptoms and Machover technique of drawings of human figures with the estimation of paranoid elements in the drawings). Patients with these diagnoses underwent a pharmacological treatment and individual psychotherapeutic treatment. They were included in the group under psychotherapeutic treatment, i.e., as five Small Groups of paranoid patients (each containing 7-10 patients). Condition for entering the group of normal subjects was that neither an anamnestic nor clinical record of any kind of mental disorder was existent. This group comprised 52 university students of the fourth year (average age 22.3 years) chosen by method of random choice. Cognitive complexity is quantitative measure of the formal aspect of cognition and it becomes definite when development of cognitive structure has been accomplished. As each individual subject fulfilled this condition, the average age difference between paranoids and controls was not important.

The Role Construct Repertory Test, modified according to Bieri, was used for the measurement of cognitive complexity (4). This test identifies ten types of roles (with which the patient identifies familiar persons from his surroundings). The subject is given constructs for evaluation of each role on a scale of six points (from +3 to −3). The evaluation of cognitive complexity is induced by comparison of evaluations given to one person in different constructs. The highest possible score is 450 and it represents low cognitive complexity. Besides using the test with given types of roles (REPr), we also used a test where, instead of given types of roles, the names of the members of the Small Group of paranoids were given and evaluated based on the same constructs (REPg). This test was first given at the beginning of the study (in the phase of manifested psychotic paranoid symptoms) and repeated about two months after the first testing (after disappearance of psychotic symptoms).

## Results

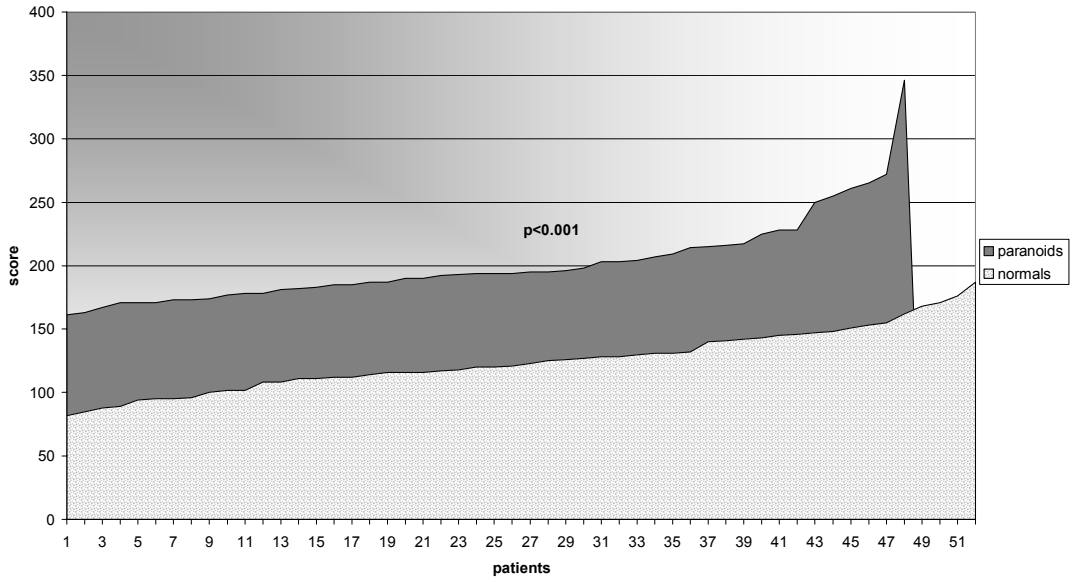
In the cognitive complexity test with given roles (REPu), paranoid patients show a statistically significantly higher average score value ($\overline{X} = 202$) in comparison to normal subjects ($p < 0.001$).

The span between the scores in the group of paranoid patients is from 160 to 270 (higher score signifies lesser cognitive complexity), with the greatest number of patients scoring around 190. The span in the group of normal subjects is from 80 to 190, with almost half of the subjects (25) scoring between 110-130.

The measurement of cognitive complexity with REPg shows an average value of 231.9 in the first measurement, and 197.2 in the second measurement, which statistically represents a significant difference ($p<0.001$). A comparison of results achieved in REPr and the first measurement of REPg shows a statistically significant difference ($p<0.01$). Both measurements show a significantly higher score in the test done by the paranoid group than by the normal controls.

Table 1. Comparison of cognitive complexity among paranoids on REPg (first and second measurement) and normals on REPr

| Groups | T-test | P |
|---|---|---|
| REPg I vs REPg II | 3.42 | <0.001 |
| REPr par. vs REPg I | 3.04 | <0.01 |
| REPr par. vs REPg II | 0.63 | – |
| REPr nor. vs REPg I | 12.05 | <0.001 |
| REPr nor. vs REPg II | 11.35 | <0.001 |




Graph. 1 Cognitive complexity on REPr test

Considering different results that patients in the paranoid group achieved, a correlation analysis was done which showed lower values (0.37) between REPr and the first measurement of REPg. Correlations between REPr and the second measurement of REPg, as well as between the two measurements of REPg, are significantly higher (0.57 and 0.64, respectively).

## Discussion

Our study shows that paranoid patients have lower cognitive complexity in all measurements, compared to normal subjects. Using the REP test with names of group members, we find lower cognitive complexity at the beginning of the psychotherapeutic process than at its end.

Cognitive complexity is based on the theory of personal constructs. Personal constructs refer to the system of bipolar meanings which are used for interpretation of reality and which are the bases of behaviour in general. Distortions of meanings are numerous and determined by all formal and content-based characteristics of a personal system of constructs (personal determination of meaning of the construct itself, as well as the contrasting poles – which do not have to objectively represent contrasts, the scope of applicability, permeability, etc.). Cognitive complexity is one of the formal characteristics of the system of constructs and it represents complexity, i.e., richness of constructs, which the person uses in his/her determination of the world.

The available literature in the field contains very few studies on cognitive complexity in psychotic patients. Although Kelly (5) provides an account of the characteristics of the system of constructs in certain mental disorders (schizophrenia and paranoid states, among others), there are not many studies in which a practical verification of these, theoretically set assumptions in psychotics, has been done (6,7).

Bieri's modification of the REP test as a measure of cognitive complexity was also used in this study because its advantages are evident in work with psychotic patients. The already given constructs (according to the author: modified for individuals with secondary school education) provide for the uniformity of the categories used. This allows for comparison, while simultaneously lessening the effects of psychosis to mere understanding and solving the test. In the REP test with given roles, cognitive complexity was determined in such a way that patients, in relation to given constructs, made estimates about the chosen individuals from their surroundings who fit the given roles. Using the REP test with names of group members at the beginning and at the end of psychotherapeutic treatment allows for a comparison of the evaluation method in a situation when expectations dominate (group members are still getting acquainted) and there is an emphasis on the paranoid way of functioning (first measurement), as well as in a situation when these two factors are moderated (withdrawal of psychotic paranoid symptoms and mutual introduction of group members – second measurement). The test with names of group members provides an insight into mutual evaluations of patients but considering that this study does not elaborate on the content but on the form of cognition this content-based aspect was not analyzed.

Posing the test in such a way that certain individuals are given marks that indicate the intensity (and polarity) of constructs (or attributes) implies that the subjects with non-differentiated approach – categorized as cognitively simple – give identical marks to different constructs. The so far research of individuals with lower cognitive complexity show that these individuals do not make correct estimates of difference between themselves and others, as well as that in situations when discrepant information is presented they have a tendency to estimate the situation exclusively by opting for one aspect of the situation. Simultaneously, the correctness of their estimation does not increase parallel with the in-

crease in the number of information, and their attitudes are less susceptible to change in communication (8).

Determination of cognitive constructs in paranoid patients done by Bannister (9) points to more determined constructs of unchangeable intensity with a tendency to place elements in a single pole, without a tendency to create contrasts. Other researches show that the paranoids have constructs connected in a way that is too consistent, as well as that they have badly distributed stable rigid concepts (10).

Paranoid patients show non-differentiation of estimation of people according to different constructs in all three measurements, compared to normal subjects. What could be said is that paranoid patients manifest a lack of synchronization of the basic three dimensions of attribution (affective, evaluative and descriptive). There is no reason to suppose inadequacy, i.e., incorrectness of the descriptive dimension (condition for inclusion into the Small Group is at least average intellectual functioning). One would say that the existence of affective-evaluative consistency (correlation and mutual influence of affective and evaluative dimensions) conditions the stereotypic evaluation. The consistent way of evaluating all people (from personal surroundings and group members) shows that it is not a specific affective relationship, connected to one person only, which paints-over the way of evaluating, but it is a general approach to evaluation. This kind of uniformity of evaluation, which precisely by this lack of differentiation unavoidably proves its (at least partial) incorrectness, suggests a consistently generalized evaluation of others (11). There is no recognition or acceptance of differences in characteristics. This is even more clearly seen during the first evaluation of group members – the score is statistically significantly higher than in the other two measurements. The first measurement takes place in conditions characterized by insufficient mutual acquaintance of the group members, but also by a clearly visible distrust, distance and hostility, which "sharpens" the way of evaluation, pointing to the defensive-adaptive dynamics of generalization. In the second measurement the results are equalized with the ones obtained by the REP test with given roles, confirming thus the permanence of the evaluation manner itself. The difference between the first measurement of REPg and measurement of REPr shows that the psychosis itself does not change the way of evaluation (patients do both tests at the same time) but that the lack of knowledge of the situation which is being evaluated (meeting with the unfamiliar people in the Small Group of paranoids) emphasizes the paranoid way of evaluation.

If we try to explain and show the specificity of the cognitive style of the paranoid through the theory of personal constructs, then we actually speak of the way and characteristics of conceptual organization. The basic assumption, based on positions of constructive alternation, puts individuals in an active relationship with the world. The assumption the individual is creating (constructing) helps him/her capture the familiar in new circumstances by using the past and, at the same time, ascribing to them unique qualities. In that way, the current evaluation of the present is connected to the past (individual experience) and to the future anticipated through that dimension of meaning the world is being interpreted by. Consistent results in the measurements of cognitive complexity in the paranoid group suggest a consistently generalized and on-individual-criteria-based evaluation of others and indirectly point to characteristics of personal constructs in paranoids. Constriction is the characteristic way in which the paranoid views the world, narrowing the perceptive field in order to minimize the evident incompatibilities. Thus the world is not viewed as a complex unity of different and sometimes incompatible elements but is divided into clearly defined (often mutually exclusive) parts which coexist side by side without forming a whole. In other words, personal constructs of paranoid patients are rigid, impermeable and, by their nature, also preventive and constellate. This type of constructs can "impose" a determined meaning to the world, which is at the same time simplified and, due to its exclusiveness, very often incorrect. Richness and complexity of interpersonal relations that synthesize different levels and ways through which the meaning is manifested are marked by enlarged requirements for integration of complex, complementary or contradictory aspects that paranoids solve by "simplification", i.e., by rigid categorization. This characteristic of paranoid cognitive style is in accordance with other descriptions of paranoid cognition (12, 13), characterized as rigid subjective categorization into concepts that contain strong individual determinants along with general ones.

Characteristics of cognitive organization, i.e., paranoid construction, are necessary for understanding the way in which a paranoid patient experiences and distorts the world around him/her. At the same time, specificities of the paranoid way of categorization of the world and appearances show that a suitable therapeutic approach is necessary in confrontation and interpretation of contents of paranoid experience. This approach has to make it possible for the patient understand the limits created by intolerance of the ambiguity and the influence of expectations on the process of conclusion-making, and to open the way towards a more objective and flexible meaning of the existing.

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# KOGNITIVNA KOMPLEKSNOST PARANOIDNIH PACIJENATA

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Kratak sadržaj. *Paranoidna konstrukcija je klinički i fenomenološki najupadljivija karakteristika paranoidnog procesa. Po svojoj prirodi predstavlja kognitivnu organizaciju kojom paranoidni pacijent organizuje značenje sveta oko sebe. Kognitivna kompleksnost, kao jedna od karakteristika kognitivnog stila, označava stepen kategorijalne diferencijacije date kroz kvantitativnu osnovu klasifikacija koje se koriste u diferenciranju realnosti. U ovom radu merena je kognitivna kompleksnost kod paranoidnih psihotičnih pacijenata u poređenju sa normalnim subjektima. Kognitivna kompleksnost merena je Testom repertoara uloga (REP), (Bieri,1981) koji svoje uporište ima u teoriji personalnih konstrukata. Date su dve varijante testa: u jednoj su nosioci uloga bile osobe iz pacijetovog ličnog života, a u drugoj članovi male psihoterapijske grupe paranoidnih. Merenja su vršena u fazi postojanja psihotične simptomatologije i po njenom povlačenju. Rezultati ukazuju da paranoidni pacijenti imaju manju kognitivnu kompleksnost u svim merenjima u poređenju sa normalnim subjektima. To odslikava dosledno generalizovano, na subjektivnim kriterijumima bazirano procenjivanje drugih. Uniformnost procene ukazuje da nema prepoznavanja i uvažavanja razlika u osobinama drugih. Očekivanja paranoidnih, koja imaju za cilj da u spoljašnjoj sredini nađu potvrdu za projektovanu agresivnost ili objašnjenje za doživljaj vulnerabilnosti, određuju značenje koje pacijent pripisuje svom iskustvu. Ovakav tip kognitivne organizacije (sa generalizovanim, na ličnim principima organizovanim, rigidnim konceptima) podrazumeva prilagođavanje komunakacije i načina terapijskog angažovanja u psihoterapijskom procesu.*

Ključne reči: *Paranoidan, kognicija, kognitivna kompleksnost*