PSYCHO-SEMANTIC SPHERES OF THE PERSONALITY
OF THE EMPLOYEES OF CORRECTIONAL FACILITIES

Semyon Ioffe
Northam Psychotechnologies
Maxim Konobeevsky
University of Peoples Friendship
Abstract

The study described the theoretical and methodological bases of research of psycho-semantic spheres of the psyche of employees of correctional facilities (EOCF). The study further specified and defined the most important components of the structure of the psycho-semantic spheres of the personality of EOCF, including the specific structure and content of the psycho-semantic spheres of the personality of EOCF as professionals. The researchers provided practical recommendations to psychologists for psychological support of the professional work of EOCF.
Psycho-Semantic Spheres of the Personality of the Employees of Correctional Facilities

Work performance and professional duties of personnel in correctional facilities, operating in the environment of groups of unrestrained behavior (such as mass turmoil, hostage-taking, etc.), puts special demands on the personalities of penitentiary employees. As a result, the functioning of correctional facilities is further complicated by high staff turnover, unprofessional behavior of some employees, unauthorized relations with prisoners, etc.

This type of environment affects an employee’s attitudes towards psychological features that represent high risk: weapons, work, alcohol, and similar items. We believe it is possible to uncover these features through the diagnosis of various changes in the psycho-semantic structure of an employee’s personality and to predict an employee’s behavior in different work situations.

An important goal of this research is to define an effective, adaptive method to study the personality of employees from the theoretical positions of psycho-semantics. Human memory and a person’s previous experiences have been organized by semantic principle. To define the requirements and develop the stimuli for the practical part of this research encouraged us to address the analysis of the psychological structure of a word-stimulus in forms that comprised an element of psycho-semantic spheres and its semantic structure.

Words were not only "labels" designating separate subjects, actions, or qualities, but also representations of several meanings generally, i.e., the word "service" could have
many different meanings to the EOCR, including their own work or service in the army, the operating time of some mechanical object, etc.

As concluded by a number of authors (Deese, 1962; Noble, 1952), the word not only pointed out a certain subject but inevitably led to the emergence of some additional connections that included the structure of elements of relating words for an evident situation or former experience. Thus, the word became the central unit for the whole network caused by its images and connotatively connected with words that the speaking or perceiving subject detained and impeded to choose the necessary meaning (the one closest in meaning or denotative value) from all the networks of connotative values.

These complexities of the associated meanings involuntarily emerging during the perception of a given word have been studied in detail. The frequency with which these associative values have emerged has even been measured by a number of authors (Deese, 1962; Luriya, 1928). Thus, the new concept behind each word has been entered into a "semantic field.” The psycho-linguistic concept of the semantic field represented a set of words together with their associations.

The question has been whether it was possible to have a detailed and scientifically proven approach to the psychological research of psycho-semantic spheres to show which real connections were stimulated by a word and, if possible, to analyze the degree of probability of occurrence of these connections and degrees of affinity in which the separate components of this semantic system existed. In addition, were there any methods of objectively studying these semantic fields and their various incoming components?
Attempts to solve these problems have been repeatedly undertaken in psychology. Their wide recognition has allowed us to describe them briefly (for the purpose of choosing methods for our study).

One of the most widely used methods for evaluation of semantic fields was a method of associations, which consisted of certain words being represented to the examinees who were asked to answer with any word instantly occurring in their minds. The associative answers were never random and could be divided into at least two large groups, external and internal associative connections. The external associative connections usually were understood as associations of a contiguity when the word arose from some component of the evident situation that included the named object (In the case of EOCF, such associative connections as "employee–epaulets," "boss–convict," etc. could be examples of such external associative connections.) The internal associative connections were understood as those that were caused by the inclusion of a word in a certain category ("convict–person," "employee–officer"). These associations in classical psychology were referred to as "associations of similarity" or "associations by contrast."

It was easy to see that, in this example, involuntarily emerging verbal connections reflected the features of sensorial thought or thinking using categories.

The essentially important question for any testing algorithm was what were the insignificant stimuli for a person. If a person was exposed to any sensorial stimuli that were not signaling danger in the form of pain, threat, or physical damage (for example, acoustic click) in reply to the first presentations of such stimuli, an orientation reflex appeared that could be identified using its physiological or behavioral components. When presentations of the same stimulus were repeated, the reaction to the stimulus vanished
and arose again as soon as characteristics of the stimulus or its modality changed or when the voluntary concentration of attention shown to the stimulus changed. The same phenomena occurred when words were used as stimuli. Thus, if shown the same word, the orientation reaction quickly disappeared and, if two different words were shown, the orientation reaction disappeared much more slowly. Nevertheless, adaptation developed even in the case of monotonous presentation of different words. However, words always meant something and by definition differed from the reactions caused by senseless letters or sound combinations. Therefore, in the published literature, it was established that a number of terms for such words (such as "neutral," "background," "passive," "inactive," and "insignificant") were used.

The logical contradiction was evident: On one hand, by definition, each new word should have caused an orientation reaction. On the other hand, numerous observations and experiments have shown that the presentation of a long line of words was accompanied by extinctions. How could that be explained? It appeared that cognitive systems of the psyche were capable of tuning out after careful analysis of new events, if these events were repeated a few times with constant physical characteristics. Thus, a person ceased to hear music playing during typing on the computer, etc. But, if the music stopped, the person perceived it as something new. Therefore, the orientation reaction switched on and the full analysis of the event was developed. A great deal of literature has been devoted to this simple display of apperception.

We have noted only that, as the word is a signal of signals, it is analyzed semantically first, specific to its cognitive systems. If the person was exposed to
approximately equivalent semantics of the majority of the words during long repeated presentations, the orientation reaction subsided.

As soon as the set of "neutral" words appeared (for example, the name of the subject), the subject was immediately startled or showed an increase in the level of activity in some other way. Reaction to the subject’s name eventually became extinct. Nevertheless, when using a background of neutral words, if the person’s own name or surname was occasionally shown, we always observed an orientation reaction. Hence, we defined one "significant" word: one’s own name. The same slow extinct orientation reactions have been shown for nicknames, surnames, diminutive names, and many other words representing the semantics of the nuclear structures of the personality. Psycho-semantic equivalents of these words were imprinted, especially individually, and sometimes it was difficult to define them.

It was important that it appeared really possible to find, within the background of the neutral words (words with little significance), a group of "active,” "meaningful,” "emotional” words. Thus, we have accepted a postulate to the unconditional importance of any word but have been obliged to establish that reactions to the majority of words in repeated presentations became indistinguishable from reactions to meaningless letter and sound combinations. As a whole, this also concerned words belonging to the "nuclear” structure, the only difference being that the fading of the orientation reaction occurred slowly and sometimes did not occur at all.

When other significant words were encountered that caused reactions accompanying their perception to differ sharply from the reactions to the set of other words in the semantic thesaurus, such reactions represented traces of affective
experiences. From the work of Luriya (1928) based on studies of the schools of Kraepelin and Yung, we found

The experimental diagnostics of the content of the consciousness, hidden by the personality ceases to seem impossible and methods of such diagnostics soon will become an every day practice. Each strong affective condition is accompanied by a deep breach of function in human beings... The affect distorts the energy balance in human being. The roots of any affective condition certainly concentrate in the activity of its nervous system which is responding to both external and internal stimuli.

The maximal deviations of the affect were observed in the higher neuro-psychological processes: thinking, speed and correct answers of a human being, division and stability of attention, consolidation and preservation of skills, etc. (Luriya, 1928). The response of an organism meant a large spectrum of registered physiological and behavioral reactions for which the technological means were developed. Thus, we have defined the second group of words, responses of which differed from reactions to the majority of words of the thesaurus; these were words that were associatively connected with something that had taken place and had affect or strong emotional reaction.

Therefore, presumably significant words for the subject, based on the differences in reactions arising from their perceptions, could be

1. Words corresponding to the "nuclear" structure of the personality, such as a subject’s early childhood socialization (for example, verbal equivalents of one’s self-image, "I," etc.).
2. Words equivalent to key psycho-semantic elements that have taken place in the past and were especially important to the subject’s state, affect, or other emotional event.

Numerous researchers have studied both time and probable characteristics of various associative connections. When studying the speed of reaction, i.e., the time required by the examinee to find a word and respond, it appeared that the most complex forms of associations demanded greater time while simpler forms of associations proceeded more quickly. At last, in special studies, this approach was used to uncover affective inhibition, which was caused by some words shown to the subject. (Luriya, 1963).

There have been some experimental attempts to define subjective semantic fields and connections (inside of them) using methods of associative experiment (Deese, 1962) and a conditional reflex (Luriya & Vinogradova, 1971). Initial premises were developed to study processes in psyche that presumed to obtain the information of its semantic elements without traditional division into motivational, will, and cognitive spheres. The foundation of such an approach was originated by Vygotsky (1956), "... there is a dynamic semantic system representing unity of affective and intellectual processes ... Every idea contains an affective attitude of the person to the reality presented in this idea." The information entered into the memory of the subject or obtained from it by different means was arbitrated by its conscious mind.

The overwhelming majority of the methods of studying the psyche have not represented physical measurements. They neither maintained metrological requirements nor applied them consistently in experiments.
Leaving aside the reasoning for material or the ideal essence of the thought processes, it has been possible to postulate confidently the presence of material that correlated to these processes. Thus, in any semantic influence, it was possible to observe certain changes in many physiological parameters: skin-galvanic reaction, electrocorticogram, miogram, and so forth. These nonspecific changes were also subject to the action of many combined factors: novelty of semantic stimulus, its emotional importance, the importance of context (in particular, surrounding conditions), etc.

In this case, a specific substratum for the brain could be the semantic stimulus (for example, a word) and an observable reaction (the change of a condition or behavior). In both cases, the brain was studied by the principle of "a black box" where an input (testing stimulus) and an output (result of "processing") of the stimulus was accessible to registration. Clearly, having a corresponding means of research, it was possible to establish the presence of certain semantic elements in memory and to study the character of the connections of these elements with others.

The traditional investigational methods of observing human psyche (including the active methods of presentation of various test problems, the analysis of the dynamics of learning, and questioner data collection) were insufficiently effective because between the researcher and the memory of the subject being tested was the conscious mind, which mediated all actions and processing of information and modified all reactions.

We required psychological methods that allowed us to use not only theoretical but also practical applications to learn mental functions without the influence of the behavior of the subject being tested by the participation of the conscious mind of the subject. The methods, based on a principle of a functional probe, were the answers to such a request
and consisted of standard testing stimulus and estimates of the results of its actions as a change of specific function. With reference to the human psyche, the full meaning of a functional probe represented the methods of associative experiment, classical methods by Luriya (1928) (conjugated motor technique), and methods by Vinogradova and Ejsler (1959). These methods allowed the study of semantic memory, but the conscious mind of the subject could influence the result and distort it nevertheless.

The greatest prospects in the direction of research of the human psyche included methods of subconscious presentation of the testing information. The work of Shevrin (1973); Shevrin, Bond, Brakel, Hertel, and Williams (1996); Kostandov (1977); and Dixon (1981) were widely known in this area. On the basis of these works, the conceptual models were constructed that are competing with traditional psychoanalytic postulates in their efficiency of the practical applications (Beznosjuk & Smirnov, 1990; Smirnov, Beznosjuk & Zhuravlyov, 1995). The psycho-semantic methods gave psychologists of correctional facilities algorithmic procedures, thus allowing them to get into an individual’s concealed personal world of the EOCF to obtain a high degree of individualized information, which was in conformity with the quantitative criteria of reliability and could be independently verified in many cases.

Psycho-semantic methods provided diagnostically significant structurally quantitative information for the organization of individual systems of values and attitudes. In psycho-semantic procedures, the statistics were collected not within the limits of groups of examinees but within the limits of repeating probes during testing procedures in a single examinee.
The psycho-semantic methods appeared indirectly, presented to the examinee in the form of a "verbal game," appealing only to the linguistic competence. These methods actually opened the subjective content of language symbols that were embodied in the structural formation work of categorical principles (psychologically real motives and goals of the subject).

The task of understanding employees’ genuine motivational forces of behavior in various situations consisted of searching those connections existing between structural components of the complete semantic system. This system included not only traditional consumer spheres but also systems of the meanings of "self-image" and "self-consciousness" of the personality. Various characteristics of the relationships of these connections also defined the psycho-semantic type of the personality.

The content-analysis of the scientific literature allowed us to isolate the most important for investigation, a group of elements of the psycho-semantic spheres of the personality of EOCF; these groups were represented by the components forming a self-image "I," an image of work/activity, a group of affective components, and groups of components concerning destructive motives.

Methods

The following methods were used to carry out the research protocol: biographical data collection; interview; written questionnaire in a standardized form; an interview with experts; the measurement of the reaction time to subconsciously shown semantic stimulus (Beznosjuk & Smirnov, 1990; Dixon, 1981; Kostandov, 1977; Shevrin, 1973; Shevrin et al., 1996; Smirnov, Beznosjuk & Zhuravlyov, 1995); methods of psycho-semantic
experiment–semantic differential (Osgood, 1959, 1962, 1963, 1976; Osgood, Succi, & Tannenbaum, 1957); construction of semantic spaces; and statistical data processing.

Research covered a contingent of examinees that included 320 employees from various penitentiaries and 200 students from a college specializing in graduating correctional officers.

The following were the reasons for studying two groups:

- All examinees were of the same sex.
- All examinees belonged to the same social affiliation.
- All were the employees of law enforcement correctional systems.
- The contingent of examinees included representatives from different regions.
- The choice of control data and experimental groups allowed the establishment of differences in the structure of the psycho-semantic spheres between EOCF and students based on the influence of the professional work environment. Such an approach was more likely to increase the reliability of the interpretation of the results received in the study and their extrapolations on the EOCF.

Before the investigation of the structure of the psycho-semantic spheres of the personality, we made an assumption that the psycho-semantic spheres of the experimental EOCF group would differ from the students’ control group. To test this hypothesis, we used the semantic differential method developed by Osgood et al. (1957).

The method of computer psycho-semantic analysis was used. It was based on methods of psycho-probing (an original variant of the subconscious presentation of test stimuli and noninvasive registration of the examinee’s reactions).
The program consisted of the following procedure: words or short phrases prepared in advance were quickly flashed on the computer monitor screen, but instead of words, the subjects being tested saw a row of 15 random numbers that the program overlaid over the words/stimuli. Subjects being tested pressed a special button at the occurrence of each stimulus on the monitor screen. The program registered the time of reaction as the time from the moment the stimulus was presented until the moment the button was pressed. Subjects being tested did not realize that they were answering questions, but the brain, nevertheless, registered the information that was hidden behind the row of random numbers and reacted to it irrespective of the will and desire of the subjects being tested. It was clear that subjects being tested could not prepare in advance for such a procedure and could not control their reactions.

The brain of the subject being tested reacted to various words differently. If in a string of stimuli, unconditionally significant words or phrases for the subject being tested appeared, the person reacted to their presentation more brusquely than to stimuli with no or little significance. In fact, the subconscious mind of the subject being tested reacted without participation of the person’s conscious mind. This exact phenomenon allowed us to obtain accurate, not falsified, answers. Subjects being tested perceived the procedure as a game in which all depended on the subject’s dexterity and attentiveness, not suspecting that hidden behind the row of random numbers were words and/or short phrases.

The special mathematical tool embedded in the program allowed the transformation of the results of the test into an easy to understand and interpretative graph report. During the 15 minute test, about 1500 words-stimuli were shown and at least 10
different topics could be investigated. The subject’s true attitude to these topics could be learned.

The following concepts were used as material for stimuli: I, self-image—to analyze the structure of self-evaluation, we based our approach of Rubinstein’s (1957) position that the consciousness as a whole assumes the experienced attitude—work, weapon, anxiety, aggression, alcohol, and suicide.

To validate the computer psycho-semantic test results and the necessity of an estimation of the structural components of professional work in the psycho-semantic sphere of the examinees, we also used the semantic differential (SD) method (Osgood et al., 1957), a method including both qualitative and quantitative testing of values during measurement of the emotional attitudes of the personality to specific objects, the analysis of the social setting, value orientations of subjective-personal meaning, and various elements of self-evaluation.

The method of SD was intended as a measurement for the distinctions in the interpretation of concepts in the examinees. Thus, the meaning of such measurement was that unique value, which was given by the subject being tested to an object or phenomenon and which had been obtained by the subject as a result of that person’s life experience. The dependence of a configuration of an individual’s personal semantic space on the effect of a position of the observer and personal features of the subject moved the method of semantic differential toward the projective approach in the research of the subject’s personality.

The objectives of reliability and validity were resolved within constraints of each experimental paradigm by applying T and F criteria. For the statistical analysis of data of
the examinees from the different groups, we applied Fisher's multi-functional criteria for analysis of qualitative characteristics, Fisher's criteria and Kolmagorov-Smirnov's for quantitative data \( \phi^* = (\phi_1 - \phi_2) \cdot \sqrt{n_1 \cdot n_2 / n_1 + n_2} \) where \( \phi_1 \) – an angle corresponding to the largest percentage share; \( \phi_2 \) – an angle corresponding to the smallest percentage share; \( n \) – number of observations in the sample 1; \( n_2 \) – number of observations in the sample 2.

Further, having compared the received value of \( \phi^* \) with the critical values \( \phi^* < 1.64 \) (\( p < 0.05 \)). If \( \phi^*_{\text{emp.}} > \phi^*_{\text{cr.}} \), \( H_0 \) was rejected.

The Ethics Committee of the judicial branch approved the research paradigm.

Consent forms were signed by each EOCF participating in the study.

Results

The assumption of the differences in the structure of the psycho-semantic spheres of the personality in EOCF as an experimental group and the group of students from a specialized college for correctional officers as a control group was based on the idea that the social, economic, and household factors of the families of the employees rendered significant influences on the hierarchy of the motivational components in their psycho-semantic sphere.

To define the importance of the given factors, we added to the standard diagnostic survey the following questions:

1. In your opinion, is your family well provided for?

2. Are you satisfied working in the penitentiary setting?

The sharply differentiated data between the groups of EOCF and the students were obtained in the basic criterion of a motivational maturity depending on the financial
position of the family and the attitude of the employee to the work in the correctional facility.

Only 31% of EOCF responded positively, while 72% of the students had positive answers to the question, "In your opinion, is your family well provided for?" When the question, "Are you satisfied working in the penitentiary setting?" was asked, only 2% of EOCF answered negatively. These results showed that not only the financial position but also some other factors influenced formation of the importance of professional work in structures of the psycho-semantic spheres of the personality of EOFC.

The detailed features of the psycho-semantic spheres in EOCF and graduates were investigated within the structures of self-evaluation (self-image) and their attitude towards professional work (work) using SD. The semantic spaces have been presented in Figure 1.

The results of the statistical analysis revealed significant differences between control and the experimental groups for the scale on potency—the structure of self-evaluation—and also for the scales evaluation and potency—the structures of a semantic image of professional work.

The self-evaluation of the student group was more evenly distributed on all parameters than in the EOCF group. However, data for the EOCF group confirmed practically the full concurrence of a self-evaluation of the self-image and the image of professional activity in contrast to the student group data.

In the opinion of the authors, this testifies to the fact that EOCF identify themselves with the professionals of the criminal justice system. Therefore, it is possible
to consider the given circumstance as the standard to apply when the structure of the attitude to professional work of EOCF is analyzed.

The results of the subconscious semantic response measurement analysis of the EOCF group have been presented in the table and in Figure 2. The group of 320 EOCF was divided into three groups based on their responses to the stimuli in the computer psycho-semantic testing. The subgroups represented neutral meaning, positive significance, and negative significance in relation to the psycho-semantic sphere being tested.

The weapon, work, alcohol and aggression components of the psycho-semantic spheres showed the largest percentages of significance (both positive and negative) in EOCF. The significant aggression component appeared in 30% of EOCF. For 13% of EOCF, this component had significant positive importance, which meant that in their behavior, they accept an open form of verbal and nonverbal aggression. For 17% of the EOCF, the given component had significant negative importance, which allowed us to draw the conclusion that they hide their aggressive intentions, which could then be unexpectedly manifested in their behavior. The component anxiety was significant for 25% of the subjects being tested. In 13%, it had positive meaning, which suggests that the given employees were in a state of anxiety and openly expressed it. In 12%, the state of anxiety was characterized by a strong affect that could serve as the reason for psychological disorder. However, both groups showed significant differences in the structure of their attitude toward professional work (see Figure 3).

A decrease in the parameters of all scales in groups of EOCF with the positive significance of anxiety and also scales of evaluation and activity in the group with
negative significance were observed. We concluded that the condition of anxiety caused significant deformation of the image of the professional work in EOCF and should be noted by psychologists.

One more essential difference in the revealed groups of employees was the presence of much underestimated parameters of evaluation and activity and the level of parameters for a potency scale that had an opposite deviation in relation to the average values of the self-image parameters. In the context of the general character of the attitude to professional work in these groups of employees, such positions had negative meaning, indicating the possibility of random behavioral reactions, an inconsistent orientation of motivational tendencies in spheres of professional work activities when differences between expected and real goals, actions, results, and estimates occurred. Devalued parameters of the activity and potency scales in comparison with an average self-image in the employees with the positive significance of the component anxiety was characterized by weak motivation regarding self-improvement and, consequently, a decrease in active behavior in the work environment, especially in extreme conditions.

The alcohol component showed significance in 42% of EOCF. In 25% of EOCF, this component had positive significance, which characterized people with an inadequately positive attitude to alcohol (i.e., persons who do not hide their "suffering"). In 17% of EOCF, the image of alcohol was associated with a defense reaction (i.e., those who hide alcoholic tendencies). Such findings in any subject being tested could be considered a problem issue. We substantiated these findings with SD technique data, presented in Figure 4, showing differences in the parameters of scales of the semantic space between the averages of the total sample size and groups with positive and negative
significance of alcohol, though insignificant, do exist. We believe that this is the mechanism of "social desirability" in employees who have chosen neutral average values when the semantic differential technique was used and shown the significance of the given component when subjected to computer psycho-semantic testing. These suggest that the computer psycho-semantic analysis is a much more sensitive method of diagnostics.

The results of the comparative analysis of the data in groups with both positive and negative significance of the component conflict in the structure of the psycho-semantic spheres were of special interest (see Figure 5). The parameters of scales of evaluation and activity in the group with the negative significance of the conflict component were below the corresponding values of the same parameters in the full sample size, and in the group with the positive significance were above corresponding values in the full sample size. Also in the group with the positive significance of the conflict component, the full internal harmonization of an image of professional work on all scales was observed.

It is possible to draw a conclusion that for a given category of employees the outward directed conflict had constructive character and promotes the performance of professional work.

As a result of computer psycho-semantic analysis, 16% (13% positive significance and 3% negative significance) of the EOCF prone to suicide were uncovered. To substantiate this data, SD techniques were used and the suicide group was divided as per the computer psycho-semantic data. The EOCF, being subjects of both positive and negative significance during the computer psych-semantic analysis, showed negative results in SD
analysis (see Figure 6), which probably represented their societal attitude towards the subject of the suicide in society. Apparently from the organization of semantic space, average indices of a full sample size and the group of persons who are inclined to suicide differ significantly. Apparently from the organization of semantic space, average indices of a full sample size and the group of persons who are inclined to suicide differ significantly.

A significant negative choice for all scales of suicide was easy to observe. In spite of the absence of positive choices for suicide, this suggests a “formed” suicidal model of behavior that could be carried out during the confluence of some circumstances. Though it raises the flag, the decision for subjects being either psychologically or chemically treated or psychologically supervised cannot be corroborated. Furthermore, without the subconscious semantic response measurement technology data, we would look for an explanation of the SD negative significant results for suicide in some employees elsewhere.

The computer psych-semantic analysis indicated that 42 of the EOCF with positive significance to suicide required psychological intervention and 10 employees with negative significance to suicide requires close supervision to determine their reasons for negative attitudes towards suicide when the normal response of the subjects being tested should have been neutral.

After analyzing the results received in the investigation, we concluded that, when studying an employee’s tendencies to a suicide, the individual approach and the authentic analysis of the personality is necessary. Such setting corresponds so far only with the subconscious semantic response measurement methodology.
The work component, designated as an image of professional work, required combined analysis with the self-image component in the structure of the psycho-semantic spheres of EOCF. To prove this point further, we conducted analysis of SD, dividing the group according to the subconscious semantic response measurement of the topics of self-image (positive meaning), work (positive meaning), self-image (negative meaning), and work (negative meaning) (see Figure 7). The employees focused on the positive attitude to work activities (positive meaning), distinguished themselves with high values on the scales of evaluation, potency, and activity of SD in comparison with the average indices of the full sample size.

The significant level of parameters on a scale of potency allowed characterizing them as possessing greater potential opportunities to maintain psychological stability and to realize adaptive behavior to extreme situations in the work environment and, hence, preserve the positive motivation in the execution of official duties in conditions generating prolonged mental stress.

The prevalence of high level parameters in the given category of employees on a scale of activity in comparison with an average self-image specified their potential orientation to self-improvement, self-development, and psychological readiness. This motivation to perform professional duties characterized not only a higher integrity of psycho-semantic spheres of this group of employees but also their orientation to work activities.

In employees with a negative attitude to work, parameters on the scales of potency and activity in comparison with an average self-image were considerably underestimated. In the general picture of characteristics of self-image in this group of
employees, such a position had negative meanings because it indicated the possibility of chaotic behavioral reactions, an inconsistent orientation of motivational determinant in the area of work activity when a significant difference occurred between the expected and real objective, actions, results, or estimates.

Finally, employees with a positive attitude to their work environment took their shortcomings very seriously, whereas employees with a negative attitude showed a tendency to forgive themselves for their shortcomings. This fact could also be accepted as the characteristic causing a difference in personality determinants in motivation in regards to professional work of EOCF.

Low values of the parameters on the scales of activity and potency in comparison with an average self-image evaluation of the employees with a negative attitude to their work environment indicated a weak motivation for self-improvement and explained non-active behavior in the work environment, especially in unusual or complicated circumstances. Such employees were in constant internal conflict with themselves, always strained and easily excitable irrespective of the reality surrounding their work conditions. During situations that required achieving specific goals that demanded some additional effort from the person, such as a mobilization of strength, the level of stress increased significantly.

In EOCF with a negative attitude to the work place, psycho-semantic spheres of the personality were simultaneously rigid and impulsive. Their self-image (as personal quality) and attitude toward work place functions, though independent from each other, generated paradoxical dynamics for the goal attainment process.
In EOCF with a negative attitude to the work place, the distance in semantic space between the concepts self-image and work was maximal in comparison with similar distances in EOCF with a positive attitude to professional work. This suggests that the EOCF who have shown negative attitude toward the work place are least satisfied with themselves.

The level of evaluation of the work place by these subjects using the factor evaluation did not change considerably and, using the factors potency and activity, was low. These EOCF evaluated the work place using the factor evaluation approximately equally with the EOCF having a positive attitude toward the work place, but their scale parameters of potency and activity were under evaluated. The role and social expectations of other people introduced into the consciousness of these individuals set the value vector alternative to personality representations in their self-image. This self-image could be considered conflicting and under evaluated. Such psychological structure and the content of psycho-semantic systems significantly complicated employees’ performance of their official duties.

We also found, during computer psycho-semantic analysis, groups of EOCF with an inadequate attitude towards weapons (25% with positive significance and 10% with negative significance). The following characteristic features, when analyzed using SD approach, were observed (see Figure 8).

The position in the semantic space of the weapon component in the EOCF with a positive and negative attitude did not differ, but as a result the whole sample had significant differences. Parameters of the scale weapon in the given groups of employees came nearer to parameters of the scale of anxiety and kept away from parameters of the
scale work. Hence, from the given category of employees, it was possible to expect inadequate actions with the weapon when they were in a state of anxiety. Such findings should serve as a signal for EOCF psychologists.

Discussion

The psycho-semantic approach in EOCF consists of the analysis of mental activity (from the point of view of constructs of its meaning) and allows us to consider a disorder in the structure of its connections and values of separate semantic elements of mentality as consequences and as the possible reasons for negative psychological outcomes in their professional work. Based on the results of the research, practical recommendations have been developed for EOCF psychologists, including use of computer psycho-semantic analysis with developed topics aggression, alcohol, anxiety, conflict, self-image, suicide, weapons, work and use of a traditional method of semantic differential by Osgood (1957).

Uncovering the true hidden attitude to presented topics required analysis of these topics to determine (a) whether it is significant or not significant; (b) if it is significant, then how significant (defining the hierarchy of the motives); and (c) whether it is significant in a positive or negative sense. The psycho-semantic methods used provide the diagnosis of the significant structurally quantitative information for the organization of individual systems of values and attitudes.

In the psycho-semantic procedures employed in this experiment, the statistical data were collected not from the different experiments within the group of examinees but from the repeating probes in the experiments of a single examinee. The psycho-semantic methods for the person appeared indirect, presented to the examinee in the form of a
verbal game. While the game seemed to appeal only to the linguistic competence, it actually opened the subjective content of language signs in which the structure formation embodied the work of the categories’ directions—psychologically real motives and goals of the subject.

The important task is to establish genuine incentive forces of behavior of EOCF in various situations and to find those connections that exist between structural components of the complete semantic system. Various characters of a parity of these connections also define psycho-semantic types of personality.

When recruiting or adapting/training new employees to the work environment or making decisions for staff promotion, it allows for the quick definition and authentication of different deformations in personality, the presence of pathological motives (for example, propensities to narcotics, suicide, alcohol, etc.), and the individual’s hierarchy in the structure of the psycho-semantic spheres. Among the motives defining an employee’s behavior, these diagnostics allow the opening of the content of the intra- and inter-psychological conflicts of the employees, increasing the reliability of professional selection, occupational management, and prognoses. Implementation of psychological correction in view of stress components of the psycho-semantic spheres will lower the probability of professional mistakes during the performance of occupational tasks.

Using the psycho-diagnostics of semantic elements of the personality during continuing psychological support, it is possible to follow up the functional state of the employee—their stability, reserves, success of professional work—and to evaluate efficiency of psycho-hygiene and preventive actions. The psycho-semantic analysis of the features of the personality of EOCF allows the improvement of the quality of
psychological support of their professional work. Timely follow up by the psychologist regarding the dynamic changes in the structure of psycho-semantic spheres of EOCF can significantly decrease the destructive behavior of the EOCF belonging to a group at risk.

Conclusions

The proven psycho-diagnostics study of the psycho-semantic spheres of the personalities of EOCF allows psychologists to obtain information of the psychological features of the personality of the EOCF (not altered by consciousness of the subject and not limited by artificial conditions of the experiment). The psycho-semantic technique enables us to reveal unconscious mental processes, conditions, and properties.

It is also necessary to note that we uncovered authentic differences in the structure of the psycho-semantic spheres of the control group (students) and experimental (EOCF) groups. This speaks to a significant influence of the conditions of professional work on the system of attitudes of employees to the base components of the psycho-semantic spheres.

The psycho-semantic sphere of the personality of the EOCF represents a system of individual values and sense-forming components that symbolize work activity. The sense forming elements (self-image, work, weapon), destructive motives (suicide, alcoholic tendencies), and affective conditions (aggression, anxiety) are basic and genuine in the structure of the psycho-semantic spheres of personality in the EOCF. These parameters characterize EOCF attitudes to work activities and their mismatch characterizes an employee’s professional deformation:

It has been established that such components of the psycho-semantic spheres as weapon, work, alcohol, and aggression have the greatest importance for the EOCF.
Criteria of distinction and features of a structure of the psycho-semantic spheres in groups of employees having inadequate attitudes to its various components were defined.

In all groups of EOCF having the affective attitude to base components of the psycho-semantic spheres, the deviation in semantic structure of an image of professional work was uncovered, which represents proof of the defining influence of the given components on the professional work of the employees.

The combination of computer analysis of the psycho-semantic spheres and a method of semantic differential by Osgood allows objective study of EOCF personalities.

The environment of professional work renders significant influences on the structure of the psycho-semantic spheres of the personality of EOCF, causing optimization or a mismatch of its separate components.

The mismatch of components in the structure of the psycho-semantic spheres of the personality of the employees leads to changes of the attitude to work and occurrences of nonadaptive forms of behavior.

Affective motor reactions to the sense-forming elements, destructive motives and affective conditions are the signs of the components mismatched in the psycho-semantic sphere of the personality of EOCF.

The technology used to study psycho-semantic spheres of the human personality allows us to predict the attitude of EOCF to professional work and to warn of their possible destructive behavior.
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Table.

Subgroups of EOCF Subjects according to Psycho-Semantic Sphere Tested and Type of Response Given

<table>
<thead>
<tr>
<th>Components of psycho-semantic spheres</th>
<th>Proportions of the EOCF shown statistical significance of the components</th>
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<tbody>
<tr>
<td></td>
<td>Neutral Meaning</td>
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<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>Aggression</td>
<td>70</td>
</tr>
<tr>
<td>Anxiety</td>
<td>75</td>
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<tr>
<td>Alcohol</td>
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<td>Conflict</td>
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<tr>
<td>Work</td>
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<td>84</td>
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<tr>
<td>Weapon</td>
<td>65</td>
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Figure Captions

*Figure 1.* Semantic structure of self-image and work.

*Figure 2.* Psycho-semantic components of the computer psycho-semantic analysis with negative (white) and positive (black) meaning.

*Figure 3.* Semantic structure of a component work (black–evaluation, white–activity, gray–potency).

*Figure 4.* Semantic spaces of the personalities of the employees of correctional facilities.  
Note: Elements of the psycho-semantic spheres in semantic space are presented as follows: 1–self-image (average); 2–work; 3–weapon; 4–anxiety 5–aggression; 6–alcohol (average); 7–alcohol (positive significance); 8–alcohol (negative significance).

*Figure 5.* Semantic structure of the component work according to conflict parameters.  
Note: Elements of the psycho-semantic spheres in semantic space are presented as follows: 1–self-image (average); 2–work; 3–weapon; 4–anxiety 5–agression; 6–alcohol (average); 7–alcohol (positive significance); 8–alcohol (negative significance).

*Figure 6.* Semantic spaces of the personalities of the employees of correctional facilities.  
Note: Elements of the psycho-semantic spheres in semantic space are presented as follows: 1–self-image; 2–Work; 3–weapon; 4–anxiety; 5–agression; 6–alcohol; 7–suicide (average for full sample size); 8–suicide (negative significance).

*Figure 7.* Semantic spaces of the personalities of the employees of correctional facilities.  
Note: Elements of the psycho-semantic spheres in semantic space are presented as follows: 1–self-image (average); 2–work (positive meaning); 3–weapon; 4–anxiety; 5–aggression; 6–alcohol; 7–self-image (positive meaning); 8–self-image (negative meaning); 9–work (negative meaning).

*Figure 8.* Semantic spaces of the personalities of the employees of correctional facilities.
Note: Elements of the psycho-semantic spheres in semantic space are presented as follows: 1–self-image (average); 2–work; 3–weapon (full sample size average); 4–anxiety; 5–aggression; 6–weapon (negative significance); 7–weapon (positive significance).
Figure 1

<table>
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<tr>
<th></th>
<th>Self-Image</th>
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<th>Self-Image</th>
<th>Work Experime</th>
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<td>Potency</td>
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<td>0</td>
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</table>
Figure 2
Figure 3

![Bar chart showing data for different categories of self-image and work-related experiences. The chart compares averages for the full sample size and two groups of the work population, one where anxiety has a negative meaning and the other where anxiety has a positive meaning.]
Figure 4
Figure 5

<table>
<thead>
<tr>
<th></th>
<th>&quot;Self-Image&quot;</th>
<th>&quot;Work&quot; sample</th>
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<th>Conflict positive</th>
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Figure 6
Figure 8