

PHENOMENOLOGICAL AND EXPERIMENTAL FEATURES OF STUDENTS' MENTAL STATES REPRESENTATIONS

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ABSTRACT

Mental representations of states are a special kind of representation of what has no matches in the objective material world, and therefore the study of psychological mechanisms and patterns of representations of the subject states will allow for a deeper understanding of the nature and functioning of the representations in the mental life of human, in the internal world. To study the explicit and implicit association, the free and implicit associative experiments were applied. In order to disclose the conceptual level, a subjective description of the students' states was performed. Estimation characteristics of mental state representations were by the method of semantic differential, followed by the determination of the leading structures. A questionnaire "Mental state relief" was used to study the characteristics of imaginative states. The paper presents the results of a study of level characteristics of phenomenological and experimental features of mental representations of students' mental states: figurative, conceptual, evaluative, and associative. Data suggests that the mental representation of the states represent the formations of a specific configuration and with specific features associated with the quality of the mental state: the spatial organization, the nuclear components, the variative characteristics, stability of the manifestations and the subject's independence of life situations. Mental representations of states have been considered as a result of the human way of life, as a certain format of a mental image, where the informative imaging of the experienced state takes place with its subsequent fixation in memory structures.

Keywords: *mental state, mental representations, mental experience, situation, image, association*

INTRODUCTION

The question of the origin, formation and establishment of the representations of the experienced state, their recognition, identification in different life situations is associated with mental representations that display a subjective experience of a person [1].

Mental representations can be regarded both as a process of displaying, representing [2; 3; 4; 5; 6], and as a result, a unit of experience within the worldview [7; 8; 9; 10]. In the latter case, there are usually several forms distinguished: figurative, conceptual, functional representation (representation associated with the action), and social representation. [11] The key one in this approach is, in our opinion, are figurative and conceptual mental representations [12].

In the context of the presented ideas, the study of mental representations of human states is of particular significance, since the mental state is an individual subjective phenomenon of the human psyche, and the identification of the universal laws of the state representations will allow finding patterns in the formation

of the worldview and the structure of judgment about it. Mental representation of states are a special kind of representation of what has no matches in the objective material world, and therefore the study of psychological mechanisms and patterns of representations of the subject states will allow for a deeper understanding of the nature and functioning of the representations in the mental life of human, in the internal world.

There are several level characteristics commonly distinguished in the structure of mental representations of mental states: figurative, conceptual, evaluative, and associative characteristics. Their study involves an associative experiment, a subjective description, a semantic differential method, and survey techniques.

It should be noted that a number of papers have anyhow, most often indirectly, touched on the problem of mental representations of emotional sphere (in some papers, emotions were the synonymous to states): the research raised the question of the structure and the development of knowledge about emotions during ontogeny [13], the emotional fullness of mental images [14], the representation of states at different levels of consciousness in the context of global cognitive structures [15; 16], etc.

However, despite the existence of certain works in the field of mental representations of emotions, it should be noted, in general, that to date there are no studies, aimed at the investigation of mental representations, namely, mental states.

METHODS

When studying the *associative* characteristics of mental representations of states, the study objective was to identify and describe both the explicit and implicit indicators of associative relations in the context of "*mental state - situation*".

Explicit associative relations were studied during free association experiment. Twenty-six psychiatric states associated with typical students' life situations were studied. A questionnaire was applied asking the subjects to refer to their experience and describe those life situations making them experience the mental states of *meditation, fatigue, excitement, peace, anguish, uncertainty, joy, compassion, pleasure, jealousy, sympathy, love, expectations, exhaustion, remorse, love, loneliness, commitment, joy, indecision, happiness, compassion, excitement, vitality, and inspiration*. The states were further associated, according to their proximity (distinctness), with the situations (on a scale of 0 to 10). The study involved 103 people aged 17-23 years.

The implicit relations were studied by implicit association test (IAT) [17]. The implicit association test (IAT) is one of the varieties of directional association experiment. It is designed for the study of implicit (unconscious, automatic) associations, which are carried out by measuring their automatic evaluation. A pivot in the choice of this method was a provision on the qualitative peculiarity of mental representations that can go beyond the conscious control.

The experiment studied the associative relations of communication situations such as *quarrel* and *chatting with friends* - with equilibrium and nonequilibrium mental states: *joy, heartache, gaiety, sadness, depression, elation*. These mental states were not randomly chosen, but were among the most important for students. The components of the semantic fields of these situations and states were taken as the stimulus words. The study involved 64 students aged 17-25 years.

The study of the *conceptual* characteristics of state representations compared the subjective understanding of the states (the subjects provided a number of definitions of mental states) with the dictionary reference - definitions from dictionaries by Dahl, Evgenyeva, Ozhegov, and others.

The study involved 1st and 2nd year students (90 persons) and 1st year post-graduate students (52 persons).

Estimation characteristics of mental representations of states were studied by the method of semantic differential (modification by V.F. Petrenko) [18]. The average score of the subject was calculated. Upon processing the results, both core formations and peripherals were determined. The study was conducted during the training classes with the students. Total 36 subjects (students) were involved, aged 19-20 years.

During data processing, the correlation (r-Pearson coefficient) and cluster analyses were used. Also, the organizational degree of structure was calculated: a structure coherence index (SCI), a structure differentiation index (SDI), and a structure organization index (SOI) [19].

The **image** of the mental state (image characteristics). The subjects were asked to revise and describe the most typical positive and negative mental states, that is, to describe how they identify (know) that they experience this, and not any other, positive or negative state. All subjects were students aged 17-22 years. The technique of "Mental state relief" was also used [20].

RESULTS AND DISCUSSION

Let us refer to the results of the study of the *associative* characteristics of mental representations of mental states.

The study of the degree of affinity of the states and the life situations found that the situation are associated with the states of a certain sign, modality, intensity and duration. The most pronounced are the associative relations with situations in states of high and/or low level of mental activity, opposed to each other in sign and value.

During the experiment with the use of IAT methodology we tested the hypothesis that the relations in the context of "situation - mental state" are stored in memory in the form of association between the situation and the mental state.

The study found the significant implicit associative relations were in "situation - mental state". As an example, we shall consider the implicit associative effects in the context of relations between the mental states such as *sadness, gaiety, depression, excitement, heartache, joy* and the situation *chatting with friends* (Figure 1).

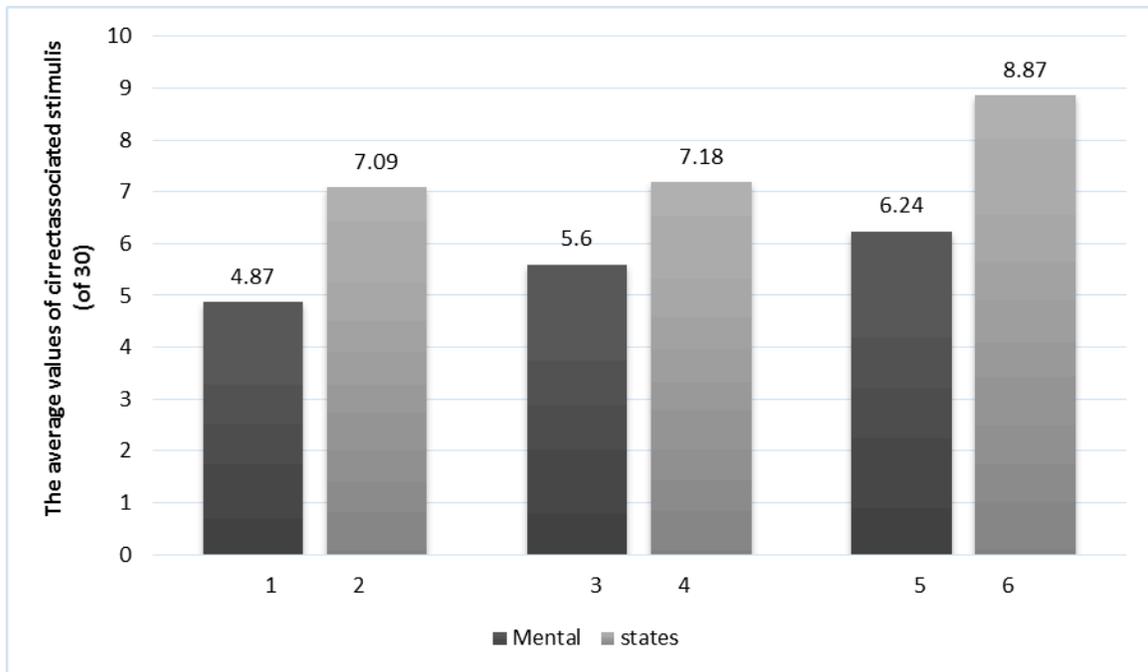


Fig. 1. Average meaning of the pro-associated stimulus words in the situation *chatting with friends*.
Mental states: 1 – sadness, 2 – gaiety, 3 – depression, 4 – excitement, 5 – heartache, 6 – joy

Figure 1 shows that the implicit associative effects in the context of relations between the mental states such as *sadness, gaiety, depression, excitement, heartache, joy* and the situation *chatting with friends* are more expressed in the states of *joy, gaiety* and *excitement*. The greatest effect was observed in the 3rd test block studying the associative relations of the mental states of *heartache* and *joy* with the situation *chatting with friends*. Generally, there is a pattern traced: the situation *chatting with friends* is implicitly associated with positive mental states.

The study of conceptual characteristics revealed the significant differences between the understanding of the meaning of mental states by the respondents and their conventional formulation (lexical reference). Most definitions of mental states given by the respondents contained the idea of the physical and physiological manifestations of states, features of behavior, as well as description of feelings and emotions the subjects had experienced during these states.

The average of matches for the states of high-level mental activity - 26%, mismatches, respectively, 74%, for relatively equilibrium states - 31%, mismatches - 69%, for the states of low-level mental activity - 36%, mismatches - 64%. That is, the lower the level of the state of mental activity is, the higher the affinity to the dictionary reference and the lower the variability of descriptions are.

The studies have shown that the understanding of the meaning of mental states depends on the subjective experience and age of the respondents (the understanding of the states becomes closer to a generalized social experience, recorded in the dictionary reference, as one gains its experience and becomes older), it also has a subjective meaning imported by the respondents in the definition of a state.

Let us consider the *estimation* characteristics of mental representations of mental states. The results show that the most stable are estimation characteristics relating to states of *joy* and *peace*. The opposite pattern is typical of the states such as *fatigue, excitement, interest* and *inspiration*, which are not characterized by stable consistency of estimates. In particular, the state of "fatigue" is characterized by such components as

slow, passive, dull, heavy, and sad. It has more variative components (different descriptions), indicating the representation of a greater number of elements, included in the mental space, in a subjective experience of a person. Such dependencies have been established for other states too.

The results of the study of the organization of estimation characteristics of the state representations (SOI) show that the most similar structures are negative states of *excitement* and *fatigue*, which cause similar estimations in the majority of respondents. The lowest indicators of the "organization" of the estimation characteristics are common to the *joy* and *inspiration*, that is, the positive states have a greater range of estimates as compared to the negative.

The conducted cluster analysis revealed the following features. When assessing the state of "*peace*", one of the key clusters is that containing elements such as *simple, clean, soft* and *relaxed*. In a state of "excitement" such elements are: *bad, evil, nasty* and *dark*. The representation of the state of "fatigue" the leading cluster is that containing elements such as *heavy, sad, passive, slow* and *dull*. Core clusters for the states of "*inspiration*" and "*interest*" are that combining such indicators as *active, good, nice, kind* and *fresh*. Thus, each of the above states is characterized by its own set of elements that make up the core of its mental representation.

Let us refer to the results of the study of the *figurative* characteristics of mental representations of mental states.

The answers to the question of "*How do you identify (recognize) when having a positive/negative state?*" allowed us to define the following informative markers of the images of mental states:

- 1) a description of the physical and physiological manifestations of the state (49% of descriptions);
- 2) the features of behavior or changes in behavior (49%);
- 3) a description of the state through the senses or other states (60%);

As follows from the results, the most essential components of the image of own mental state are representations of physical and physiological manifestations, features of behavior, as well as the description of emotions and feelings experienced in this state.

SUMMARY

1. The life situations of the subject are associated with the representations of states of a specific sign, intensity and duration, forming thereby an associative unity. These relations have been signified and established in language, manifesting themselves implicitly.

2. Conceptual characteristics of state representations differ significantly from the conventional formulation (dictionary reference). The differences are due to subjective experience, the age of the respondents, the semantic meaning imported by the subject to the definition of the state, as well as the level of mental activity: the state representations of a lower level of mental activity have more in common with the standard formulation.

3. The mental representations of states are characterized by a stable core formation and the variable peripherals, structure, different degree of organization and the leading indicators related to the state quality. Coherence of the structures of mental representations depends on the sign and level of mental activity of a state.

4. The leading characteristics in the representation of the state image are characteristics of physical and physiological manifestations, behavior, and feelings experienced in this state. The image of the state is relatively stable, independent of the situation, in which it is experienced, and is consistently reproduced.

CONCLUSION

The conducted phenomenological and experimental study of mental representations of mental states indicates the possibility of their descriptions through the associative, conceptual, evaluative and imaginative characteristics. It is believed that the representation of mental states, forming an operational structure of consciousness, are developed in the process of life experiences and reflect the experience of the states accumulated by the subject during its ontogeny. The image of each life situation of a human has a definite place in the subjective worldview and is associated with certain states. An associative unity of the state and situation evolves in the process of life and reflects lessons learned. From this point of view, mental representations of states have been considered as a result of the human way of life, as a certain format of a mental image, where the informative imaging of the experienced state takes place with its subsequent fixation in memory structures.

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