

Conference Paper

The Exploration of the Phenomenon of Psychological Time

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Abstract

The phenomenon of psychological time is manifested in its irreducibility of absolute time and is defined as the ability to achieve personal goals. Individual peculiarities of perception and experience of time are the basis of self-organization of human activity. The relevance of an objective study of the significance of the phenomenon of time is determined by the importance of this category for the implementation of the functions of adaptation and self-realization. Psychophysiological methods can be used to estimate the objective value of time in the system of human semantic links. It allows you to evaluate the strength of psychophysiological reactions of a person. The individual value of the time category can be calculated on the basis of the integral intensity of the reaction force: heart rate, breathing amplitude, increase in the amplitude of the systole (increase in peripheral blood flow), the severity of the high-amplitude positive half-wave (departure of the KGR wave upward from isolation).

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Received: 25 July 2018

Accepted: 9 August 2018

Published: 1 November 2018

Publishing services provided by
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Selection and Peer-review under the responsibility of the Fifth International Luria Memorial Congress Conference Committee.

Keywords: phenomenon of time, objective research methods, psychophysiological acts, the importance of the concept

1. Introduction

Modern society provides an unprecedented amount of free time and the emergence of increasingly longer periods in life, the content of which is almost entirely dependent on the individual views and expectations of the person. The increase in freedom of choice leads to differentiation of individualized forms of treatment over time, which manifests itself in many areas of real life – from the culture of health care, to activities in the shadow economy.

At the heart of the organization of the system of social relations is the perception and experience of time as an individual value, determining the ability to set goals and extract meaning from the freedom to manage their own lives.

Aims: objective study of the phenomenon of psychological time as a vital value.

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Time as a personal value is revealed in the awareness of the importance, the experience of the importance and manageability of the present in human activity. Consideration of the phenomenon of time as a factor in the organization and self-organization of life forces to abandon the basic principle of psychophysiological studies of time—the emphasis is not on the identity of the chronological and subjective, psychological time. The center of attention is the study of the meaning of the category of time as the center of the semantic network that actualizes important human semantic fields. An objective study of the ‘meaning’ [1] of the category of time should include the subject reference, categorical belonging, and be part of the semantic field, reflecting the meanings attached by a person to specific objects, phenomena and connections between them.

An objective study of the meaning of the word and the semantic links behind it requires the search for adequate psychological and psychophysiological methods that would make it possible to objectively analyze, taking into account the significance of the links behind the concept.

The human body is characterized by integrity and dynamism of the temporal structure, which is fixed. A. Ukhtomsky in the concept of ‘chronotope’ as a set of rhythms of functions, endogenous in nature. In the works of I. Sechenov, K. Ushinsky it is shown that the rhythm of locomotives affects the subjective sense of time. The formation and assimilation of time rhythm as an environmental factor is described in the works of N. Parn (1925), A. Chizhevsky (1973), A. Ukhtomsky (1966).

Studies show that the experience of subjective duration, reflected in the dynamics of psychophysiological reactions, allows us to establish the dependence of the characteristics of the functioning of neural processes and the subjective sense of time [Arvanitaki, 1956; Grechenko, 1999, D. Elkina, B. Tsukanova, P. Fraise, and others]. The human body is characterized by integrity and dynamism of time. Psychophysiological approach considers adaptation as the main functional task of the subjective sense of human time by synchronizing the internal sense of time and external rhythms and factors of activity. But the psychological essence of the human adaptation process is not only the ability to synchronize activities and adjust their reactions in accordance with the impact of stimulus on the basis of existing experience. A very significant feature of the conservation Foundation of the main aspects of the psyche such as memory, thinking, personality structure (Spondylitis, 1976, Wasilewski, 1976, Luchenok, 1979, Slonim, 1976, Lazarus, 1976, Mandler, 1979, Valdes, 1978).

Thus, time, as a psychological phenomenon, is a system-forming factor in the organization of human life, providing the ability to adapt to dynamic situations of real life and self-regulation of activity, providing the possibility of 'self-preservation' [2, 4, 5, 7].

Implementation of the principle of self-regulation determines the correspondence of what is happening in life 'normal course of development' from the point of view of man. On the basis of the information received, the individual selectively mobilizes the various mechanisms of the system to return to the optimal level. Retention of certain objective and subjective indicators of vital activity at the level of 'normal course of life', provides, ultimately, the constancy of the inner world of man [3, 4, 6].

Therefore, to study the phenomenon of time as a factor of interpretation, organization and self-organization of life, we took into account both psychophysiological features of experience and semantic meanings of the concept of 'time'.

Object: *phenomenon of psychological time.*

Subject: *acts of psycho-physiological experiences of the person semantic meaning of time.*

The main hypothesis: time, as a psychological phenomenon, is the basis of the organization of life, manifested in the awareness of the importance and acts of psychophysiological experiences of time as an existential value.

2. Methodology

The experimental study consisted of two stages: (1) determination of the lexical meaning of the semantic value of time; (2) psychophysiological assessment of the individual significance of time.

To determine the lexical meaning of the individual significance of time, participants were asked to make a list of values important to them. The number of criteria was not regulated. Moreover, any aspect of life which was declared to the test subjects as important and significant was recognized as value. Thus, the 'individual values' of specific people included such criteria as, for example, 'sex', 'self-confidence', 'balance', 'positive', 'antique furniture', 'property', 'children', 'trust', etc. The category 'time' was rarely stated as a value, but according to the purpose of the study, it was included in the list for subsequent psychophysiological assessment.

In the second stage of the study, psychophysiological methods for assessing the severity of reactions were used. For an objective assessment of the severity of psychophysiological reactions was used polygraph 'Polarg'. The evaluation took into account

that the meaning of the word for a person is not permanent. Behind each word there is a system of sound, situational and conceptual connections. These links differently dominant in different circumstances, but in normal adult human audible when slowed down in favor of a more substantial semantic relations [1]. In a normal state, the cerebral cortex works, obeying the 'law of force': significant irritants cause a strong reaction, while not significant – weak.

Thus, in assessing the severity of acts of psychophysiological reactions, the reaction rate and the 'force' of the reaction were taken into account. 'Reaction force' was evaluated as an integral indicator of the informative value of the stimulus on the basis of data: heart rate, breathing amplitude, increasing the amplitude of the systole (an increase in peripheral blood flow), the severity of the high-amplitude positive half-wave (the departure of the KGR wave upwards from the isolation).

Methods: multichannel psychophysiological research; tests for assessing the significance of incentives (SAT, TOC, TPV); reflexive method of value choices; methods of mathematical statistics.

The study was conducted in 2014–2017 on the basis of Samara University. Number of subjects: 370 people, aged 18 to 47 years.

Before the test, the adequacy of the expression of psychophysiological reactions was evaluated using the SAT test (surname test), in which the subject was offered a list of names similar in sound to his own. On the basis of severity of psycho-physiological reactions to imposed stimuli was determined which relationships are dominated by sound or conceptual. The conceptual connection (a reaction to his name) dominates compared to the sound relationships of all participants of the research (reliability of the result is not less than 90%).

The significance of the phenomenon of time and its place in the system of life values was determined by the test TPV (peak voltage). As a part of the test subject there was a number of concepts allocated to them presented at the first stage of the study. In the process of diagnosis, the subject asked the question: 'Is "concept" important for you?' Since all the concepts were previously discussed with the participant, it was assumed that the acts of psychophysiological reactions, first of all, the 'reaction force', will confirm the importance of the selected category. The test was presented to each subject at least three times.

Based on the results of psychophysiological testing, the 'individual profile' of the significance of life values was calculated. An example of an individual profile of the

significance of individual values, built on the strength and speed of psychophysiological reactions is shown in Figure 1.

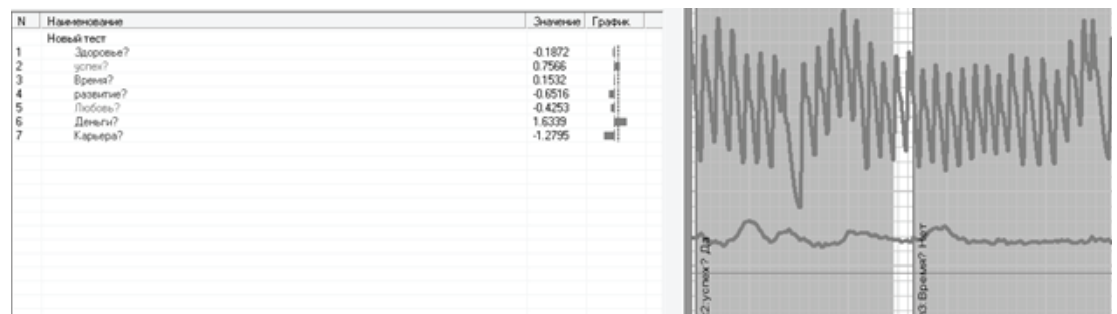


Figure 1: Psychophysiological assessment of the profile of individual values of the person.

The analysis of results of psychophysiological inspection allowed to allocate explicit and implicit part in a profile of each subject. To explicitly significant the concepts, vocabulary, and psychophysiological significance of which coincided were assigned. The concepts not stated how subjects are important, but physiological reaction which was expressed and different 'power' were implied non-relevant. Cases in which psychophysiological reaction gave 'significant result', and the participant did not confirm it, was estimated as not obvious, 'implicit', but significant result. The stimuli, the severity of psychophysiological response to which was not apparent, were evaluated as 'not defined'.

Thus, the conclusion about the significance of the concept was made on the basis of comparisons of lexical and psychophysiological values of the category studied. An explicit concept of time in the system of individual values is shown in Figure 2.



Figure 2: Time as a significant phenomenon in the system of individual values.

In the presented example, processing and analysis of the obtained results allow to allocate, in addition to time, only one significant value of the declared list of subjects: 'friends'. Lexical and psychophysiological value of the value of 'entertainment' does not coincide, which suggests that the desire for rest, fun and carefree pastime may not be significant for the subject.

The phenomenon of time was evaluated as explicitly not significant, if the subject did not declare its importance at the first stage, but the strength and speed of psychophysiological reactions allow it to lead to 'significant incentives'. The example of the individual profile with not explicitly significant time is presented in Figure 3.

Список стимулов: Вероятность достоверности результата: 82.7%

N	Наименование	Значение	График
Скрининг			
1	Вы студентка?	-0.8801	
2	Аутентичность Понимание себя?	-0.0318	
3	Гармония?	0.5513	
4	Любовь?	-0.7317	
5	Время?	-0.8024	
6	Семья?	0.5606	
7	Реализация?	-0.2362	
8	Здоровье?	0.0543	
9	Развитие?	-0.5169	
10	Реализация?	2.0328	

Figure 3: Individual profile of 'explicitly irrelevant' time.

Processing of the obtained results ($n = 370$, $p < 0.05$) allowed to divide the experience of time as an individual value into 3 types:

- 1-explicit – coincidence of lexical and psychophysiological meanings ($n = 67$, $r = 0,46$, $p < 0.05$);
- 2-implicitly – significant-lexically not significant/psychophysiologically significant ($n = 102$, $p < 0.05$);
- 3-explicitly not significant-lexically significant/psychophysiologically not significant.

If the severity of psychophysiological acts did not allow the reaction to be classified as 'strong' or 'weak', the value of the category of time was estimated as uncertain. To 'uncertain reactions' were attributed the results of the study 109 subjects. The cases ($n = 27$, $p < 0.05$), in which the stimulus 'time' acted as a 'boundary' between the significant and non-significant for the test concepts were also referred to as uncertain.

3. Discussion

To objectively determine the value of time as an individual psychological phenomenon the psychophysiological research methods can be used. The semantic significance of the time category can be determined through the strength and stability of the expression of psychophysiological reactions.

On the basis of the correspondence of lexical and psychophysiological components, time as a psychological phenomenon can be attributed to explicitly significant/not significant and implicitly significant individual values.

The question of the reasons of non-coincidence of psychophysiological and lexical meaning of the concept remains extremely important and open. In General terms, this fact can be explained by the low degree of awareness for the subject of important life values. But it seems that behind the category of time is a multidimensional system of semantic relations, which requires a more detailed study.

Probably, objective methods of studying the meaning of the word, in particular, the category of 'time', make it possible to identify semantic relationships and build semantic fields on the basis of not semantic, but not affective associations, which are the basis of self-organization of human activity.

In addition, it is known that a person can arbitrarily control the semantic fields, so it is important to determine the stability of the Central semantic concepts to which time can be attributed.

4. Conclusions

1. The phenomenon of psychological time can be described through the category of 'importance' and defined using objective psychophysiological methods.
2. Individual differentiation in the perception of the significance of time is manifested as an explicit, explicit and implicitly meaningful experience, which is part of the system of individual values.

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