

Person's behavior control in stochastic conditions of symbolic danger

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Abstract. Person's behavior is controlled by 5 independent regulators – symbol, image, thought, sense and feeling. In this article author describe particularities of person's behavior control in simulated stochastic conditions of symbolic danger. An ability of a person to control his/her behavior under symbolic danger could be measured by a device designed for researching person's behavior under stochastic conditions.

It was defined that symbolic danger could harmonize person's behavior and cause him/her to act more constructively. Results of a psychological experiment indicated that under stochastic conditions of symbolic danger efficiency of solving psychomotor tasks depends on person's ability to act under situation of uncertainty in space and time and alternative. Sensor-perceptual and symbolic and visual spheres that developed in a proper way allow to provide constructive control of person's behavior under situations related to lack of time or psychological tension.

Control of behavior under stochastic conditions of symbolic danger significantly depends on level of energetic potential of a person. It was defined that participants of the psychological experiment with a high level of energetic potential acted more effectively under symbolic danger compared to persons with low energetic potential. In case of complication of psychomotor tasks energetic potential of a person in combination with sensor and motor skills, process of thinking and imagination consolidate person's behavior in stochastic conditions of symbolic danger.

Keywords: *symbol, stochastic conditions, personality, behavior control, energetic potential*

Introduction. Among main directions and spheres of modern psychological science one significant tendency is definitely highlighted that is learning of a person by his/her subject qualities, abilities, processes and self-development conditions. Subjective human existence is complex and multispectral and is supported by a mental system and could be realized in different forms [4]. One of the most general and essential exposure of person's subjectivity is his/her voluntary conscious activity by which a wide range of relations between person and world of things, people, conditions of environment is realized. Herewith, control of conscious activity under stochastic conditions in simulated symbolic danger is the most general function of integrated mentality. In the process of behavior control under stochastic conditions of symbolic danger a unity of person's mentality could be indicated from different aspects of its abilities and skills.

By controlling behavior under stochastic conditions of symbolic danger a person, first of all, have to regulate, adjust and develop his/her actions in accordance with defined rules and norms [5]. As person's behavior is a part of a wide system of symbolic regulation, its main functions are: assessment, support, protection and reproduction of norms, rules, mechanisms and means necessary for subjects of regulation that provides cooperation (Rubinstein, 2002).

Regulation of person's behavior under stochastic conditions of symbolic danger is a task of significant complexity as it predicts hormic usage of proper actions needed for achieving meaningful goals [4]. Same actions, depending on prediction of outcome or product of action, sense of task, are guided and corrected minimum by five independent regulators: symbol, thought, image, sense and feelings (Maksimenko, Zaichuk and Klimenko, 2000).

The aim of the article is to find out how stochastic conditions of symbolic danger influence on person's behavior control.

Method. In order to simulate stochastic conditions that allow to observe particularities of influence of symbolic danger on person's ability to control his/her behavior a "Device for researching person's behavior under stochastic conditions" designed and patented by us was used in the experiment (Fig. 1).

The device allows harmonize motions of a person and monitor influence of his/her energetic potential on his/her actions (V.V.Klimenko; O.F. Hmilyar, 2005).

Construction of the device is analogical to those that were used by warriors in Ancient Sparta. Its originality is that a person being researched acts under conditions that force him/her by making different motions (like bending body, squatting, jumping off) to overcome approaching obstacles such as rotating bars in horizontal space at different altitude. Time and character of obstacle that define technique of action can be both known in advance and unknown to a person being researched [3].

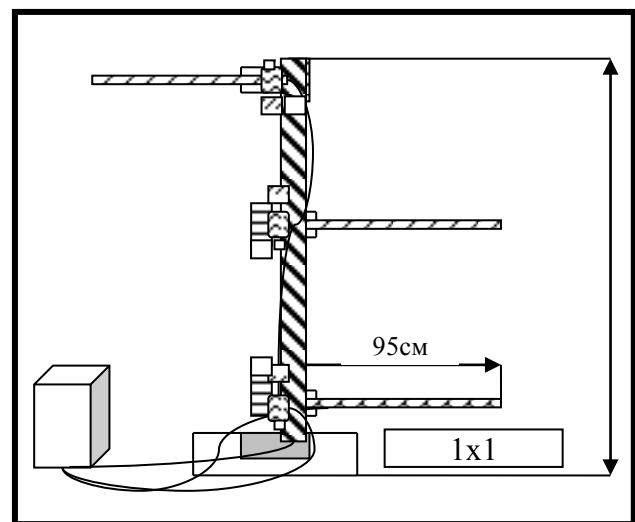


Fig. 1. Device for researching person's behavior under stochastic conditions

A program (depending on a character of tasks includes 12-24 stimulus) is directed from a control panel. In accordance with a program the device works in automatic mode.

Stochastic conditions of symbolic danger are created by changing direction of bars rotation therefore by urgent acceleration or delay in the movement and by simultaneous input of two stimulus (obstacles). Height of obstacles depends on person's height: first bar is installed at a level of person's ankle joint and it should be overcome by jumping

it off, second bar is installed at chest level and should be overcome in a deep squat, third bar is installed at chin level and to overcome it you should bend your head.

Speed of rotation is one rotation per second. To perform one task one should overcome obstacles for 6-18 times. One could make 2-3 attempts. The best result will be taken into account when less mistakes are made related to touching and delaying rotation of a bar. Time of touching a bar by a person being researched is registered in milliseconds by an automatic device.

In the psychological experiment bars approached in different time space with sudden acceleration and delay of rotation, simultaneous appearance of two obstacles, different speed and sequence of rotation. Combination of these elements allowed to create symbolic danger that should have resulted in significant influence on actions of persons being researched.

Officers of the Armed Forces of Ukraine under 29-33 years were researched (n = 89, male). All participants of the psychological experiment were healthy and systematically mastered their psychomotor abilities. Before experiment took place persons being researched measured their energetic potential (Klimenko, 2000). Based on obtained results, two groups were formed: first group consisted of persons with high energetic potential (n = 42 persons), second group consisted of persons with low energetic potential (n = 47 persons).

Particularity of symbolic danger was that one of persons being researched under simulated stochastic situations acted in more favorable conditions, all his peers cheered him up to help to make as less mistakes as possible. Another person being researched (his "opponent") had to overcome approaching obstacles under least favorable conditions (at the moment when all his peers were in another room).

A person being researched definitely understood that he was "captured" by adversary group therefore he had to be much more attentive and focused on his actions. In general, the psychological experiment in stochastic symbolic danger conditions was simulated in a way that each participant was able to control his behavior under most favorable and least favorable conditions.

Results. Interpretation of obtained results in the psychological experiment indicated significant difference in actions of persons with high and low levels of energetic potential (see Table 1). Table 1 indicates that the worst results showed persons with low energetic potential who acted in conditions of symbolic danger: "I am one to one with adversary", "I act in adversary group", in other words who were under least favorable conditions. These results were confirmed by average mistakes measured in time of touching an obstacle: in the first case its average was 15.22" (P< 0.05), in the second case – 18.53" (P< 0.05).

Table 1. Dynamics of influence of symbolic danger on behavior control under stochastic conditions by persons being researched

Degree of complexity	Simulated conditions	Symbolic danger	Groups	Average mistake (sec)	Another statistic data			
					σ	Thickest value	Median	CV
Actions of higher complexity	Stochastic conditions	"I am one to one with adversary"	1	12.17*	0.22	12.24	12.20	1.80
			2	15.22	1.03	14.27	15.05	6.76
		"I am in an adversary group"	1	10.44	1.13	10.57	10.51	10.82
			2	18.53	2.26	19.07	18.98	12.19
		"I am in a friendly group"	1	9.98*	0.74	10.06	10.02	7.41
			2	14.87*	2.08	14.35	14.73	13.08
		Check measurement	1	10.02*	1.04	10.23	10.46	10.37
			2	15.06	1.82	15.31	15.64	12.08

References: 1 – persons with high energetic potential (n = 42).
2 – persons with low energetic potential (n = 47). * – probability of difference in group when P < 0.05.

The highest results persons in the second group demonstrated under conditions "I act in a friendly group". Average mistake in this situation was 14.87" (P< 0.05). In a check measurement in a situation when each officer acted for himself only average mistake was 15.06" (P< 0.05).

Average mistake of persons being researched with high energetic potential under uncomfortable conditions "I am one to one with adversary" was 12.17" (P< 0.05) and 10.44" under "I act in an adversary group". The highest results in the first group were demonstrated under situation "I act in a friendly group" (average mistake was 9.98").

Therefore, results of research obtained under simulated stochastic conditions indicated that symbolic danger could reduce person's ability to control his\her behavior and at the same time cause more constructive actions. This statement confirmed hypothesis made by M.O. Bernstein [1] on "rationality law" stated that in case of the highest pressure when nerves and muscles are "strained to the limit" a body can not move and act for waste therefore actions are done properly in the best way (Bernstein, 1966).

Symbolic danger in connection with high energetic potential caused persons in the first group to move and act in

maximal rational way, therefore they achieved results that were not possible to achieve under normal circumstances.

Results of the psychological experiment also confirm S.G. Gellerstein's [2] idea that particularity of any psychomotor task is significantly defined by sensor-perceptual and symbolic and image activities that determine condition for decision-making process (Gellerstein, 1966).

In solving of psychomotor tasks in previously known conditions efficiency of actions is largely defined by requirements to motor abilities (in our case – speed of moves), while in stochastic conditions of symbolic danger effective control of behavior is limited mainly by identical requirements to mental processes and qualities.

Conclusion. Results of researching person's behavior control in stochastic conditions of symbolic danger allowed to indicate a close relation between mental and motor components in solving motional tasks. In support of Bernstein's idea that efficiency of behavior control in stochastic conditions is significantly dependent on extraversion, ability to improvise and inventiveness we came to a conclusion that among mental and motor abilities the priority is given to mental. Mental qualities (such as quick

perception of a situation and its assessment, ability to quickly select a proper motion – quick decision-making), ability to create state of “public loneliness” are effective regulators of person’s behavior who acts under stochastic conditions of symbolic danger.

By complicating conditions under which participants had to make decisions a value of technique of psychomotor activity was reduced as the final outcome depended less on motion. Instead significant role demonstrated nerve and muscles system, sensor-motor skills, process of thinking, feeling and imagination.

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