The psychology of ustoychivost': a conceptual model of human ustoychivost'

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Abstract. The article presents the author's approach to understanding the conceptual model of a person ustoychivost', which is based on such concepts as "stability" and "resistance". Two hypotheses of the exploring are considered. Hypothesis 1: the conceptual model of human ustoychivost' is based on the concepts "stability" and "resistance", which define the semantic load of the concept "person ustoychivost'". Hypothesis 2: a conceptual model of human ustoychivost' can be created and described if it is based on the psychophysiological, psychological, and psychosocial levels of the organization of human life. In a psychological sense, the author's definition of ustoychivost' is formulated: Person ustoychivost' is his ability to retain health at the psychophysiological, psychological, and psychosocial levels of life under the influence of destroyers. The article presents the ustoychivost' scale, which can be used as an express assessment of ustoychivost'. The scale is divided into three zones: middle zone - "stability" zone and two extreme zones - "resistance" zones. Among the results, 14 criteria of ustoychivost' should be singled out, which were identified by respondents (n = 1200) when evaluating their ustoychivost'. The results of the experiment and explanations for them are also presented. Ustoychivost' author's conceptual model is presented in conclusion.

1 Introduction

Bonnano, G. A. & Mancini, A. D. in paper [1, p.369] remind that epidemiologic studies indicate that most adults experience at least 1 potentially traumatic event during the course of their life because highly aversive events that typically fall outside the range of normal everyday experience are "potentially" traumatic because not everyone experiences them as traumatic. It follows that life often teaches every person through stress. Therefore, in the modern world, where there are many probabilities in the various possibilities of the same event, one cannot desire more than to be "stability", "resistance" or "ustoychivost'" for each outcome option.

Note that in Europe and America, psychologists use the words "stability" or "resistance", which translate into Russian as "ustoychivost'", and, conversely, depending on the context. "Ustoychivost'" translates into English as "stability" or "resistance", which is not true, because it distorts the psychological information content of all words. This reveals not only

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the semantic problems of using the words “stability”, “resistance” and “ustoychivost’ ”in psychology, but also methodological, and as a result, therapeutic and corrective. Moreover, an alternative may be presented, for example, in the form of the concept of “antifragile” introduced by Taleb N. [2-3].

Hypothesis 1: the conceptual model of human ustoychivost’ is based on the concepts “stability” and “resistance”, which define the semantic load of the concept “person ustoychivost’”.

Kazankov V.V. [4-5], Fletcher D. & Sarkar M. [6] and Infurna F.J & Luthar S.S. [7] note the interest of psychologists in the phenomena of “resistance” and “ustoychivost’ ”from different psychological points of view.. Moreover, Fletcher D. & Sarkar M. [6, p.13] state: «one of the main difficulties in conducting research on resilience is that wide discrepancies exist in the way that resilience is defined and conceptualized» and further «It is, therefore, important to address these definitional concerns in order to provide an understanding of why different approaches have prevailed, of the results that have emerged, and, as knowledge has accumulated, of the relative strengths and weaknesses of theoretical explanations» [6, p.14].

The purpose of the exploration is to present for discussion the conceptual model of person ustoychivost’.

From the works of Bonnano, G. A. & Mancini, A. D. [1], Kazankov V.V. [8] and Campbell-Sills L. & Stein M.B. [9] hypothesis 2 is being formed: a conceptual model of human ustoychivost’ can be created and described if it is based on the psychophysiological, psychological, and psychosocial levels of the organization of human life.

In a global sense ustoychivost’ is recommended to understand as a person able to maintain health - biological, mental, and social under the influence of destroyers. In a psychological sense *person ustoychivost’ is his ability to retain health at the psychophysiological, psychological, and psychosocial levels of life under the influence of destroyers*. Destroyers are all that is aimed at damaging and (or) destroying the psychophysiological, psychological, or psychosocial health of a person.

2 Materials and Methods

The gist of hypothesis 1 is that ustoychivost’ of a person is equality:

$$S = U \text{ or } R = U \quad (1)$$

Where,

S - stability - the interval of comfort and human health, the stability ustoychivost’ zone in the range from 0.382 to 0.618 (Fig. 1) and is indicated by the sign (+).

R - resistance is the interval of discomfort and vulnerability of a person, the zone of resistance ustoychivost’ is located in two intervals from 0 to 0.382 or from 0.618 to 1 (Fig. 1) and is indicated by the sign (-).

U - ustoychivost’, interval from 0 to 1 (Fig. 1)

Fig. 1. The rating scale ustoychivost’ of person.

Therefore, the “Psychology of ustoychivost’” indicates that ustoychivost’ of a person in the biotechnosociety space is represented by:

- Conditional stability ustoychivost’(SU) zone. It is located in the range from 0.382 to 0.618, when a person does not experience negative loads (stresses) from the

biotechnosociety, that is, he is in the comfort space at the psychophysiological, psychological and psychosocial levels of life as an individual, person, and subject of labor. Therefore, the zone is indicated by the sign (+);

- Conditional zone resistance ustoychivost'(RU). It is located in the range from 0 to 0.382 or from 0.618 to 1, when a person experiences stress (negative or positive stresses) from the biotechnosociety, that is, he is in the space of “potential injury” (see Bonnano, GA & Mancini, AD [1]) at the psychophysiological, psychological or psychosocial levels of life as an individual, person or subject of labor. Therefore, the zone is indicated by (-);
- Conventional point ustoychivost' - 0.5. This point describes the highest degree of human acme in everything at the psychophysiological, psychological, and psychosocial levels of life as an individual, person, and subject of labor.

It follows that human ustoychivost' is dynamic. This statement is confirmed by the work of Kazankov V.V. [8], Campbell-Sills L. & Stein M.B. [9] and Seville E. [10].

By Infurna F.J & Luthar S.S. [7] and Bhamra R., Dan S., Burnard K. [11] states that ustoychivost' is a multifaceted and multidisciplinary concept. From what the gist of hypothesis 2 follows: the psychophysiological, psychological, and psychosocial levels form a roadmap for ustoychivost' markers in human zones (SU, RU, DU).

Psychophysiological level (ϕ) is the nervous system in determining the individual's mental activity.

Psychological level (ψ) is emotions that form the mental state of the individual.

Psychosocial level (κ) is volitional manifestation of the orientation of the labor subject.

The three levels are given form in man the unity of the individual, personality, and subject of labor in biotechnosociety - the world of nature, technology, society.

The total ustoychivost' of a person is measured in relative units (r.u.) and is determined by the formula (2):

$$\Omega = \frac{\Omega\phi + \Omega\psi + \Omega\kappa}{n} (r. u.) \tag{2}$$

Where,

- Ω is total ustoychivost' of a person (r.u.);
- n is the number of ustoychivost' levels, usually 3;
- $\Omega\phi$ is ustoychivost' at the psychophysiological level (r.u.);
- $\Omega\psi$ is ustoychivost' at the psychological level (r.u.);
- $\Omega\kappa$ is ustoychivost' at the psychosocial level (r.u.).

Respondents were asked to determine their $\Omega\phi$ $\Omega\psi$ $\Omega\kappa$. To do this, the respondents in Fig. 1 determined the numerical value for each level, put a sign, and explain their decision. The results are listed in the table (table. 1).

Table 1. Results.

Level	Interval	Sign
Psychophysiological level (ϕ)		
Psychological level (ψ)		
Psychosocial level (κ)		

The validity of scale was studied over 10 years by comparing the results of respondents in a total sample of 1200 people, where 600 people used scale (experimental sample (ES)), another 600 people did not use it (control sample (CS)). Each sample consisted of such categories of respondents as graduate students - 150 people, 75 people in each sample;

firefighters - 700 people, 350 in each sample; rescuers - 200 people, 100 in each sample; police officers - 150 people, 75 in each sample.

During the experiment, ES respondents have explained the essence of the numerical values of the scale and Ωφ Ωψ Ωκ, after which they numerically evaluated their ustoychivost'. CS respondents were asked to intuitively scale their ustoychivost' on Ωφ Ωψ Ωκ. ES and CS respondents were also asked to independently evaluate the three intervals of the scale with a (+) or (-) sign. Respondents from ES and CS had to explain their decisions when discussing the results.

3 Results

This section presents the experimental results, which are shown in tables 2-4 and associated with the hypotheses put forward.

From table 2 follows: Firstly, the rating scale is so easy to use that ES respondents were all able to rate their Ωφ Ωψ Ωκ, like most CS respondents, even though they rated it intuitively. Secondly, the presented results confirm the results of Infurna F.J & Luthar S.S. [7] and the claim that most people can appreciate their ustoychivost'.

The results of Table 2 indicate the ability of a person to assess their stability even on an intuitive perception of information, which suggests the ability to control your body at the level of an individual, person, and subject of labor under the influence of destroyers of biotechnosociety.

Table 2. Assessment by respondents ES and CS ustoychivost' : Ωφ Ωψ Ωκ.

	Number of respondents	Evaluate (could / could not)			Ratio (%)		
		Ωφ	Ωψ	Ωκ	Ωφ	Ωψ	Ωκ
ES	600	600	600	600	100	100	100
CS	600	325/275	437/163	304/296	54/46	73/27	51/49

The data in Table 3 indicate the possibility of an intuitive assessment by respondents of the ES and CS ustoychivost' zones.

Table 3. Estimated interval (SU) and (RU) scales.

Level	Zone	Ustoychivost' interval on a scale (Fig. 1)	ES		CS	
			(+)	(-)	(+)	(-)
Ωφ	SU	0.382-0.618	397		300	
	RU	0-0.382		600		600
	RU	0.618-1	203		25	
Ωψ	SU	0.382-0.618	403		345	
	RU	0-0.382		600		600
	RU	0.618-1	197		92	
Ωκ	SU	0.382-0.618	331		268	
	RU	0-0.382		600		600

	RU	0.618-1	269		36	
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From table 3 it can be seen that the RU zone in the range of 0-0.382 by respondents of both groups is evaluated with a (-) sign, which is consistent with our recommendations. This zone is described by respondents as not calm, conflicting, and stressful.

The largest number of ES and CS respondents rated the SU zone with a (+) sign, which indicates the correctness of our recommendations (Fig. 1). SU zone is described by them as calm, conflict-free and every day.

The smallest number of respondents ES and CS also marked with a (+) zone RU in the range of 0.618-1. When explaining this decision, the respondents of both groups pointed to positive stress (bonus, wedding, waiting for vacation and holiday, childbirth - that is, a significant, emotional, and positive event), which influenced the choice of a sign (+). However, from the point of view of ustoychivost' theory, both positive and negative stress lead a person out of the SU zone, which can affect the appearance of errors in decision-making and subsequent actions, especially in work.

From tables 2-3 it follows that ustoychivost' of a person includes the concept of "stability" and "resistance", which carry the different semantic load: the concept of ustoychivost' of a person; perceptions of reality, depending on the situation; when evaluating ustoychivost'.

Note that not one of the respondents ES and CS indicated the DU point. This may indicate that among the respondents there was no person absolutely satisfied: with their health, their life, their social status in society.

Table 4 is based on interviews with respondents. It contains the most repeating criteria by which respondents described $\Omega\phi$ $\Omega\psi$ $\Omega\kappa$ with respect to their psychophysiological, psychological, and psychosocial health at the level of the individual, personality, and subject of labor.

Table 4. The criteria that are most repeated in the explanations of the respondents and their assignment to the levels ϕ ψ κ by the largest number of choices.

N	The criterion most used in the explanations	Level for the largest selection of respondents ES and CS
1	Goal formation	κ
2	Decision-making	κ
3	Adaptation	ϕ, ψ
4	Resolution	ϕ, ψ
5	Readiness	ψ
6	Activity	ϕ, κ
7	Satisfaction	ψ, κ
8	Peace	ϕ, ψ
9	Collectivity	κ
10	Selectivity	ψ, κ
11	Plastic	ϕ, ψ
12	Variability	ψ, κ

13	Equilibrium	φ, ψ
14	Resistance	φ, ψ, κ

The variety and many criteria are reduced to 14 criteria that are the most repeated or have the same meaning. For example, some criteria regarding the information received were called: collectivity, accumulation, accumulation, which we defined as collectivity. Table 4 shows information content not only by criteria but also by levels that correspond to these criteria according to respondents.

4 Discussion

The results of the experiment show that operating separately with the concepts of “stability” or “resistance” is incorrect since they are parts of the whole, namely the concept of “ustoychivost’”. The concept of “stability” characterizes a certain static comfortable part of a person’s life, which is described by the ES and CS respondents with a plus sign (+). The concept of “resistance” describes the life of a person beyond the boundaries of comfort at the psychophysiological, psychological, or psychosocial level, which is characterized by a sign (-). If we carefully analyze the results of Table 4, then the functional component of the ustoychivost’ of a person is drawn, which consists of three main blocks: process, state, and property.

Ustoychivost’ of a person as a process is the formation of a goal, decision making, adaptation, and resolution at the psychophysiological, psychological and psychosocial levels.

Ustoychivost’ of a person as a condition is readiness, activity, satisfaction, and peace at the psychophysiological, psychological and psychosocial levels

Ustoychivost’ of a person as a property - collectiveness, plasticity, variability, poise, and resistance at the psychophysiological, psychological, and psychosocial levels.

Each presented block can be evaluated using already tested research methods, which are presented, for example, in Campbell-Sills L. & Stein M.B. [9], Ralph L [12] and Sixbey M.T. [13].

The conceptual model of person ustoychivost can be represented in the form of a diagram (Fig. 2) in the biotechnosociety, where the arrows are a figurative interpretation of the scale (Fig. 1), which implies the ustoychivost’ zone (SU, RU, and DU) in which the person is in as a whole or separately at the psychophysiological, psychological and psychosocial levels of the organization of life.

The conceptual model allows you to take a different look at the problem of ustoychivost’ person and methods for assessing it. It reflects a new approach, reflecting the static and dynamic sides of ustoychivost’ person in interaction with the biotechnosociety. Moreover, most works (Bonnano, GA & Mancini, AD [1], Fletcher D. & Sarkar M. [6], Infurna FJ & Luthar SS [7], Franklin TB, Saab BJ, Mansuy IM [14]) relate ustoychivost’ or resistance with adaptive processes or states of readiness and activity under the influence of destroyers of biotechnosociety, which is not a complete reflection of the problem under study.

Also presented, a conceptual model will help to analyze the problems of stress resistance and human vulnerability and take a different look at the survival strategy according to Franklin T.B., Saab B.J., Mansuy I.M. [14]. Moreover, the concept itself (Fig. 2) is still subject to active empirical research with the goal of forming an empirical data bank on the subject of ustoychivost’ person.

Fig. 2. Human ustoychivost' conceptual model.

Only understanding the processes, states, and properties that originate within a person and appear in action from beginning to end is it possible to correctly evaluate his ustoychivost'; predict behavior in a given situation; correctly assess the risks, especially associated with stress. A person is an individual, personality, and subject of labor, which manifests itself at the psychophysiological, psychological, and psychosocial levels and affects the stability, resistance, ustoychivost' of a person.

During the experiment, numerous and diverse markers of the psychophysiological, psychological and psychosocial levels were obtained for the road map for assessing ustoychivost' person ($\Omega\phi$ $\Omega\psi$ $\Omega\kappa$), which does not allow us to talk about them in this article, since they are the subject of a separate presentation and evaluation.

5 Conclusions

Undoubtedly, Peter A. D. Sherrard is right in claiming «All too often conceptual models are promoted and described in the literature with little or no empirical evidence to support the beliefs» [15 p.7]. Therefore, the proposed conceptual model is currently gaining empirical data. But researchers of stability, resistance, ustoychivost' using the proposed conceptual model, and rating scale will benefit from their practical application and understanding of the initial rebound technique after exposure to the biotechnosociety destroyer. As states Sixbey M.T. «Resilience literally means the ability to “bounce or jump back.” It refers to the ability to actively “bounce back” after experiencing a crisis or challenge, strengthened and more resourceful to meet the challenges of life» [15 p.8].

In conclusion, we note that the current study showed the right to “life”, the proposed conceptual model of ustoychivost's person, and the scale of its assessment. This is especially true for professions whose work is associated with stress.

References

1. G.A. Bonnano, A.D. Mancini, *Pediatrics* **121**, 369–375 (2008) doi: 10.1542/peds.2007-1648

2. N. Taleb, *The Black Swan: The impact of the highly improbable* (Random House, New York, 2007) <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.695.4305&rep=rep1&type=pdf>
3. N. Taleb, *Antifragile: things that gain from disorder* (Random House, New York, 2012) https://riosmauricio.com/wp-content/uploads/2013/05/Taleb_Antifragile.pdf
4. V.V. Kazankov, Scientific and technical statements of St. Petersburg State Polytechnic University. Society. Communication. Education, 127-132 (2010) doi.org/10.24412/Ff8Fj8Jpmc8
5. V.V. Kazankov, O.V. Gumenyuk, Scientific and Technical Journal of St. Petersburg State Polytechnic University. Society. Communication. Education, 130-135 (2010) doi.org/10.24412/Ff8Gw_t4Q7k
6. D. Fletcher, M. Sarkar, *European Psychologist* **18(1)**, 01, 12-23 (2013) doi.org/10.1027/1016-9040/a000124
7. F.J. Infurna, S.S. Luthar, *Clinical Psychology Review* **65** (2018) DOI: 10.1016/j.cpr.2018.07.003
8. V.V. Kazankov, *Bulletin of the Leningrad State University*, 65-76 (2010) doi.org/10.24412/Ff8E8mTGxIU
9. L. Campbell-Sills, M.B. Stein, *J. Trauma Stress* **20(6)**, 1019-1028 (2007) doi.org/10.1002/jts.20271
10. E. Seville, *Resilience: Great Concept but What Does it Mean?* (2009) https://www.researchgate.net/publication/29489555_Resilience_Great_Concept_but_What_Does_it_Mean
11. R. Bhamra, S. Dani, K. Burnard, *Resilience: The Concept, a Literature Review and Future Directions* (2011) DOI: 10.1080/00207543.2011.563826
12. R.L. Piedmont, *Corsini Encyclopedia of Psychology* (2010) DOI: 10.1002/9780470479216.corpsy0876
13. M.T. Sixbey, *Development of the family resilience assessment scale to identify family resilience constructs* (University of Florida, 2005) http://etd.fcla.edu/UF/UFE0012882/sixbey_m.pdf
14. T.B. Franklin, B.J. Saab, I.M. Mansuy, *Neuron* **75(5)**, 747-761 (2012) DOI: <https://doi.org/10.1016/j.neuron.2012.08.016>
15. S. Meggen Tucker, *Development Of The Family Resilience Assessment Scale To Identify Family Resilience Constructs. A Dissertation* (University Of Florida, 2005) <https://ufdc.ufl.edu/UFE0012882/00001>