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SPIN NATURE OF WATER MEMORY

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ABSTRACT

Mental "dynamic" influence on parameters of water structure (set of clusters, their dimensions and concentrations) by scattering method of laser irradiation was studied. The informational content of it was the process of rotation. The influence was produced by fixing mental water image in the cuvette with rotating clusters about their axes (spinning) with liquid water fraction that is motionless or rotation of the whole water volume about the axis of the cuvette (swirling rotation). It is determined that the character and stage of structure change depended on rotation type and initial structural water state. On the basis of experimental data it is deduced that the structure change depends on influence created by the thought of torsional field having spin nature. Such mechanism lies in spin repositioning of tetravalent atoms of oxygen clusters that do not correspond to spin configuration of torsional waves that on one hand leads to partial or total clusters destruction as well as previous data deletion on the other it preconditions new clusters formation with spin orientation of oxygen atoms that are their part and correspond to spin configuration of inducing torsional waves, thus recording comprised in them information into water structure.

Consequently, totality of experimental data lets us draw conclusion that the material carrier of water memory is spin oriented structure of atoms oxygen clusters. The inference is also deduced that water memory has spin nature regardless of influence type being either informational or energetic. In the latter case the structure change occurs not because of spin repositioning of cluster oxygen atoms but due to power component influence of energetic field on other parameters of clusters (electric, magnetic, mechanic ones). In this case spin cluster configuration that has "remembered" the influence is formed due to water structural state created by the influence.

KEYWORDS: water structures, a cluster, mental influence, spin orientation, torsional field.

INTRODUCTION

It is known (Zenin, 2003; Emoto, 2006; Sinitsin et.al.,1999) that water has cluster structure which it changes under the influence of different energetic and informational influences. The influence character stipulates new type of the structure corresponding to the given influence. The information of the influence is coded in certain values and form of structural characteristics thus forming water memory.

It is expected (Zenin, 2003) that disclosure of structural and informational characteristics of water will be of considerable importance first of all to medical and biological domains of science and practice for many disorders of different body systems and health problems can be connected to the structural change of body water which is proved by experiments (Kovalenko, 2011a).

To determine the influence of structural and informational water characteristics on orthergasia of body system it is necessary to know mechanisms of water memory formation i.e. its restructurisation upon the influence. It is experimentally stated that upon the influence of electromagnetic fields of millimeter (Sinitsin, et.al.,1999) and decimeter ranges (Kovalenko, et.al.2011b) as well as magnetostatic field (Kovalenko, et.al. 2010) the defining contribution into restructurisation is connected with the influence of a power component of the fields – tension on vibrational and orientational character in movement of hexagonal structure ice fragments which are the elements constructing clusters and clusters themselves accordingly.

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Mechanism to form water memory upon mental and emotional influence is not yet determined. There are various assumptions about its nature. Thus, according to (Zenin, 2003) information is fixed by reconstruction of structural elements based on Coulomb attraction of their oppositely charged facets in the way to form matrix of mutual position of elements which corresponds to the influence of the thought or emotion.

However, this assumption does not explain the true mechanism to form water memory due to the following reason. According to the logic of this assumption, formation of a new informational matrix implies preliminary destruction of the old structural state connecting the structural elements into the former informational matrix. The assumption does not clarify how inducing thought or emotion the nature of which is neither electric nor magnetic nor electromagnetic can at first cause destruction of previous space structure which has been formed by Coulomb attraction and then can form another configuration of structural elements with new information by the help of the same influence.

In the works of M. Emoto (Emoto, 2006) formation of water memory is connected to the influence of fine form energy (hado) having wave nature on the form of water clusters. The energy can be both positive and negative. Its quality namely determines the form of clusters. In other words, mental or emotional influence on water is exercised through the field with nonelectromagnetic origin. The nature of such a field is not defined.

In (Kovalenko, 2012) is supposed that alteration of water structure parameters upon mental influence stems from the spinal repositioning of oxygen atoms clusters which is caused by torsional field formed by thoughts and emotions.The given article deals with the study of mental “dynamic” influence on water structure by the light scattering method. The results of the research testify to the spinal nature of its memory.

Experimental Technique

In the given experiment the method of light scattering is used. Its prototype was the method employed in biology and other interdisciplinary sciences to examine cellules . It measures dependences of I intensity of light scattered by cellular suspension on scattering angle Q – scattering indicatrix I(Q). Modification of the prototype and its adaptation to measure light scattering of water has made it possible to use the method in examining structural elements of water.

Measurement of light scattering indicatrices of water under various intensities Y of falling laser irradiation allows both to determine cluster sets, their dimensions, relative concentrations, tridimensional form and to study the influence of various energetic and informational factors on the structure under T=300K. Theoretical and experimental verification of the modified method is presented in the following works (Kovalenko et.al., 2008;2009a,b;20011c).

The study of mental influence on water structure was conducted through measurement of light scattering indicatrices of initial samples of water $I(Q)_{int}$ and the ones having been influenced $I(Q)_{inf.}$ Semiconductor laser with wavelength λ=0.65 μm and emitting power smaller 1 mW (laser pointer) was used as a radiating source. The laser beam of 3mm in diameter was pointed on the cylindrical glass cuvette of 8mm in internal diameter that contained the examined water sample. A photo receiver – silicon photodiode - was placed on the holder mounted coaxially with the cuvette at the distance of 40mm from its axis. The diameter of its photoreceiving surface is 1,37mm and its operating mode is photoemf. Photodiode was moved in an arc in the horizontal plane of the laser beam by the holder. Geometry of the experiment provided the angular resolution of 2°. A signal from the photodiode was registered by a digital voltmeter. The installation was provided with light tight screen having light absorbing inner surface to prevent outer ambient illumination as well as potential indirect light.

The dependences I(Q) were measured in the front halfplane towards expanding falling beam in the angular spacing of $4° \leq Q \leq 70°$ at a pitch of 2°.
The given angular spacing was chosen due to the following reasons. First, main fraction of scattered light for the majority of the examined water samples was mostly concentrated in a small-angle area $Q<50°$. Second, direct unscattered light was prevented from getting on the surface of the photodiode under $Q \geq 4°$.Intensity of laser irradiation Y was altered with neutral density filters.

The set and dimensions of clusters with radii $r \leq 2$ μm were measured under angular position of maxima Q_{max} calculation dependences

$$Q^2 I\int (Q) = \int (Q) \quad (1)$$

with the following ratios

$$r\,Q = 9 - 10\mu mgrad \quad (2)$$

by the examined in (Kovalenko, et. al., 2008,2009a) method. Cluster dimensions with r>2 μm were estimated by angular spacing ΔQ between periodic oscillations I on the curves I(Q) and (1) in the angular spacing of 20°≤Q≤60° caused by interference of diffracted on the clusters and refracted by them beams with the formula (Kovalenko et.al., 2009b) :

$$r \approx m\lambda/2tg(m\Delta Q_2)\cos Q_0 \quad (3)$$

where m – interference order, Q_o- angular position of interference maximum of zero order, ΔQ_1 – angular spacing between maxima of zero and first order.Variation degree of all cluster dimensions concentration N_Σ was defined as relation of integral intensity of scattered light having been influenced $I_{\Sigma inf}$ to the initial one $I_{\Sigma int.}$ Value I_Σ numerically equal to the area under the curve I(Q) in approximation of single scattering can be displayed as (Kovalenko, 2012)

$$I_\Sigma = \Sigma_i \beta_i N_i r_i YV \quad (4)$$

where ß – coefficient registering angular aperture of the photodiode and its spectral response; N_i, r_i – concentration and radius of i-type clusters; V-volume of lit water; i – number of cluster type (dimension).*

The degree of concentration change for various types of clusters was measured according to design values of relative scattering indicatrices R (Q) for every influence that are represented by ratio of measured scattering indicatrices of one and the same water sample after ($I(Q)_{inf}$) and before ($I(Q)_{int}$) being under the influence:

$$R(Q) = \frac{I(Q)_{inf}}{I(Q)_{int}} \quad (5)$$

The relative indicatrix (5) makes it possible to define both direction and degree of cluster change concentration because of the influence with the help of numeric value R (Q). Thus, value R(Q)>1 implies increasing cluster concentration and R(Q)<1 means decrease in concentration of clusters that form scattering intensity in the corresponding angular sector.

Moreover, based on correlation of angle positions of curve extreme values (5) and (1) on extreme values positions R (Q) one can determine dimensions of clusters existing in the water having been influenced. The most important advantage of such a method is higher distinguishing of extreme values R (Q) compared to maxima of the curve (1) that enables a researcher to discover the clusters that do not reflect on the dependence (I) due to its small concentration.

The best resolving power R (Q) lets to detect forming under the influence oversize clusters due to periodic fluctuations R in angular interval Q> 20° which usually either detect themselves weakly or in no way on the scattering indicatrices and dependences (I) when cluster concentration is very low. The given advantage allows to get more accurate data about scattering cluster set.There were singled out the following water samples: spring water, confined well water, and piped water. Informational influence was produced on every water sample individually for 10 minutes. To accomplish it a probationary water sample was exposed to mental influence of the experimentalist who was at the distance of 35-40 cm from the cuvette. Before testing the water sample the initial indicatrix $I(Q)_{int}$ was measured with the cuvette having been set in the installation in every experiment. The dependence $I(Q)_{inf}$ was subsequently measured.

* In the given work the change of I_Σ after the influence was stipulated only by change of total concentration of the clusters $N_\Sigma=\sum N_i$ as multipliers ß, Y, V were constant when $I(Q)_{int}$ and $I(Q)_{inf}$ were measured. The change of dimensions r_i of certain type clusters having been exposed to the influence was within metering error and hardly contributed to the change of I_Σ.

Experimental Results

Initial Water Samples Scattering

Scattering indicatrices of initial water samples of different origin were decreasing functions with increasing scattering angle. Typical scattering indicatrices of initial spring water samples are shown in fig.1. According to [Van de Hyulst, 1961] the observed form of indicatrices in small-angle

region (Q< 20°) is stipulated by diffraction of downward radiation on clusters with r >0,5 μm. In the interval of bigger scattering of angles it was conditioned by scattering on clusters with r <0,5 μm partially due to diffraction and in the result of reflection commitment of which increases along with raise of Q.

The structure of initial water sample regardless of its origin contained a set of clusters various in their dimensions: conditionally oversize (r>2,5 μm), large (0,95 μm ≤ r ≤2,5μm), medium (0,40 μm <r<0,95 μm) and fine (r≤ 0,40 μm). However, it should be noted that there were cyclic (within the period of several days up to several weeks) fluctuations of cluster sets and their concentrations under the influence of an external factor of unidentified nature while the water being stored.

To consider influence of the change of initial structure on the informational influence character there was introduced its classification with I and II stages of structural properties. According to this classification the whole set of the abovementioned clusters corresponds to the structural properties of I stage. Absence of fine clusters in the set or their extremely weal concentration corresponds to the structural properties of II stage.

"Dynamic" Influence

The sense of "dynamic" implies that informational content of the thought directed on the water was the process of rotation. The given influence was produced by fixation of mental image of the cuvette containing a water sample with clusters rotating around their vertical axes while liquid water fraction was immobile (further - spinning). The other mental image implied rotation of all water volume contained in the cuvette around its axis (further – swirling rotation). Character and degree of influence of mental rotation depended on initial water structure, rotation type and its direction (left, right). Under swirling rotation the water origin contributed a lot too.

Main results of spinning influence on the water structure are the following:

a) in all water samples of stage I regardless of its origin and direction of rotation spinning caused concentration decrease of mainly fine clusters of all types (in some cases – up to their total disappearance) as well as it led to insignificant increase of oversize clusters concentration (fig. 2 and 4, tables 1 and 2). As the result of influence the total cluster decrease was up to 7-9%;
b) in water samples of stage II regardless of its origin and direction of rotation spinning stipulated concentration increase of large and medium clusters as well as formation of fine clusters (fig.3-5, tables1-3). Value N_{Σ} increased 7-12%.
c) having compared values I_{Σ} we concluded that the influence of the left spinning was more significant than that of the right one (tables 1 and 2).

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Table 1. Parameters of spring water clusters after various types of mental rotation

№	Water sample state	r,μm	I_{Σ}, %
1	Initial	6,7; 0,95; 0,68; 0,48; 0,4; 0,34; 0,23	100
	Left Spinning	6,7; 0,95; 0,68; 0,48; 0,4; 0,34; 0,23	91
	Left Swirling Rotation	4,0- 6,7; 0,95; 0,48; 0,4; 0,34; 0,23	99
2	Initial	4,0; 1,73; 0,95; 0,68; 0,48	100
	Right Spinning	4,0; 1,73; 0,95; 0,54; 0,29; 0,22; 0,17	107,5
	Right Swirling Rotation	4,0 – 6,7; 1,73; 0,95; 0,68; 0,45	95,2

Table 2 Parameters of spring water clusters after spinning

№	Water sample state	r,μm	I_{Σ}, %
1	Initial	4,5 – 6,7; 1,58; 0,95; 0,55; 0,43	100
	Left Spinning	4,5 – 6,7; 1,58; 0,5; 0,4; 0,34; 0,23	111,7
2	Initial	3,5 – 5,4; 1,58; 0,95; 0,51; 0,43; 0,3;0,25; 0,21	100
	Right Spinning	3,5 – 6,7; 1,58; 0,95; 0,53; 0,43	93

Table 3 Parameters of confined well water clusters after various types of mental rotation

№	Water sample state	r,μm	I_{Σ}, %
1	Initial	4,5 – 6,7; 0,83; 0,54; 0,43	100
	Right Spinning	4,5 – 6,7; 0,83; 0,53; 0,43; 0,3; 0,23	105

2	Initial	4,5 – 6,7; 0,86; 0,48	100
	Right Swirling Rotation	3,5; 0,83; 0,48	101,3
3	Initial	4,5 – 6,7; 0,9; 0,53	100
	Left Spinning	4,5 – 6,7; 0,95; 0,51; 0,34; 0,24	107,4
	Left Swirling Rotation	4,5 – 6,7; 0,9; 0,53	101,6

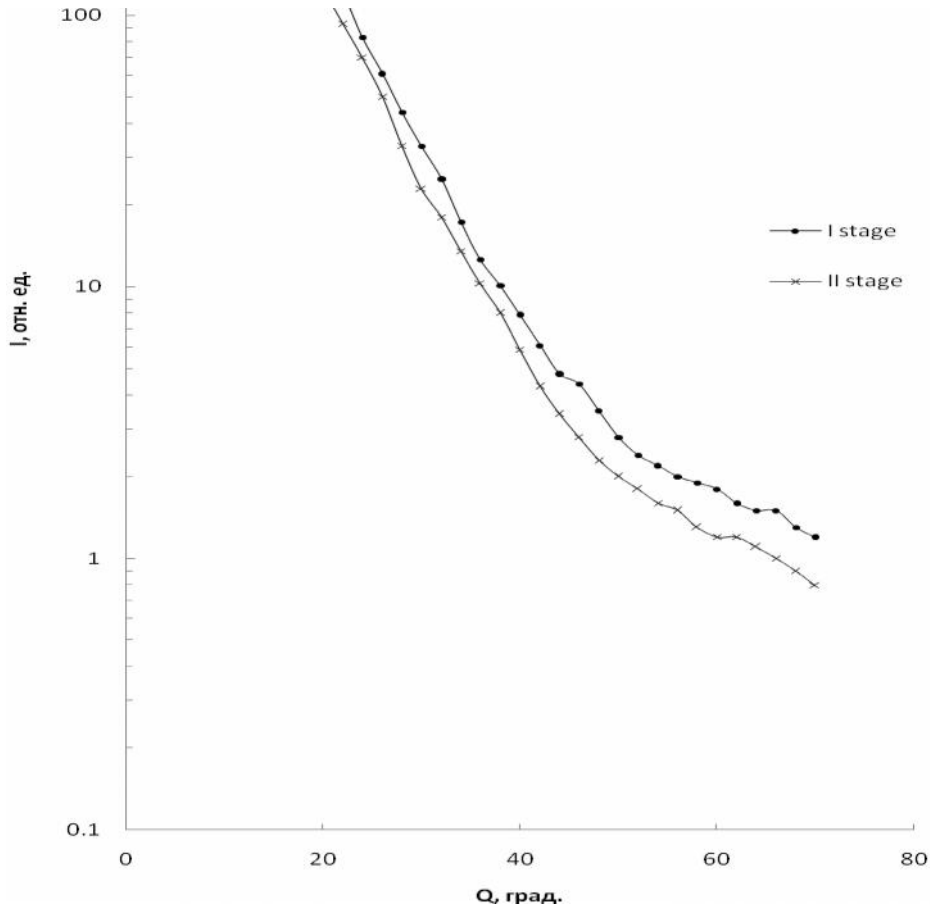

Figure 1. Scattering indicatrices of initial spring water samples of I and II stages of structure

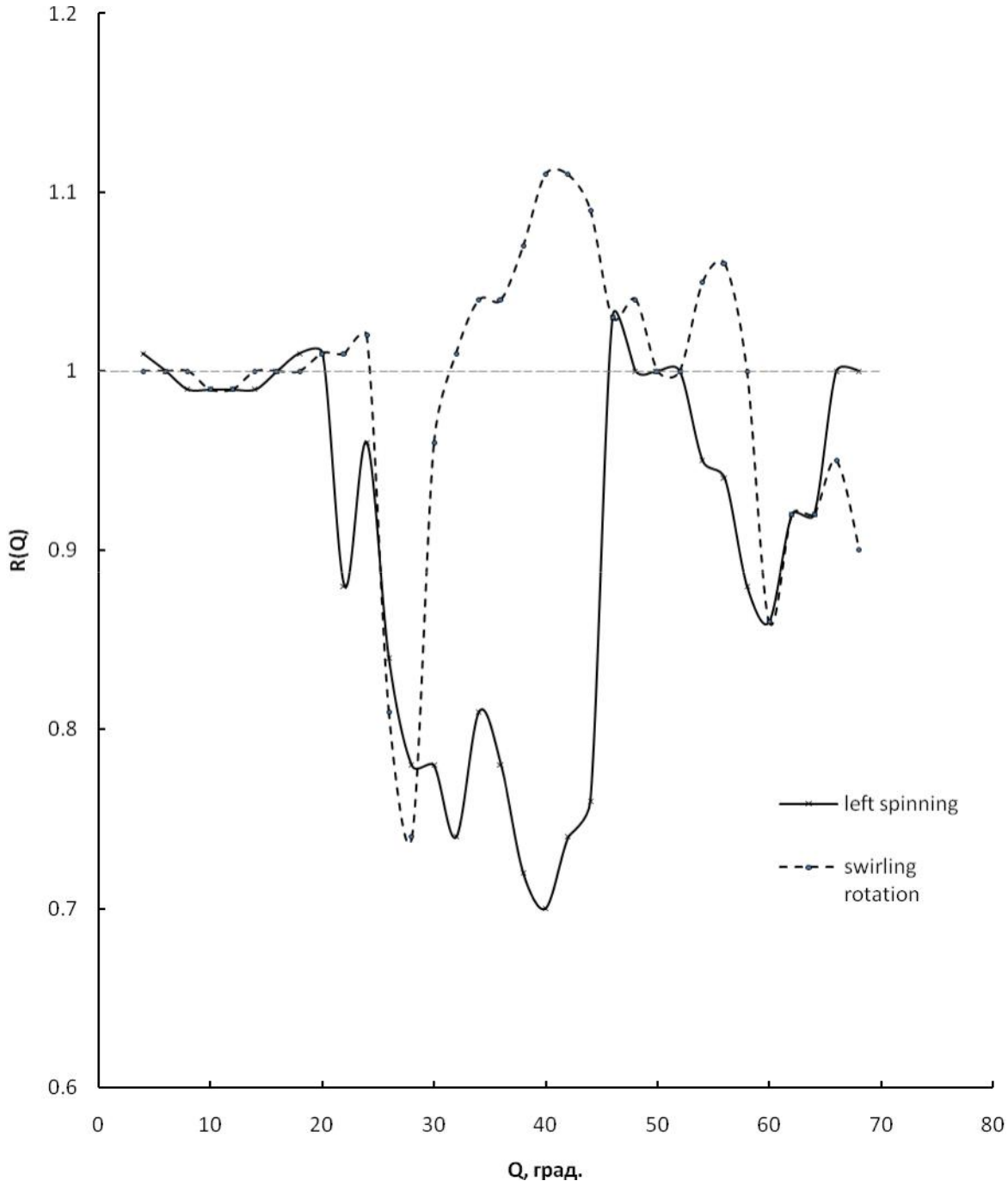

Figure 2. Relative scattering indicatrices of spring water samples of 1 stage after left spinning and swirling rotation influence

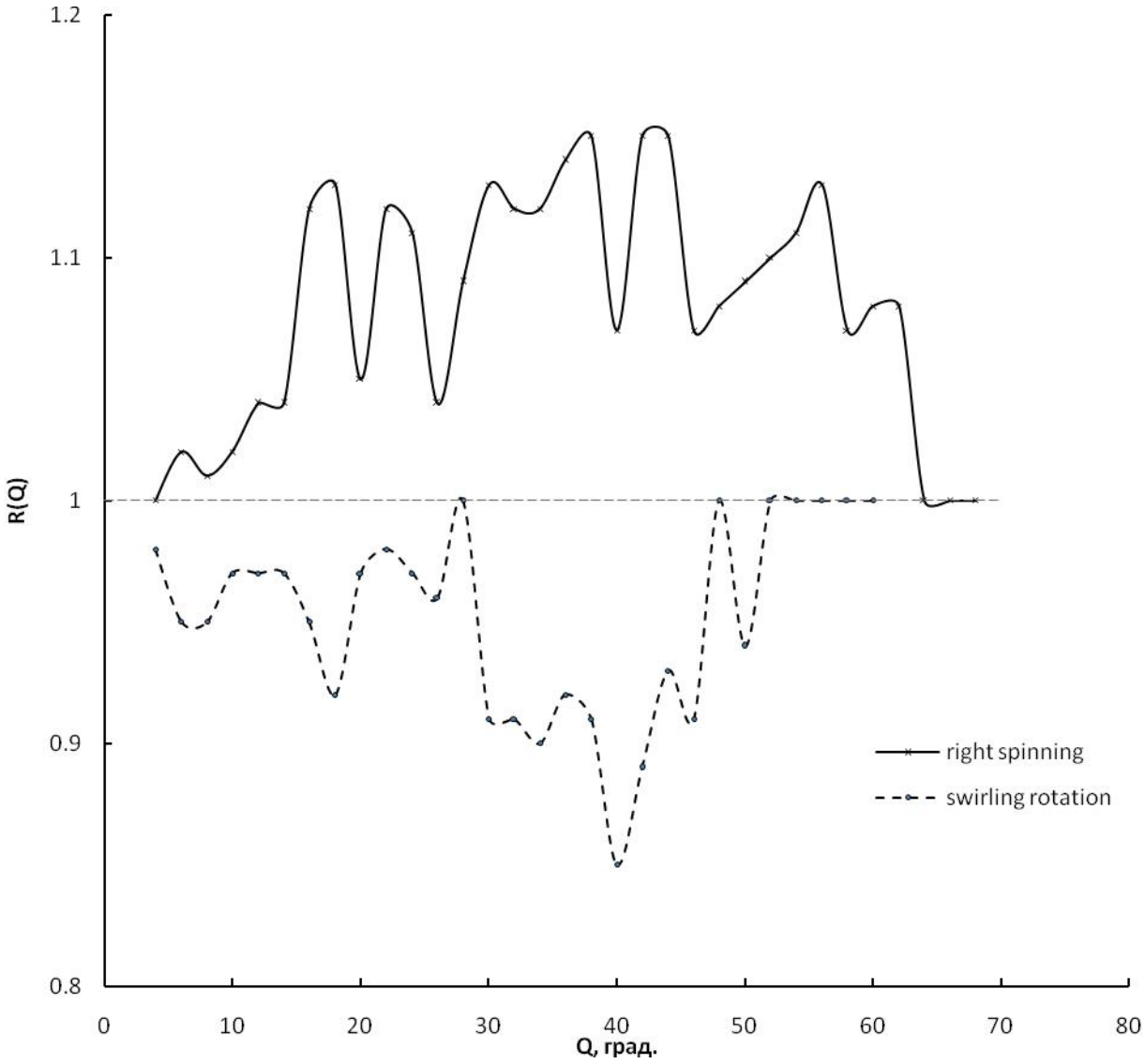

Figure 3. Relative scattering indicatrices of spring water samples of II stage after right spinning and swirling rotation influence

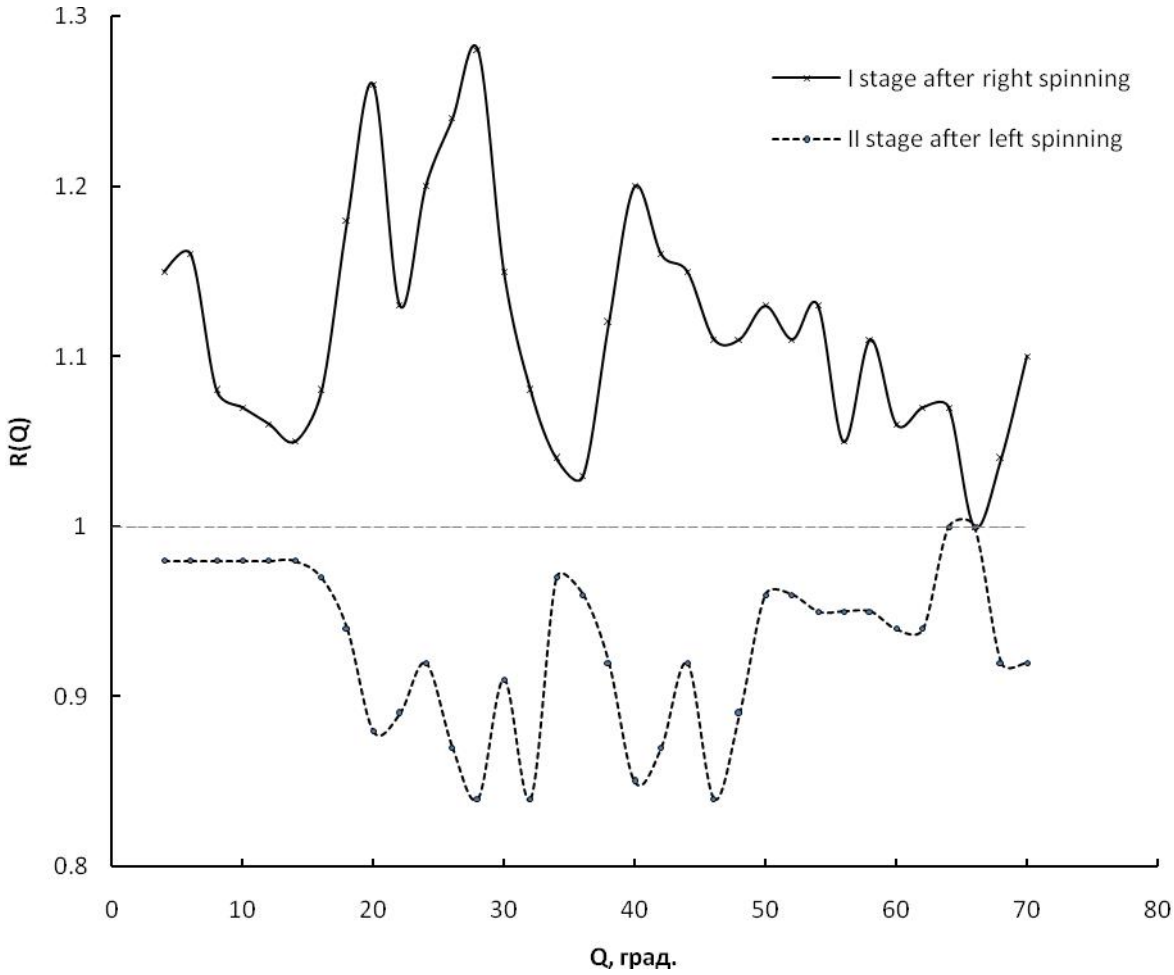

Figure 4. Relative scattering indicatrices of spring water samples of II stage after left spinning and the one of I stage after right spinning influence

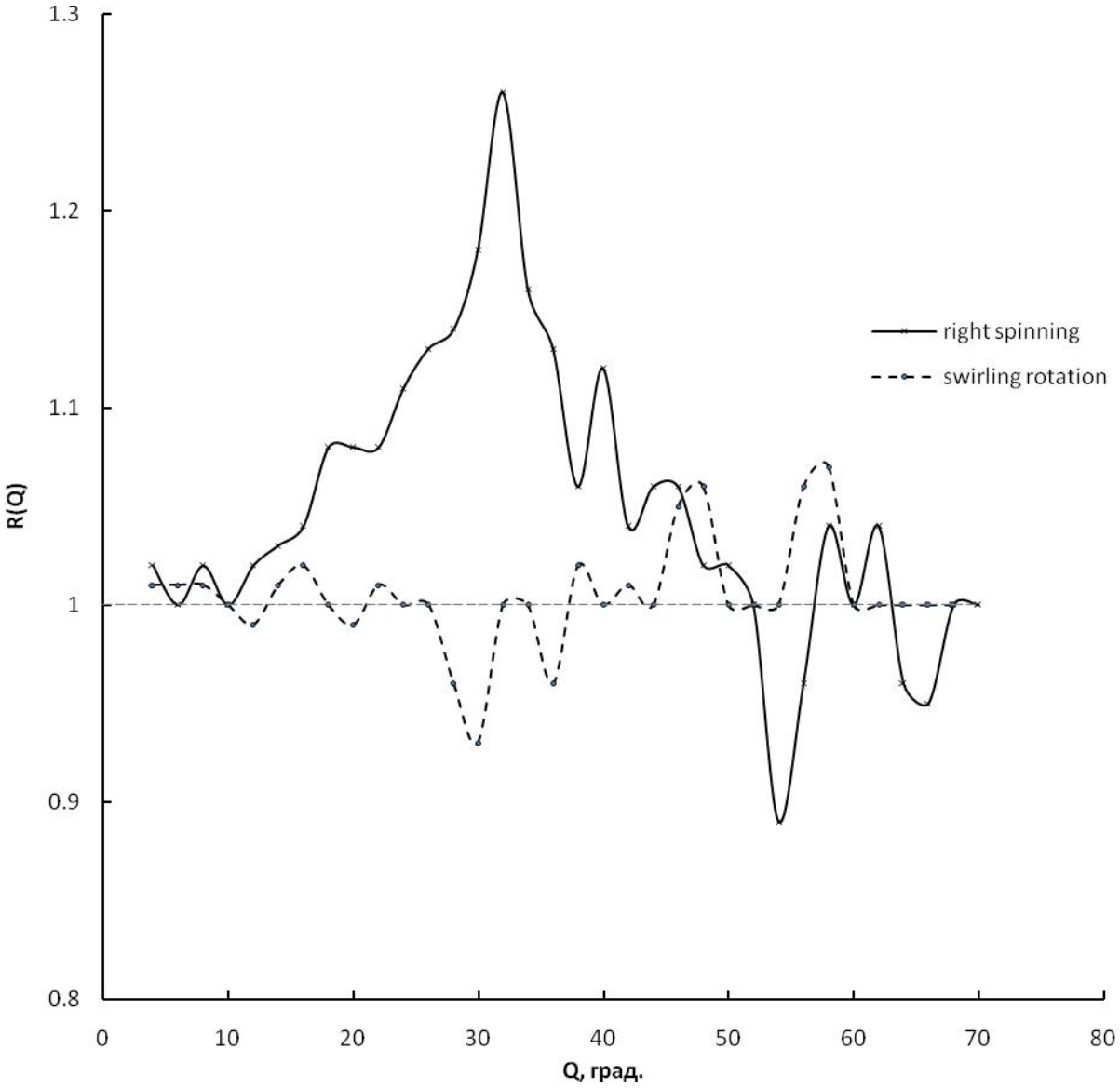

Figure 5. Relative scattering indicatrices of confined well water samples after right spinning and swirling rotation influence

In contrast to spinning the influence of swirling rotation was much weaker and was detected only in spring and piped water samples. The peculiarity of their initial structure was very small concentration of oversize clusters. Under the right swirling rotation the influence had a direction opposite to the one of the right spinning and led to decrease of large, medium, and fine clusters concentration as well as to formation of minute quantity of oversize clusters in dimension interval r ≈ 3,95 -6,70 μm. Maximum total cluster concentration decrease in spring water samples was no more than 4,8 % whereas the one of piped water did not go beyond 4%.

Mental left swirling rotation in spring water samples caused formation of oversize clusters of smaller dimensions compared to the ones in initial samples (table 1). It also led to alternating-sign change in concentrations of various dimensions fine clusters so that N_{Σ} almost did not vary (fig.2, table 3).

Left swirling rotation of piped water samples as

well as rotation of confined well water samples in both directions had almost no influence at all (fig.5, table3). Initial structure of the mentioned samples contained elevated concentration of oversize clusters with dimensions r≈ 4,50 -6,70 μm.

Discussion

Given data testify to the fact that mental "dynamic" influence changes water structure by the field nature of which is neither electric nor magnetic nor electromagnetic. According to (Akimov,1991; Shipov,1993) torsional field having spin nature is a physical carrier of consciousness, thinking and emotions. Mentioned aspects of human psychics can be represented as steady field formations – various (depending on information content) dimensional spin configurations i.e. torsional solitary waves. *

As the author supposed before (Kovalenko, 2012) influence of torsional solitary waves on water structure is as follows. In (Sinitsin et.al., 1999) it was shown that oxygen atom of water molecule in gaseous phase is bivalent and in its solid phase it is tetravalent. It is connected with the change of its electronic structure namely transition from p^2 into the state sp^3 predetermined by excitation from one of two p^2 electrons into 3s-state whereby oxygen atom has tetravalent electrons with uncompensated spins that provide for considerable value of a spin atom. ** Torsional solitary waves change water structure by influencing dimensional spin orientation of tetravalent oxygen atoms that are cluster types.

The above mentioned experimental data confirm known features and properties of torsional fields in a direct or indirect way. They also testify to the peculiarities of torsional fields behavior which makes it possible to claim the torsional nature of mental influence on water structure. The most important arguments supporting this statement are character, regularity and degree of change in structural parameters under spinning. In fact, informational content of mental water image with spinning clusters reflects literally the essence of a torsional field as a field of space torsion. Another confirming argument is correlation for dependence of influence degree on spinning direction and various character of influence of stationary right and left torsional fields on biological objects (seeds, plants) (Shipov, 1999).

The other evidence testifying to the torsional nature of mental image is given below under analyzing dependence of cluster water structure change upon its initial state. The given dependence is determined by peculiarities of molecular water structure.

In work (Sinitsin et.al., 1999) based on analysis of phase-aggregative water change with regard to its thermodynamic parameters it is ascertained that in liquid water along with unbound ("gaseous") water molecules there are hexagonal fragments of ice structure $(H_2O)_6$ that have been formed by hydrogen bonds. Formed clusters contain concentrations of molecules in "gaseous" and ice-like fractions of liquid water phase in its equilibrium state that are approximately equal:

$$[H_2O] = [(H_2O)_6]. \quad (6)$$

Thus, liquid water phase is mixture of molecular ice structure and free water molecules. According to (Sinitsin et.al.,1999) clusters are volumetric net of interconnected knurled planes formed by hexagonal fragments (further - rings).

Experimental data prove that initial water stage I distinguishes almost all of hexagonal rings being in bound state in clusters of various dimensions. Absence of fine clusters in initial structure of stage II testifies to considerable part of free hexagonal rings.

In water at stage I left and right spinning caused repositioning of those oxygen atoms that are a part of clusters spin directions of which did not coincide with direction of field influence. Spin repositioning involves turn of each of such atoms at the certain angle relatively its initial position. Since a "construction" of any cluster is "bound" through interplane, inplane (interring) and endocyclic hydrogen bonds, such orientational turn causes disruption of geometrical configuration (change of angles and lengths) in some hydrogen bonds of all cluster structure levels followed by its probable discontinuity that leads to cluster destruction.

* Assumed formation mechanisms of spin configuration in brain and its material carrier will be studied later

** A spin atom is vector sum of electrons spins and orbital moments and namely moment impulce of a core (Encyclopedic Dictionary of Physics, 1984).

The given data show that mainly fine and to a lesser degree medium clusters were exposed to destruction. That oversize and large clusters were

not destroyed is apparently determined by their higher mechanic endurance due to numerous inner planes. Some increase of oversize clusters concentration can be caused by binding of monodirectionally spin-directed cluster fragments destroyed under repositioning. This mechanism to form clusters is rather probable considering property of mutual attraction of similar torsional charges i.e. objects rotating into one side (Akimov, 1999) as well as the below given arguments supporting its authenticity. In water at stage II right and left spinning caused quick repositioning of oxygen atoms of free hexagonal rings. Since in this case oxygen atoms being their part have greater degree of freedom than those being part of clusters, their spin repositioning occurred without rings destruction followed by formation of clusters of various dimensions. In the given case new clusters formation can be determined by mutual attraction of monodirectionally spin oriented hexagonal rings.

Distinction of influence effect on water structure under swirling rotation from the one observed under spinning is connected to the difference of motion character and mechanisms of clusters interaction under two types of rotation. Under spinning clusters and free hexagonal rings did not practically change their position in water volume and fell under frictional resistance with liquid fraction. Under swirling rotation inducing information was perceived only by clusters and free hexagonal rings. Liquid fraction comprising "gaseous" water molecules where an oxygen atom is bivalent did not perceive it and was motionless. In this case clusters – mainly fine ones – and free rings that were moving along circular trajectories suffered frictional resistance not only with liquid fraction but also with more large-scale clusters. The latter ones were either less mobile or motionless at all because of larger surface area and mass. As the given data show depending on concentration and dimensions of such clusters their collisions with mobile clusters led to concentration decrease of the latter ones as the result of destruction, binding with oversize clusters, formation of new oversize clusters from the destructed ones, alternating sign change of concentration and dimensions of fine clusters or blocking their motion that cause no influence effect on water structure.

No formation of new fine clusters under the swirling rotation testifies to the absence of spin rotation of fragments and rings in this case. This confirms the conclusion about formation mechanism of new clusters owing to mutual attraction of monodirectionally spin-oriented fragments and rings under spinning.

Conclusions

1. Mental "dynamic" influence on water structure parameters (set of clusters, their dimensions and concentration) by means of torsional field that has spin nature is experimentally proved. Character and degree of water structure change depended on rotation type and its initial structural state.

2. Mechanism of mental influence on water structure was in spin repositioning of tetravalent atoms of oxygen clusters that did not correspond to spin configuration of inducing torsional waves as well as formation of new spin-oriented cluster structure identical to inducing one of spin configuration.

3. Spin repositioning of oxygen atom clusters in initial structure that keep previous information corresponds to the phase of its partial or total deletion and formation of new spin structure is connected to the parameters change of old clusters and generation of new ones with spin orientation of oxygen atoms that corresponds to spin configuration of inducing waves. At this stage of restructuring record of information which they comprise is accomplished into water structure followed by formation of its spin memory. Physical carrier of the latter is spin orientation of oxygen atoms of clusters

4. Water memory has spin nature regardless of influence type whether informational or energetic one. In the latter case the change of its structure is not determined by spin repositioning of cluster oxygen atoms. It occurs due to influence of power component of physical field on other cluster parameters (electric, magnetic, mechanic). In this case spin cluster configuration that "has remembered" the influence is formed in consequence of created by it water structural state.

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