Local ART model of internal time and its use in ART diagnostics and therapy

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Introduction

Concept existence internal time (BB) organism (chronosemantic concept) was proposed in [1-3] as hypothetical systemic-physiological principle, on the basis of which it was possible to develop and propose new methods of therapy and diagnostics within the framework of the ART-BRT technique. In accordance with this concept, any current mode of self-regulation of the body is selected based on theinternal time continuum model - his inner time. The internal model of the time continuum used to select the current mode of self-regulation includes three basic elements: "interpreted past", "simulated (predicted) future" and "BB generator", which maps the "interpreted past" into

"Predictable future", i.e. realizing the concept of anticipatory reflection of reality according to P.K. Anokhin [4]. As a representative IV system of an organism used forchronosemantic diagnostics and therapy, a system of basic chiroglyphic lines on his palms was proposed.

In subsequent works [5–9], examples of successful treatment using chronosemantic techniques were given, as well as statistical data allowing to compare the results of chronosemantic therapy and therapy using other ART-BRT techniques. The works [10–12] provide joint statistical reports of the ICIT “Artemis” and the State Healthcare Institution “TsVMiR No. 1” for 2007–2009, in which chronosemantic therapy is considered as the basic method of therapy. The works [13–15] show the effectiveness of the use of the CMH marker, built on the basis of the concept of existence and representation of the IV of the organism, for solving various problems of information therapy.

At the same time, the development of the concept of IV of the organism requires further research:

1. It is necessary to build more detailed models of the IV of the organism, tied, on the one hand - to his "material" - anatomophysiological - structures, on the other hand, to the structure of the results of measuring his reactions, for example, using R. Voll's electropuncture methods or ART.

2. The solution of the previous problem requires more detailing of the explosive models organism, at the systemic-physiological and structural levels of their consideration, up to construction of purely mathematical models.

3. Finally, it is possible to set the task of implementing a new level technical means of therapy and diagnostics of the body, using in their work the concepts of VV, as well as one or another of its representative systems, including those different from the previously used system of the main chiroglyphic lines of the palm.

In this work, it is shown that the space (set) of all possible VR responses of an organism to sequential loads by ordered sets

test-pointers of ART can naturally be interpreted as an (experimental) model of its internal time. The work is a continuation of work [17] and includes a generalized and refined interpretation of resonant chains, independent of additional assumptions about the properties of their constituent test pointers.

For brevity, the work uses set-theoretic symbolism [24].

Objectives of the work:

1. Writing chronosemantic interpretation resonant chains, detected in the process of ART examination of the body using measurements by the method with filtration.

2 To give a chronosemantic interpretation of the supposed contributions to the behavior of the organism of individual parts and links of the resonance chains identified during the ART examination.

3. Build internal time model organism based on the results of ART measurements by the filtration method.

Preliminary concepts and designations
Resonant and generalized resonant chains

For brevity, we will further call the measurement of the test indicator T direct BP-measurement, if it is carried out without filtering, and mediated, if it is produced by filtering methods through an additional marker T_0.

Let M be some test pointer that causes a direct BP, i.e. M ↓, and let S - test pointer compensating for it, i.e. M ↓ + S ↑. Test pointers type T_0 =M ↓ + S ↑ are called pseudotransparent.

Let the indicator test T evoke a VR response in the body: T ↓. Will the T test pointer also induce a BP response in the body when filtered through pseudo-transparent T pointer$_0$ =M ↓ + S ↑, i.e. whether the condition will always be satisfied T_0↑ + T ↓ = M ↓ + S ↑ + T ↓?

As the practice of ART shows [18–24], this is not the case: in general, the result is measurements of the test indicator T when filtering through a pseudotransparent test pointer T_0↑ = M ↓ + S ↑ is different from direct measurement. Resonant chain (RC) is called a sequence of test pointers T_{one}, T_2,... Tn, for which the VRT condition is satisfied:

$$T_{one}\downarrow \quad T_2\uparrow \quad \dots \quad Tn\uparrow, \ (1)$$

if n = 2k, i.e. the sequence contains an even number of test pointers, and

$$T_{one}\downarrow + T_2\uparrow \quad \dots + Tn\downarrow, \ (2)$$

if n = 2k + 1, i.e. the number of test pointers in the sequence is odd.

A distinction should be made between the measurement results T ↓ + T ↑ and (T + T)↑ because they are not coincide if condition T ↓ is not satisfied. The notation (1) and (2) should be understood in such a way that each subsequent test pointer in the chain is measured under the condition of filtering through the sum of all previous test pointers.

For example, the test pointer T_2 measured under the condition of filtration through T $_{one}$, test pointer T_3 filtered through T_1 + T_2, a T_n - subject to filtration through T_1 +

T_2 +... + T ($_{n-1}$).

By a chain RC of the form (1) or (2) is called a chain of the form:

$$T_{one}\downarrow + T_2\uparrow + ... + T_m\uparrow, (3)$$

if m = 2l, m <n, i.e. the sequence of the subchain contains an even number test pointers, and

$$T_{one}\downarrow + T_2\uparrow \ ... + Tm \downarrow, (4)$$

if m = 2l + 1, i.e. the number of test pointers in the subchain sequence is odd.

By definition, all hooks of a given RC containing an even number of links are pseudo-transparent test pointers, and subchains with an even number of links are compound test pointers that cause direct vegetative resonance.

The total number of test pointers included in the RC is called its order. Chain T = , that does not contain test pointers, is called an empty resonant chain (OCP). The power of an empty RC is 0.

Ordered list test pointers RC $T = T_{one}\downarrow + T_2\uparrow + ...$ called ordered sequence (T) = {T_{one}, T_2,..., Tn}, in which the order of inclusion of test pointers in the resonant chain is preserved.

For unordered list test pointers {T_{one}, T_2,..., Tn} included in the RC $T = T_{one}\downarrow + T_2\uparrow$ +..., the notation Sp (T) is used.

Finally, a composite test pointer corresponding to the RC $T = T_{one}\downarrow + T_2\uparrow$ + ..., the sum of the test pointers included in it is called: (T) = $T_1 + T_2$ +....

Resonant chain $T_{one}\downarrow + T_2\uparrow$ +... is called commutative if any permutation of its test pointers again forms a resonant chain. Obviously, that any two permutations of the commutative resonant chain T describe the same state of the organism. Physiological meaning commutability of RC T is that the result of ART measurements depends on only from compound test-pointer (T), but not from the sequence of introduction in the measuring the contour of the test pointers T that make up this chain$_{one}$, T_2,....

Currently, the vast majority of resonant chains, arising in the practice of ART-BRT, are assumed to be commutative. In any case, none of the works known to the author studies the effects arising from permutation of test pointers, as well as the possible use of permutation of test pointers for the purpose of additional diagnostics of the patient.

All possible RCs are obtained from the simplest RC of the second order:

$$T = T_0\downarrow + T'\uparrow, (5)$$

respectively:

$$T = T_0\uparrow + T\downarrow, (6)$$

by substituting T_0 or T some RCs of a smaller order (including - empty RC), where for convenience of presentation it is assumed that the first link in RC may not generate direct VR.

Let's introduce the concept generalized resonant chain (ORC). A generalized resonant chain is a sequence of test pointers filtering through each other, indicating the results of VR measurements after adding each subsequent test pointer of its component:

$$T = T_{one}\updownarrow + T_2\updownarrow + ... + Tn\updownarrow, (7)$$

where each of the measurement results ↕ takes one of two values: ↕ ↓ (presence of vegetative resonance) or ↕ ↑ (no vegetative resonance), regardless of the values of the rest.

For example, sequences of test pointers and filtered measurements $T_{one}↑ + T_2↑ + T_3↓$ or $T_{one}↓ + T_2↓ + T_3↑$ are generalized resonant chains (ORCs) in the sense of the above definition, although they are not resonant chains (RC) in the sense of the definition of RC.

The generalized RC reflects the result of an arbitrary sequence of measurements with filtering without reference to the obligatory alternation of "compensated" and "uncompensated" measurement results.

By a chain ORC of the form (5) is called a chain of the form:

$$T^* = T_{one}↕ + T_2↕ + ... + T_m↕, \quad (8)$$

where m <n, i.e. strict subsequence test pointers and measurement results with filtering belonging to ORC T.

Definitions ordered list (T), an unordered list Sp (T), and a composite test pointer (T) for the ORC, the corresponding definitions for the RC are literally repeated.

A generalized resonant chain T is called commutative if, for any permutation of test pointers in it, the final result of VR testing does not change, i.e. depends only on the amount (T) test pointers included in it.

The simplest ORCs include, in addition to RCs of the form (5) and (6), also chains:

$$T = T_0↓ + T↓ \quad (9)$$

and

$$T = T_0↑ + T↑. \quad (10)$$

All possible ORCs are obtained from the simplest ORCs of the form (5), (6), (9) or (10) by substituting the ORCs of a smaller order in them.

It is assumed that the test pointers that make up the links of the considered RC or ORC belong to a fixed list measurable test pointers SPT.

Global and local models of VV of the organism

It is possible to consider two main classes of models of the IW of the organism: the models of the local and, accordingly, the global IU. In the models of the local IW of the organism, there is no reference to real physical time; the temporal nature of the response is determined by the ordering (ordered sequence) of states that it undergoes. In models of the global IW of an organism, on the contrary, there is a reference to real physical time, therefore, the temporal nature of the response is due to the development of the organism in question in a real time continuum. This, the latter, can be mapped into the elements of the internal (modeled) time continuum of the organism in a non-trivial way, in particular, it has a geometry that is far from the geometry of the real line.

Models of the body's local IW reflect its "instant response" to the impact, their temporal nature is determined by taking into account the sequence of states in which it was previously brought. These models reflect the regularities of the body predicting all kinds of "branches" of its development / response, depending on the sequence of signals it recognizes, and subject to the complete constancy of the laws by which its reactions are built - adaptive responses to incoming signals.

Models of the global BB of an organism, on the contrary, reflect its evolution in the external time continuum, taking into account the reactions of “memorizing” plastic changes received in the past and “forecasting”, on this basis, possible future situations and ways of optimal response in them.

In any case, the BB model is considered built if:

- a set of elements representing the states of the organism in the "time continuum of the interpreted past";
- a set of elements representing its state in the "time continuum of the predicted future";
- display (usually parameterized) of the "generator of explosives", which specifies the transition from the interpreted past to the predicted future of the organism.

In the models of the global IW of the organism, the display of the “generator of the IW” is usually parameterized by the boundary conditions in which its self-realization takes place. Different branches of the “time continuum of the predicted future” of an organism arise as a consequence of different boundary conditions, i.e. various external and internal circumstances of development in which he falls.

In models of local IW, for the transition from the state of the "interpreted past" to the state of the predicted future, the presence of some "external condition" is required - an additional "external" effect on the body, which is a natural parameter of the display of the "generator of IW".

Theoretical preconditions for chronosemantic interpretation resonant and generalized resonant chains

The chronosemantic interpretation of RC and ORC, given below, is based on the following assumptions about the nature and main manifestations of the phenomenon of vegetative resonance:

1. Any control signal introduced into the body causes in it adaptive response - the body's adaptive response to this signal. The nature of this reaction is the adaptation of the organism to somean additional condition for self-fulfillment, information about which the control signal carries.

2. The body has the ability to simulate the result of adaptive reactions to the control signal. The result of this simulation is the anticipatory reflection by the bodystates, in which it will be located when the adaptive reaction is fully developed in it - the acceptor of the result of the action of the PS, which is responsible for the development of this reaction.

3. The result of modeling by the body of the state after development adaptive response to a control signal is represented by him as a change in the results of VR measurements. Namely:

- the result of direct measurement of some test indicator T reflects action result acceptor functional system PS (T), which is responsible for the development of an adaptive response to this signal;

- measurement of the same test indicator T with filtration through the test indicator T reflects the result of the body's modeling of the state after the development of an adaptive response to the T signal on condition, that organism already adapted to the signal.

Construction of a local model of an IV organism based on ART data, requires more group methodological prerequisites, concerning reproducibility the results of ART. It is assumed that:

4. The results of VR testing of the organism at the current time, i. E. in its current state, steadily reproducible. In fact, since it is impossible to repeat the measurements “at the current moment of time” (this moment has already passed), it is implicitly assumed that there is a whole “ensemble” of identical patients and the same “ensemble” of identical experimenters who, having performed the measurement procedure at the same point in time get the same result. This assumption is an extension to a biological object - an organism - of the principles of statistical physics, which seems to be a legitimate methodological device.

5. The results of VR-testing of an organism are objective; do not depend on testing operator. In particular, the measurement results are not influenced by the phenomenon of "mental testing".

Chronosemantic interpretation of resonant and generalized resonant chains, as well as individual links in them

The most difficult is the interpretation of the two simplest RCs: T ↓ and T ↑. Resonant chains T ↓ and T ↑it is forbidden interpreted simply as significant, respectively, insignificant body compound marker (T), how it could be done, neglecting the phenomenon of changing the measurement results when filtering through pseudo-transparent markers.

In the framework of the proposed approach, the resonant chain T ↑ is interpreted as a model equilibrium state organism, subject to an adaptive response to the T test indicator. equilibrium the state of the body is understood the absence of an inherent in this state of the adaptive reaction, which removes the organism from it.

Equilibrium states of the body should not be equated with state of "perfect health", because in them the organism may be incapable of solving a large number of tasks of self-fulfillment, and moreover, incapable of long-term existence. Examples of equilibrium states of the body are all states of chronic diseases (including oncology). However,state of "perfect health", as well as intermediate

states of "partial healing", achieved in the course of therapy also refer to the equilibrium states of the body. So, the RC of the form T ↑ is a model

equilibrium (intransient, ending in equilibrium)
adaptive reaction of the body:

- in relation to dia gnostic - a model of an equilibrium state health "or" chronic disease "of the body;
- in relation to therapy - the model of "stabilizing therapy" - a control signal that transfers the body into equilibrium state.

The control signal that causes an adaptive response, as a result of which the body goes into an equilibrium state, is called hereinafter for brevity stabilizing.

Without additional measurements (moreover, assumptions), it is impossible to draw conclusions about whether the RC of the type T ↑ reflects the state of “health” or “chronic disease”, and, accordingly, the corresponding model of “stabilizing therapy” is “bad” or “good”.

The resonant chain T ↓ is interpreted as a model non-equilibrium (transient) state organism, in which the adaptive reaction that removes the organism from it is inherent in this very state. Thus, the RC of the T ↓ type is a model of an unequal-weight (transitional, not ending in an equilibrium state) adaptive response of the organism:

- in relation to diagnosis - the model of "acute, developing disease" (in the transitional stage of progressive, or regressive vicarization);

- in relation to therapy - a model of "destabilizing" therapy, which transfers the body into a non-equilibrium (transitional) state. The control signal that causes a non-equilibrium adaptive response, as a result of which the body goes into a non-equilibrium state, for brevity is called hereinafterdestabilizing.

Both models - both equilibrium and non-equilibrium state, subject to adaptation to the signal T - are built by the organism itself. The organism, being an integral self-regulating system that simulates possible future states, determines whether or not it will go into an equilibrium state when adapting to the T signal, which is monitored by ART. Therefore, the above interpretation of single-link chains T ↓ and T ↑tantamount to next:

- the measurement result T ↓ can be interpreted as failure to the organism to simulate a steady state, as an outcome adaptive response to the T signal;
- the result of measuring T ↑ can be interpreted as ability the organism to simulate a steady state, as an outcome adaptive response to T.

To show the difference between “stabilizing” and “destabilizing” models of therapy by example, let us turn to the practice of ART-BRT.

A “destabilizing” approach to therapy is presented in the ART-BRT method by H. Schimmel [23]. The homeopathic drug used for therapy causes a "drug disease" in the patient's body, which, according to S. Hahnemann, should supplant the present disease. This adaptive response (exit from the state of "drug disease") is used by homeopathy for therapy of the initial

- non-drug - the patient's disease.

disease ”corresponds to the phenomenon of vegetative resonance (a particular case of the BP phenomenon) G ↓, caused in the patient's body by the homeopathic preparation G, which is supposed for therapy.

Condition G ↓ alone is not enough for drug G to be an effective signal for treating a disease with model M.

One more condition must be met. Ifdisease model is a set of test pointers M, then M_i↓ + G ↑, for each M_i, belonging to M - signal G compensates for a group of nonequilibrium reactions organism, characterizing the state of the disease.

So, according to Schimmel, drug G that can be used for therapy:

1. Causes a non-equilibrium adaptive reaction of the organism, which is displayed condition G ↓.

2. Transforms an organism with a disease model M into an equilibrium state, into which M_i↓ + G ↑ for each M_i, belonging to M, i.e. the group of test indicators M was compensated - the model group of the disease.

At the same time, VRT-BRT has alternative approach to therapy, developed by Yu.V. Gotovsky, L.B. Kosareva et al. [18], based on the manufacture of bioresonance drugs, which translates the body into an equilibrium state.

With this approach, a non-equilibrium signal is first produced or selected S, such that S ↓, and then by receiving the response O (S) of the body to the load with this drug, the therapy signal S '↑ = S ↓ + O (S) ↑ is constructed.

The therapy signal S 'is subject to the requirement M_i↓ + S '↑ for each M_i, belonging to M, i.e. claim for compensation of the model group of the disease, coinciding with the second Schimmel condition. At the same time, the first Schimmel condition - G ↓ - is replaced in the approach of Yu. V. Gotovsky and L.B. Kosareva and others on the opposite - S '↑ - the condition for the transfer of the organism to an equilibrium state, ie, for therapy, “stabilizing” control signals are used, instead of “destabilizing” in Schimmel.

Examples of stabilizing signals of therapy, designed to transfer the body to an equilibrium state, are the general and specific drugs of Yu.V. Gotovsky [18].

The effectiveness of therapy is achieved using both the first and second of the described approaches. This circumstance allows us to conclude that the condition for compensating the model group of the disease is more important than the condition for stabilizing or destabilizing the state of the body by a therapy signal.

Turning to the interpretation of the constituent elements of second-order RCs, we note that exactly two such RCs are possible: of the form (5) or the form (6).

For RCs of the form (5) i.e. T ↓ + T ′ ↑ the first link T ↓ describes:

- in relation to diagnostics - a model of the "non-equilibrium state" of the organism as a result of adaptation to the T signal;
- in relation to therapy - a model of "destabilizing therapy" of the body by adapting to the task symbolized by T.

Accordingly, the second link T ↑ of this chain describes:

- applied to diagnostics - model "Missing resources" for the transition of the body to an equilibrium state;

- applied to therapy - model "Stabilizing" therapy by adding "Missing resources" provided that the body preliminarily brought to a nonequilibrium state T ↓.

In the case of RCs of the form (6), i.e. T ↑ + T ↓, the first link describes:

- in relation to diagnostics - a model of the equilibrium state of the organism, as a result of adaptation to the task T;
- in relation to therapy - a model of "stabilizing therapy", the body by adapting to the task symbolized by T.

Accordingly, the second link T ↓ describes:

- applied to diagnostics - model projected losses the organism while maintaining the equilibrium state T ↑, in other words - the model of "price for adaptation" to the task symbolized by T;
- applied to therapy - model "Destabilizing" therapy by adding "predicted losses", provided that the body is previously brought to the state T ↑.

Passing to resonant chains consisting of an arbitrary number of links, we obtain the following interpretations:

Test pointer $T = T_{2k}$ included in the RC $T_{one}\downarrow + T_2\uparrow \ldots + T_{2k}\uparrow$, consisting of an even number of links, is interpreted:

- in relation to diagnostics - as a model of “missing resources” for transferring an organism to an equilibrium state, provided that it is previously brought into the sequence of states described chain $T = T_{one}\downarrow + T_2\uparrow \ldots + T_{(2k-1)}\downarrow$;
- in relation to therapy - as a model “stabilizing " therapy by adding missing resources under the condition of preliminary reproduction in the body of a sequence of non-equilibrium states described by the chain $T = T_{one}\downarrow + T_2\uparrow \ldots + T_{(2k-1)}\downarrow$.

Test pointer $T = T_{(2k+1)}$ included in the RC $T_{one}\downarrow + T_2\uparrow \ldots + T_{2k}\uparrow + T_{(2k+1)}\downarrow$, consisting of an odd number of links, is interpreted:

- applied to diagnostics - as a model projected losses subject to preliminary bringing the organism into sequence states described by the chain $T = T_{one}\downarrow + T_2\uparrow \ldots + T_{2k}\uparrow$;
- in relation to therapy - as a model "Stabilizing" therapy by additions projected losses subject to the preliminary reduction of the organism to the sequence of states described chain $T = T_{one}\downarrow + T_2\uparrow \ldots + T_{2k}\uparrow$.

Notes:

1. In the case when RC T ↓ is commutative, as an indicator “prices for adaptation "can be considered any test-pointer Tj, since it can be rearranged to the last place.

2. The dual nature of the RC interpretation (as a model of diagnosis and therapy) arises from the refusal to use additional information about the nature of test pointers included in it. Each test pointer can be interpreted simultaneously, and as a VR modeldiseases, and as a VR model signal therapy for this disease.

In the proposed model causal connection between successive links of the RC turns out to be independent of additional

properties of the signals included in it, however, it depends on the "parity" with which the test pointer enters the chain.

To extend the chronosemantic interpretation of RCs to the ORCs, it is necessary to interpret two additional basic ORCs (9) and (10). The first links of these chains are interpreted in the same way as in the case of chains (5) and (6). As for the second link, in this case it admits the same interpretation both in case (9) and in case (10): the second test-indicator T
interpreted as conditionally neutral or pseudo transparent
with respect to the chain T_0. The information provided by ART is insufficient for a more detailed description of its action. Transition to ORC with a large number of links in the T chain$_{0↕}$ does not change the interpretation of its last link.

Local model of the body's internal time as a set of generalized resonance chains in measurements with filtration

The proposed model for the interpretation of RC is a direct application of the concept of an organism's IW to its modeling of its states and adaptive reactions.

The control signals recognized by the body determine its dynamics in local internal time - the space of the states of adaptive responses modeled by him, to biologically significant influences - signals under the additional condition that he already was put into a specific sequence of states of adaptive responses to some -

preliminary - impact.

Within the framework of ART, ordered sequences of the effect on the body with signals are represented by ordered lists of test indicators, the elements of which, for certainty, are assumed to belong to the SPT list, and the sequences of the body's adaptive responses to these signals are generalized resonance chains describing the sequence of its transitions to equilibrium or nonequilibrium states. Thus, the "time continuum of the modeled future" of the organism,as well as and

"temporal continuum interpreted of the past" are described a set of "codes" CH (SPT), which are resonant chains composed of generalized test pointers, belong to spt.
Everyone from of these "Codes" describes, Firstly, orderly
the sequence of signals to which the body has to give an adaptive response; secondly, the sequence of the body's adaptive responses to it. The set of CH (SPT) "codes" does not coincide with the set of all generalized resonance chains, the test pointers of which belong to the SPT, since the body cannot realize all possible responses to
him signals, but only some of them. For example, if the chain $T = T_{one↓} + T_{2↑}$ CH (SPT), then none of the chains of the form $T^* = T_{one↑} + T_{2↓} + T$ not belong CH (SPT), as well as chains of the form $T^{**} = T_{one↑} + T_{2↑} + T$, and $T^{***} = T_{one↓} + T_{2↓} + T$, where T - arbitrary ORC.

"Shift" T mapping », Assigning to each generalized resonant chain T↕ belonging to CH (SPT) the generalized chain T↕ + T ↕, preserve the set of generalized chains representing
the sequence of the organism's adaptive responses to the sequence of influences on it, if given suitable (realized by the body)

the values of the first and second "arrows", which can be done in only one way. In this case, the generalized RC (with appropriate arrow values)
T↧ + T ↧ belongs to CH (SPT) and the mapping ST :
CH (SPT) → CH (SPT). The set of "shifts" in T », Where T belongs
CH (SPT), sets T Is a parameterized mapping S (more precisely, T -
parameterized family of mappings ST) from the “interpreted past” to the “predicted future”, i.e. "Local explosive generator".
The set of "code space" and "local explosive generator" ST and represents a model of local internal time in the sense of a given
above definition, i.e. ART model of internal time.

If causal relationships in the body remained during any physical time interval absolutely unchanged, the indicated structure of the body's local IW would fully describe (in the ART model) all its possible reactions and transitions of its states in response to the influences symbolized by the sequences of test indicators from the SPT, at this time interval. In this case, theoretically, a single (albeit very voluminous) ART examination would be sufficient to predict the body's responses to BRT. In fact, the internal state of the organism changes depending on changes in both external (for example, seasonal) and internal conditions (aging processes, progressive and regressive vicarization). Therefore, ART examinations of the patient's body, carried out at different points in physical time, will reveal different structures of his local IV. However, each structure of the body's local IW, revealed in the course of a specific ART-examination, suggests a way of modeling its possible future "over the entire interval of physical time, from the moment of examination to infinity." However, in the process of such modeling, the body is not guided bymoments of real physical time about which he has no information, but to the adaptive responses predicted by him to certain sequences of biologically significant influences, symbolized by ordered sequences of ART test pointers.

The accuracy of the constructed model of the local IW of an organism is limited by the accuracy modeling them a sequence of equilibrium states and transient reactions between them, in relation to the sequence real states and real transient reactions, arising from real adaptation to the considered resonant chain. At each transition - from one state, modeled by the organism, to another, i.e. adding the next test indicator T to the considered RC T T + T , - "real" forecast is replaced

symbolic forecast, reflecting the result

implementation of the acceptor of the action of the functional system FS (T + T) responsible for adaptation to the test indicator T provided that the body was previously brought into a state simulated acceptor of action functional system FS (T). The latter is responsible for the adaptive response to the resonant chain T, which includes all test pointers preceding T .

An important special case of modeling a local IW of an organism is the interpretation of its commutative model, which assumes that its states do not change when the order of the presented signals is rearranged, i.e. any RC is characterized only by Sp (T), but not (T). It is physiologically

corresponds to the fact that the body, at least at the level of the VRT model, does not distinguish sequences test pointers presented to it.

A purely mathematical observation that in this case the ART model of the local IW of the organism is endowed with the natural structure of the Boolean ring is curious [24]. Indeed, in the commutative case, instead of RCs, one can consider their equivalence classes, which consist of all possible permutations of test pointers in some representative of the class.
Sum (top edge) $T_1 + T_2$ generalized resonant chains is defined in the commutative case as the RC equivalence class, including RC,
obtained by sequentially adding test pointers from the chain T_2
to the chain T_{one} behind, until they are exhausted, and the product (bottom edge) T_{one} T_2 - as an equivalence class of RC, including RC, containing all test pointers belonging to both T1 and T2, i.e. Sp (T_{one}) combines with Sp (T_2).
The axiomatics of a Boolean ring is fulfilled due to the fact that the set of classes the equivalence of RCs - elements of a local IW of an organism - turns out to be naturally correlated to the set of all subsets of the SPN set, with the operations of union and intersection of these subsets.

Discussion

The most important consequence of this study is a significant difference in the behavior of the organism in the case of commutative or non-commutative adaptive responses to the action of an ordered sequence of test pointers.

The commutativity of the body's reactions - their independence from the order of presentation of test pointers - determines its simpler, but also less predictive behavior. In this case, the body cannot simulate the sequence of physiological restructuring of self-regulation modes that occurs in a specific order.

The non-commutative nature of the organism's reactions - their dependence on the order of presentation of the test pointers to it causes a much more complex, but also more predictive behavior. In this model, the body models and represents in the form of the results of an ART examination, physiological changes that can occur only instrictly defined
sequence.

Systematic studies of the commutability of the body's reactions upon sequential presentation of test pointers to it have not been carried out either within the framework of ART or within the framework of any other implementations of the drug test. Therefore, the answer to the question of how complete the advanced (prognostic) behavior of the organism upon presentation of test indicators is awaiting experimental resolution.

Chronosemantic interpretation of RC (and ORC) is an alternative to the “address” way of their interpretation, in which each subsequent test-pointer of the chain is interpreted as an “address” in relation to which the problematic effect of the sum of the previous test-pointers manifests itself [18]. Difficulties in the “address” interpretation, as noted in [17], are the impossibility of correctly defining the classes of “addresses”. The author intends to devote a separate work to the comparison of these two approaches.

Conclusions:

1. Built chronosemantic interpretation resonant chains, detected in the process of ART examination of the body using measurements with filtration.

2 A chronosemantic interpretation of RC subchains and links identified during its ART examination is given.

3. Constructed mathematical local internal time model organism based on the results of VRT measurements with filtration. Assuming that the test pointers used in the survey belong to the SPT list, this model is a subset of generalized resonance chains formed from these test pointers, which are realized by the body as sequences of adaptive responses to ordered sequences of signals reproduced by it in the current

condition. The local IV model of an organism contains complete information about the reactions predicted by it in response to impact test pointers from list SPT provided that preliminary the sequence of its adaptive responses to a sequence of signals, preceding the current signal.

4. An urgent problem ART is an revealing conditions commutability or non-commutativity VR-test, as well as the construction of models of VRT-examination, using commutativity, or, on the contrary, non-commutative reactions of the organism when sequentially presented to it with test-pointers.

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K.N. Mkhitaryan Local ART model of internal time and its use in ART diagnostics and therapy // XVII

S.40-65