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### CONCEPT OF THE METALANGUAGE FOR BIOLOGY FROM VIEWPOINT OF NATURALIST: 3. PROPOSAL OF OPERATORS FOR DESCRIPTION OF CHARACTERS OF LINKS

The domain of biology, as the field of thinking, is notable for the wide diversity of the names of the links between the concepts. The generally accepted technique for the formal expression of these names has not been worked out yet. The finding of the finite number of the sign means for the expression of the principally unrestricted diversity of the names (characters) of these links would become the breakthrough. Particularly this idea is followed by «Metalanguage for Biology» (MB), which we elaborate. Thus, we endeavor to establish the finite collection of operator for the unlimited number of the names (characters) of the links, which can be thought. This paper clarifies the selection of the operators out of the existing ones, and the underpinning of the proposal of the new ones in order to make the entire system of operators, which would serve for the construction of the expressions in terms of MB.

We divide the proposed collection of operators for MB into four classes: 1) mathematical; 2) logical, including the subclasses of 2.1) statement-identity-negation; 2.2) parataxis; 2.3) branching; 2.4) subordination; 2.5) others; 3) positional class; 4) class of derivation. We adopt the widely-accepted operators from the mathematics, logics, and the programming theory for the 1<sup>st</sup> and particularly for the 2<sup>nd</sup> class, whereas we form the 3<sup>rd</sup> and 4<sup>th</sup> classes out of the entirely new operators – those, which we propose. The purpose of this paper is to demonstrate the general idea of the new and adopted operators for MB.

The subclass of statement-identity-negation: 1) `lisl` or `leqvl`; 2) `lisnotl` or `lneqvl`; 3) `ltruel`; 4) `lfalsel`.

The subclass of parataxis: 1) `landl`; 2) `lorl`.

The subclass of branching: 1) `lifl ... lthenl ... (ltsel ... ) lendl`; 2) `lforl ... lbeginl ... lendl`; 2) `lwhilel ... lbeginl ... lendl`.

The subclass of subordination: 1) non-strict inclusion – `lcontainl`; 2) strict inclusion – `lconsist ofl`; 3) `lofl`; 4) `lis partl` together with the inverse operator 5) `lis setl`; 6) `lis level`.

The subclass of other logical operators: `lin terms ofl` – this operator provides the association between the main expression and the concept, which coordinates the expression.

The positional class: it is for the depiction of the links «object–its location».

a) in the space of Cartesian, cylindrical, spherical coordinates: 1) `lpossessl`; 2) `lsituated atl`.

b) in the circuit diagrams: if object(s) link(s) with another object(s) 3) directly – `llink{ [] }`; 4) via other(s) object(s) (which is/are omitted in the expression) – `llinkundirect{ [] }`; 5) assignment the role of meaningful object for the link – `lconnectl ... lwithl`.

The class of derivation: 1) «certain object(s) derive(s) from other(s) object(s)» – `lderivel`; 2) «object acts as the transducer of certain object(s) into other(s) object(s)» – `ltransducerl ... lintol`.

A number of the conceded drawbacks in the current version of the collection of the operators for MB implies, that the subsequent revising of this collection would be advisable as the part of the MB's refinement.