

ОЦИФРОВКА МЕТАФИЗИКИ КАК ФОРМАЛЬНОЙ АКСИОЛОГИИ И ФИЛОСОФСТВОВАНИЕ ИИ-РОБОТА О ВНЕШНЕМ МИРЕ ПУТЕМ ВЫЧИСЛЕНИЯ СООТВЕТСТВУЮЩИХ ЦЕННОСТНЫХ ФУНКЦИЙ

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Аннотация. Исследуются возможность философского программирования мировоззрений ИИ-роботов вообще и возможность преднамеренного конструирования систем философии ИИ-роботов в особенности, как основание для адекватного ответа на человеческие опасения возможности существенной дисгармонии между Человечеством и Искусственным Интеллектом (чужим для культуры людей). Метод – дискретное математическое моделирование. Научная новизна – открытие некоего варианта оцифровки философской онтологии для представления человеческого знания принципов философского материализма и идеализма в искусственных интеллектуальных системах. Впервые в мировой литературе по исследуемой теме представлена некая дискретная математическая модель двух существенно различных вариантов отношения ИИ-роботов к их внешнему миру. Таким образом, по своим собственным философским мировоззрениям ИИ-роботы могут быть настроенными либо материалистически, либо идеалистически. Это вполне гармонирует с человеческой историей философии.

Ключевые слова: философствование о внешнем мире вычислением ценностных функций, ИИ-робот, моделирование онтологии двузначной алгебраической системой формальной аксиологии.

DIGITALIZING METAPHYSICS AS FORMAL AXIOLOGY AND AI-ROBOT PHILOSOPHIZING OF THE EXTERNAL WORLD BY COMPUTING RELEVANT EVALUATION-FUNCTIONS

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Abstract. Subject-matter – a possibility of proper philosophical programming AI-robot worldviews in general, and a possibility of intentional constructing AI-robot-philosophy-systems especially, as a basis

off/for adequate response to the human concerns about a possibility of significant disharmony between Mankind and Artificial Intelligence (alien to human culture). Method – discrete mathematical modeling. Scientific novelty – exposing an option of digitalizing philosophical ontology for adequate representing human knowledge of philosophical materialism and idealism principles in artificial intellectual systems. For the first time in world literature on the theme, a discrete-mathematical-model of two significantly different options of AI-robot's attitudes to their external world, is submitted. Thus, with respect to their proper philosophical worldviews, AI-robots could be either materialist-minded or idealist-minded ones. This is in perfect harmony with the history of human's philosophy.

Keywords: philosophizing-of-external-world-by-computing-evaluation-functions; AI-robot; modeling-ontology-by-two-valued-algebraic-system-of-formal-axiology.

In the present paper, a qualitatively new method is submitted for scrutinizing and solving philosophical ontology problems by digitalizing them, namely, by constructing and investigating their discrete mathematical models. To illustrate this abstract theoretical statement by a concrete example, below a set of difficult philosophical ontology problems is precisely formulated, scrutinized, and solved effectively by computing relevant compositions of evaluation-functions within a two-valued algebraic system of metaphysics interpreted as formal-axiology [1; 2].

The two-valued algebraic system of metaphysics as formal axiology is based upon the set Δ of such and only such either existing or not existing elements (for example, things, processes, events, actions, agents, etc.) which are either good or bad ones from the viewpoint of a valuator V . Algebraic operations defined on the set Δ are evaluation-functions. Evaluation-variables of these functions take their values from the set $\{g, b\}$. Here the symbols "g" and "b" stand for the abstract axiological values "good" and "bad", respectively. The functions take their values from the same set. The symbols: "x" and "y" stand for abstract-value-forms of elements of Δ . Elementary value-forms deprived of their concrete contents are independent evaluation-variables. Compound value-forms of elements of Δ deprived of their concrete contents are evaluation-functions determined by these variables. Let symbol V stand for the *evaluator*, i.e. that person (individual or collective one – it does not matter), in relation to which all evaluations are performed. In the evaluation-relativity theory, V is a variable: changing values of the variable V can result in changing evaluations of concrete elements of Δ . However, if a value of V is fixed, then evaluations of concrete elements of Δ are definite. Any evaluation necessitates a precise definition of evaluator.

Speaking of evaluation-functions in this paper I mean the following mappings (in the proper

mathematical meaning of the word “mapping”): $\{g, b\} \rightarrow \{g, b\}$, if one speaks of the evaluation-functions determined by *one* evaluation-variable; $\{g, b\} \times \{g, b\} \rightarrow \{g, b\}$, where “ \times ” stands for the Cartesian multiplication of sets, if one speaks of the evaluation-functions determined by *two* evaluation-variables; $\{g, b\}^N \rightarrow \{g, b\}$, if one speaks of the evaluation-functions determined by N evaluation-variables, where N is a finite positive integer. Now let us introduce by the glossaries and define by the tables the evaluation-functions directly relevant to the theme of this paper. Firstly, let us consider the functions determined by *one* argument.

The *glossary* for the below evaluation-table 1: Let the symbol Bx stand for the evaluation-function “being, presence of (what, whom) x ”. Nx stands for the evaluation-function “non-being of x ”. Gx – “genesis of x ”. Mx – “matter, material, materialness of x ”. Wx – “world of x ”. Px – “possibility of x ”. Ix – “impossibility of x ”. Lx – “necessity of x ”. Zx – “contradictoriness of x ”. Sx – “ x ’s self-contradiction”. Yx – “internal, inner (what, who) x ”. Ex – “external (what, who) x ”. Rx – “restricted, limited (what, who) x ”. The above-introduced functions are defined by the table 1.

Table 1 – The Unary Evaluation-Functions

x	Bx	Nx	Gx	Mx	Wx	Px	Ix	Lx	Zx	Sx	Yx	Ex	Rx
g	g	b	g	b	g	g	b	g	b	b	g	b	b
b	b	g	b	g	b	b	g	b	g	b	b	g	g

The *glossary* for the below evaluation-table 2: Let the symbol T^2xy stand for the evaluation-function “transformation, development of (what, whom) x into y ”. (Here the upper number-index 2 informs that the indexed capital letter stands for a function determined by two arguments.) The symbol C^2xy stands for the evaluation-function “ y ’s being, presence in (what, whom) x ”. S^2xy – the evaluation-function “ y ’s contradiction to (with) x ”. M^2xy – “movement of x by y ”. D^2xy – “determination (causation) of x by y ”. K^2xy – “joint being of x and y ”. R^2xy – “ x ’s being linked, connected (related) with x ”. H^2xy – “interconnection of x and y ”. V^2xy – “inter-development (inter-transformation) of x and y ”. These functions are defined below by the table 2.

Table 2 – The Binary Evaluation-Functions

x	y	T^2xy	C^2xy	S^2xy	M^2xy	D^2xy	K^2xy	R^2xy	H^2xy	V^2xy
g	g	b	g	b	b	b	g	b	b	b
g	b	b	b	b	b	b	b	b	b	b
b	g	g	g	g	g	g	b	g	b	b
b	b	b	g	b	b	b	b	b	b	b

Definition DEF-1 (of the notion “*formal-axiological-equivalence*”): in two-valued algebraic system of metaphysics as formal axiology, any evaluation-functions α and β are *formally-axiologically equivalent* (this is represented by the symbol “ $\alpha = + = \beta$ ”), if and only if they acquire identical

axiological values (from the set $\{g$ (*good*), b (*bad*)}) under any possible combination of axiological values of their evaluation-variables.

Definition DEF-2 (of the notion “*law of metaphysics*” or, which is the same, “*formal-axiological law*”): in two-valued algebraic system of metaphysics as formal axiology, an evaluation-function is called *formally-axiologically good* (or *absolutely good*) one (or a *law of metaphysics*), if and only if it acquires the axiological value g (*good*) under any possible combination of axiological values of its variables. In other words, α is a *law of metaphysics*, if and only if $\alpha = + = g$.

Definition DEF-3: (of the notion “*formal-axiological contradiction*”): in two-valued algebraic system of metaphysics as formal axiology, an evaluation-function is called “*formally-axiologically bad*” one or, which is the same, a “*formal-axiological contradiction*”, if and only if it acquires the axiological value b (*bad*) under any possible combination of axiological values of its variables. In other words, α is a formal-axiological contradiction, if and only if $\alpha = + = b$.

Now let us consider the following system of equations (formal-axiological equivalences) obtained by computing compositions of relevant evaluation-functions within the algebraic system.

1 $Bx = + = T^2Nx Bx$: being of x is transformation of nonbeing of x into being of x .

2 $T^2Nx Bx = + = Gx$: development of nonbeing of x into being of x is genesis of x .

3 $Bx = + = Gx$: being of x is genesis of x .

4 $Bx = + = C^2MWx T^2Nx Bx$: being of x is being of transformation of nonbeing of x into being of x in the material world of x .

5 $Bx = + = PC^2MWx T^2Nx Bx$: being of x is possibility of being of transformation of nonbeing of x into being of x in the material world of x .

6 $IC^2MWx T^2Nx Bx = + = Nx$: impossibility of being of transformation of nonbeing of x into being of x in the material world of x is equivalent to nonbeing of x .

7 $Mx = + = Nx$: matter, materialness of x is equivalent to nonbeing of x (Plato, Aristotle, Plotinus, St. Augustine).

8 $IT^2Nx Bx = + = MWx$: impossibility of transformation of nonbeing of x into being of x is equivalent to materialness of the world of x (The Ionians).

9 $Bx = + = NC^2x Sy$: being of x is nonbeing of self-contradiction in x . (Parmenides, Zeno, Melissus, Aristotle, etc.)

10 $Bx = + = LC^2EWx Sy$: being of x is necessity of being of self-contradictions in external world of x . (Heraclitus).

11 $EWx = + = MWx$: external world of x is material world of x .

12 $Bx = + = LC^2MWx Sy$: being of x is necessary being of self-contradictions in material world of x (The dialectical materialism).

13 $Bx = + = C^2MWx Sy$: being of x is being of self-contradictions in matter of x .

14 $Zx=+=YZx=+=C^2xSy$: contradictoriness (inner contradictoriness) of x means being of a self-contradiction in x .

15 $Bx=+=YZMx$: being of x is inner contradictoriness of matter of x .

16 $M^2xx=+=S^2xx=+=Sx$: self-movement of x is a self-contradiction of x .

17 $Bx=+=C^2MxM^2yy$: being of x is being of y 's self-movement in matter of x .

18 $Bx=+=LC^2MxD^2yy$: being of x is necessity of being of y 's causa sui (i.e. self-causation by y) in matter of x .

19 $H^2xy=+=K^2R^2xyR^2yx$: interconnection of x and y is joint being of (x 's being linked with y) and (y 's being linked with x). This equation could be used as a definition.

20 $H^2xy=+=b$: interconnection of x and y is a formal-axiological contradiction.

21 $Bx=+=LC^2MWxH^2xy$: being of x is necessary being of interconnection of every z and every y in the material world of every x .

22 $V^2xy=+=K^2T^2xyT^2yx$: inter-development (or inter-transformation) of x and y is joint being of (x 's being transformed into y) and (y 's being transformed into x).

23 $V^2xy=+=b$: inter-transformation (or inter-development) of any x and any y is a formal-axiological contradiction.

24 $Bx=+=LC^2MWxV^2zy$: being of x is necessary being of inter-development (inter-transformation) of every z and every y in the material world of every x .

25 $IV^2xy=+=g$: impossibility of inter-development (inter-transformation) of every z and every y is a law of metaphysics (formal-axiological one).

26 $NV^2xy=+=g$: nonbeing of inter-development (inter-transformation) of every z and every y is a law of metaphysics (formal-axiological one).

27 $BRV^2xy=+=g$: being of restricted (limited) inter-transformation (inter-development) of x and y is a law of philosophy (formal-axiological one).

28 $BRH^2xy=+=g$: being of restricted (limited) interconnection of x and y is a law of philosophy (formal-axiological one).

29 $NH^2xy=+=g$: nonbeing of universal interconnection is a law of metaphysics.

30 $Nb=+=g$: nonbeing of contradiction is a law of metaphysics.

This system of formal-axiological equations of two-valued algebra of philosophy is logically consistent in spite of the very popular negative attitude of the positivist-minded men to metaphysics as such. The formal-axiological equation system models the history of philosophy of humans which looks like a logically inconsistent, "dark" (unclear), "absolutely incomprehensible", boring, and ugly miscellany. In spite of the pessimists, I believe that the already existing material of human philosophy history is quite enough and can be successfully utilized for intentional constructing AI-robots possessing sufficiently adequate worldviews of their external world. Let us live and see; let us try to digitalize philosophy of

human sages and to convey it to "clever machines" being inspired by G. W. Leibniz motto "Calcalemus!".

References

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