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EMPIRICAL COGNITION OF FIRST MATTER AS A SERVICE TO GOD
(Digitalizing Synthetic Paradigm of Philosophizing:
Algebra of Formal Axiology as an Effective Means for Uniting Ontology, Epistemology, Ethics, Natural Law, and Natural Theology)

ЭМПИРИЧЕСКОЕ ПОЗНАНИЕ ПЕРВОЙ МАТЕРИИ КАК СЛУЖЕНИЕ БОГУ
(Оцифровка синтетической парадигмы философствования:
алгебра формальной аксиологии как эффективное средство объединения онтологии, эпистемологии, этики, естественного права, и естественной теологии)

The paper is aimed at using artificial language of two-valued algebra of formal axiology (of ethics and law) for mathematical modeling and solving evaluative aspect of the problem of harmony of *experience* science (*empirical* cognition of *material* world) and service to God. The problem is solved at the level of model by deductive substantiation (in the mentioned algebra) of such a formal-axiological equation, a result of translating which from artificial language of "intellectual machine" into natural human language is the following sentence: "Empirical cognition of primeval matter is a service to God". Deductive proving this equation is implemented at the model level by means of accurate "computing" compositions of relevant moral-legal-value-functions according to precise definitions of notion of two-valued algebra of formal-axiology.

Key notions: formal-axiological semantics of natural language; two-valued algebra of formal-axiology; digitalizing natural theology; empirical cognition of first matter; service to God

Статья посвящена использованию искусственного языка двузначной алгебры формальной аксиологии (этики и естественного права) для математического моделирования и разрешения ценностного аспекта проблемы гармонии *опытной* науки (*эмпирического* познания *материального* мира) и служения Богу. Проблема разрешается на уровне модели дедуктивным обоснованием (в упомянутой алгебре) формально-аксиологического уравнения, результатом перевода которого с искусственно языка «интеллектуальной машины» на естественный человеческий язык является предложение: «Эмпирическое познание первозданной материи есть служение Богу». Дедуктивное обоснование этого уравнения на уровне модели осуществляется путем аккуратного «вычисления» композиций соответствующих морально-правовых ценностных функций согласно точным дефинициям понятий двузначной алгебры формальной аксиологии.

Ключевые понятия: формально-аксиологическая семантика естественного языка; двузначная алгебра формальной аксиологии; оцифровка естественной теологии; эмпирическое познание первой материи; служение Богу

If we had it [a *characteristica universalis*], we should be able to reason in metaphysics and morals in much the same way as in geometry and analysis.

G. W. Leibniz

If controversies were to arise, there would be no more need of disputation between two philosophers than between two accountants (*Computistas*). For it would suffice to take their pencils in their hands, to sit down to their slates (*abacos*), and to say to each other…: Let us calculate (*Calculemus*).

G. W. Leibniz

The vagueness and ambiguity of the philosophical category "matter" is a very old and hard problem. It has been discussed, for instance, by Plato [30], Aristotle [1], Plotinus [31], and Augustine [2]. Due to the vagueness and ambiguity of meaning of the word "matter" in natural language, in the past, discussions of relationship between science and religion had been very sharp: some religious authorities and some outstanding scientists (positivist-minded ones) had insisted on incompatibility of *science* and religion, as *science* had been nothing but *empirical* cognition of *material* world exclusively. Thus, relationship between scientific activity and service to God had been an ill-formulated grave problem. Notorious mistakes in attempts to solve it had been serious handicaps for progress in sciences targeted at discovery of secrets of primeval matter.

During many centuries in the past, the nontrivial philosophical theology problem had been controversial due to absence of quite an effective method for final resolving it. However, new times give new possibilities. Today, digitalizing natural theology can give a possibility for resolving the problem to the end by means of using quite a new method hitherto never applied to this subject-matter. Here, I imply the almost unknown conceptual apparatus of two-valued algebra of formal-axiology, which is well-defined, for example, in [18; 19; 21; 22; 24–29]. According to the modern view of mathematics as such, mathematics proper is independent from any concrete nature of elements of sets relations among which it studies [3–17; 32–34]. According to this structuralist philosophy of pure mathematics, proper universal algebra can be applied to anything [3–17; 32–34]. Consequently, in principle, a proper algebraic aspect can be found in (and extracted from) any specific concrete system, for instance, in (from) philosophical ontology, epistemology, logic, ethics, natural law, natural theology, etc. Hence, A. N. Whitehead's challenging article "Mathematics and the Good" [34] is not a hooligan act but quite a *normal* thing from the modern conception of mathematics proper.

In contrast to R. Carnap [8–11] and other positivist-minded scientists, who dreamed of effective using logical analysis of natural language for exterminating metaphysics, axiology and theology as meaningless, in this paper, I use logical analysis of natural language for defending metaphysics, axiology and theology as meaningful. Unfortunately, the positivists have not recognized that natural language has not only descriptive-indicative semantics but also evaluative-normative one. Formal-logical semantics of natural language is to be complemented by a formal-axiological one. Exactly the formal-axiological semantics of natural language is to be used systematically to finish G. W. Leibniz' work targeted at explication, precise formulation, and rational justification of the natural legal law doctrine [13–17]. I think that according to G. W. Leibniz' hypothetical project of a *characteristica universalis*, we should be able to reason not only in metaphysics, morals, and natural legal law, but also in natural theology (defended, for example, by S. Clarke [12]) "in much the same way as in geometry and analysis".

As the paper is severely limited in page number, here I have to abstain from providing the exhaustive (necessary and sufficient) set of precise definitions making up the two-valued algebraic system of formal axiology which is to be exploited. Nevertheless, to make readers able to check (autonomously) the elementary computations and non-trivial statements, in this paper I have provided a system of references to the publications, in which the necessary and sufficient set of precise definitions of basic notions of two-valued algebra of formal axiology is given [18; 19; 21; 22;

24–29]. Therefore, presuming that the readers have the exact definitions and relevant exemplifications at their disposal, now I move directly to precise tabular definitions of such moral-legal-value-functions which are formal-axiological meanings of the natural language words and word combinations: "Empirical Cognition of"; "Prime Matter of"; "Service to"; "God of", respectively.

Glossary for the below-presented moral-legal-value-table. The sign Bx stands for the moral-legal-value-function "being, existence of (what, whom) x". The sign Nx stands for the moral-legal-value-function "nonbeing, non-existence of (what, whom) x". The symbol Cx denotes the moral-legal-value-function "change, movement of (what, whom) x". The symbol Mx denotes the moral-legal-value-function "material (what, who) x", or "matter, materialness of (what, whom) x". Fx – the moral-legal-value-function "*first* (prime) matter, or *materia prima*, or primeval matter of (what, whom) x". Ex – "*empirical* cognition of (what, whom) x". Wx – "world of (what, whom) x". Sx – "service to (what, whom) x". Ix – "ideal (idol), god of (what, whom) x in polytheistic barbaric local religions". Gx – *constant* moral-legal-value-function "God of (what, whom) x in monotheistic universal (world) religions". Ax – "absolute being of (what, whom) x". Zx – "absolute non-being of (what, whom) x". Px – "possibility of (what, whom) x". Hx – necessity of (what, whom) x". Lx – "x's law, or law by (what, whom) x". Dx – "defense, protection, conservation of (what, whom) x". These moral-legal-value-functions (determined by *one* moral-legal-value-argument x) are defined precisely by the following table.

x	Bx	Nx	Cx	Mx	Fx	Ex	Wx	Sx	Ix	Gx	Ax	Zx	Px	Hx	Lx	Dx
g	g	b	b	b	b	b	g	g	g	g	g	b	g	g	g	g
b	b	g	g	g	b	g	b	b	b	g	g	b	b	b	b	b

Table. One-placed moral-legal-value-functions

To finish constructing a mathematical model of the philosophical theology problem in the two-valued algebraic system of formal axiology, now it is indispensable to give the following precise definition of the notion "*formal-axiological equivalence*". In the algebraic system of formal axiology, any moral-legal-value-functions Ξ=+=Θ are *formally-axiologically equivalent* (this is represented by the expression "Ξ=+=Θ"), if and only if they acquire identical values (from the set {*g (good)*, *b (bad)*}) under any possible combination of the values of their variables.

In the vague and ambiguous natural language, very often the relation "Ξ=+=Θ" is represented by the words-homonyms "is", "means", "implies", "entails", "equivalence": they may stand for the *formal-axiological equivalence* relation "=+=". As in the natural language the words "is", "means", "implies", "equivalence", etc. also may stand for the logic operations "equivalence" and "implication", there is a real possibility of confusions produced by absolute identifying and, hence, substituting for each other the substantially different notions "=+=" and logic operation "equivalence" (or "=+=" and logic operation "implication"). Such mixing and substituting are

strictly forbidden in algebra of formal axiology: ignoring this ban can result in paradoxes.

By means of the above-defined functions and notions, a sufficiently intellectual person (even artificial one) can generate the following list of equations of algebra of formal axiology. The readers are invited to test all the below-listed equations themselves for becoming convinced that they are true. To the right after each equation immediately after the colon, a translation from the artificial language into the natural one is given.

1) $Bx=+=EMWx$: being of x is empirical cognition of material world of x.

2) $PBx=+=PEMWx$: possibility of being of x is possibility of empirical cognition of material world of x.

3) $EMWx=+=Dx$: empirical cognition of material world of x is defense, protection, conservation of x.

4) $EFx=+=SGx$: empirical cognition of first matter is a service (servantship) to God.

5) $HEFx=+=LGx$: necessity of empirical cognition of prime matter is a law of God.

6) $PEFx=+=LGx$: possibility of empirical cognition of primeval matter is a law of God.

The sentence "Empirical Cognition of First Matter is Service to God" (In Russian: «Empiricheskoe poznanie pervoj materii est› sluzhenie Bogu») is an accurate algorithmic translation from artificial language of intellectual machine (AI-robot) into the natural language of humans. The translation is performed in perfect accordance with the linguistic principle of *compositionality of formal-axiological meanings* of natural-language words and word-combinations [20; 23]. Thus, an artificial intelligence system can grant quite a new nontrivial knowledge to mankind even in realm of the humanities proper.

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