Априорность знания как условие для логического вывода «предписано» из «есть»

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Аннотация: В формальной аксиоматической теории Сигма построено формальное доказательство такой схемы теорем, которая означает в стандартной интерпретации формальной теории Сигма, что при допущении априорности знания, нормативные суждения логически выводимы из соответствующих суждений о том, что есть. Эта теорема точно определяет (ограничивает) сферу уместной применимости Гильотины Юма и оправдывает кажущееся парадоксальным утверждение И. Канта о предписывании физиком чисто априорных законов природе.

Ключевые слова: *Гильотина-Юма, Логически-непреодолимая-пропасть-между-фактами-и-нормами, Формально-логический-вывод-нормативного-утверждения-из-утверждения-о-бытии*

A-Priori-ness of Knowledge as a Condition for Logical Deriving “Is-Prescribed” from “Is”

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Abstract: In a formal axiomatic theory Sigma, a formal proof of such a theorem-scheme is constructed which theorem-scheme affirms (in a standard interpretation of Sigma) that, under the assumption of a-priori-ness of knowledge, normative judgements are logically derivable from corresponding judgements of being. This surprising theorem-scheme precisely defines (limits) the sphere of relevant applicability of Hume-Guillotine and vindicates (justifies) seemingly paradoxical I. Kant’s statement of physicist’s prescribing pure-a-priori laws to nature.

Keywords: *Hume-Guillotine, Logically-Unbridgeable-Gap-between-Facts-and-Norms, Formal-logical-deriving-statement-of-norm-from-statement-of-being*

The logically formalized axiomatic multi-modal epistemology system Sigma is defined precisely in [2]. Due to the word-limit, here I shall abstain from repeating definitions of the object-language-alphabet, terms, and formulae of Sigma. As to the definition of “proper axioms of Sigma”, in this paper I shall repeat formulating only such proper-epistemology-axiom-schemes of Sigma which are directly involved into the discourse. Therefore, not all axiom-schemes of Sigma are mentioned in the present paper; the proper-axiology-axiom-schemes of Sigma are not considered here as they are not utilized in the discourse.

Also due to the word-limit, in the given paper I shall abstain from interpreting all the modality-symbols belonging to Σ's object-language-alphabet. Although Σ is a multi-modal epistemology-and-axiology theory dealing with a set of modality-symbols

$$\{\Box, K, A, E, S, T, F, P, Z, G, W, O, B, U, Y\},$$

only some of them are directly exploited and introduced below in the paper, namely, □ stands for the alethic modality "necessary". Symbols K, A, E, S, respectively, stand for epistemology modalities "agent Knows that…", "agent A-priori knows that…", "agent Empirically knows that…", "under some conditions some agent has a Sensation (feeling) that…". Symbols O, G, W, respectively, stand for normative (deontic) and evaluative modalities "it is Obligatory (prescribed) that…", "it is Good that…", "it is Wicked that…". Meanings of the mentioned symbols are defined (indirectly) by the schemes of proper epistemology axioms of Sigma which axioms are added to the axioms of classical propositional logic. Schemes of axioms and inference-rules of the classical propositional logic are applicable to all formulae of Sigma. The subset of Sigma's proper-axiom-schemes, which is taken into an account in this paper, is the following.

Axiom-scheme AX1: $A\alpha \supset (\Box\beta \supset \beta)$.

Axiom-scheme AX2: $A\alpha \supset (\Box(\alpha \supset \beta) \supset (\Box\alpha \supset \Box\beta))$.

Axiom-scheme AX3: $A\alpha \leftrightarrow (K\alpha \;\&\; (\Box\alpha \;\&\; \Box\neg S\alpha \;\&\; \Box(\beta \leftrightarrow \Omega\beta)))$.

Axiom-scheme AX4: $E\alpha \leftrightarrow (K\alpha \;\&\; (\neg\Box\alpha \vee \neg\Box\neg S\alpha \vee \neg\Box(\beta \leftrightarrow \Omega\beta)))$.

Axiom-scheme AX5: $K\alpha \supset \neg\Box\neg\alpha$.

Axiom-scheme AX6: $(\Box\beta \;\&\; \Box\Box\beta) \supset \beta$.

In AX3 and A4, the symbol Ω (belonging to the meta-language) stands for any element of the following set of modality-symbols

$$\{\Box, K, T, F, P, Z, G, O, B, U, Y\}$$

called "perfection-modalities" or simply "perfections". Not all modalities which Sigma deals with are perfections, for instance, S and W are not perfections.

In Sigma, the *derivative* rule of □ elimination is formulated as follows: $A\alpha, \Box\beta \vdash \beta$. This rule is not included into the definition of Σ, but it is easily *derivable* in Σ by means of the axiom scheme AX1 and modus ponens. The rule $\Box\beta \vdash \beta$ is not derivable in Σ, and Gödel's necessitation rule is not derivable in Σ. Nevertheless, a limited or conditioned necessitation rule is derivable in Σ, namely, $A\alpha, \beta \vdash \Box\beta$.

In the logically formalized axiomatic theory Sigma, the formula-scheme $(A\alpha \supset (\Box\beta \leftrightarrow O\beta))$ is a scheme of theorems. Here: symbols α and β stand for any formulae of Sigma; $A\alpha$ stands for "person (physicist) a-priori knows that α"; $\Box\beta$ stands for "it is necessary that β", and $O\beta$ stands for "it is *commanded*, prescribed, *obligatory* that β". The modality $\Box\beta$ represents a law of nature. The modality $O\beta$ represents "physicist's command, *prescription*, making *obligatory* that β". The theorem-scheme $(A\alpha \supset (\Box\beta \leftrightarrow O\beta))$ formally proved (within Sigma) below in this paper is considered as a discrete mathematical model of/for the enigmatic statement by Kant [1, pp. 71–72].

First of all, let us prove a more general theorem-scheme $(A\alpha \supset (\Theta\beta \leftrightarrow \Omega\beta))$, where the symbols Θ and Ω (belonging to the meta-language) stand for any elements of the set of perfection-modalities $\{\Box, K, T, F, P, Z, G, O, B, U, Y\}$. A formal proof of the theorem-scheme $(A\alpha \supset (\Theta\beta \leftrightarrow \Omega\beta))$ in Sigma is the following succession 1—11 of formula-schemes. A formal proof of the theorem-scheme $(A\alpha \supset (\Box\beta \leftrightarrow O\beta))$ in Sigma is the following succession 1—13 of formula-schemes.

1) $A\alpha \leftrightarrow (K\alpha \,\&\, (\Box\alpha \,\&\, \Box\neg S\alpha \,\&\, \Box(\beta \leftrightarrow \Omega\beta)))$: axiom scheme AX3.
2) $A\alpha \supset (K\alpha \,\&\, (\Box\alpha \,\&\, \Box\neg S\alpha \,\&\, \Box(\beta \leftrightarrow \Omega\beta)))$: from 1 by the rule of elimination of $\leftrightarrow$.
3) $A\alpha$: assumption.
4) $(K\alpha \,\&\, (\Box\alpha \,\&\, \Box\neg S\alpha \,\&\, \Box(\beta \leftrightarrow \Omega\beta)))$: from 2 and 3 by *modus ponens*.
5) $\Box(\beta \leftrightarrow \Omega\beta)$: from 4 by the rule of elimination of $\&$.
6) $(\beta \leftrightarrow \Omega\beta)$: from 5 and 3 by the *derivative* rule of elimination of $\Box$.
7) $(\beta \leftrightarrow \Theta\beta)$: from 6 by substituting Θ for Ω.
8) $(\Theta\beta \leftrightarrow \beta)$: from 7 by commutativity of $\leftrightarrow$.
9) $(\Theta\beta \leftrightarrow \Omega\beta)$: from 8 and 6 by transitivity of $\leftrightarrow$.
10) $A\alpha \vdash (\Theta\beta \leftrightarrow \Omega\beta)$: by 1—9.
11) $\vdash A\alpha \supset (\Theta\beta \leftrightarrow \Omega\beta)$: from 10 by the rule of introduction of $\supset$.
12) $\vdash A\alpha \supset (G\beta \leftrightarrow \Box\beta)$: from 11 by substituting G for Θ; $\Box$ for Ω.
13) $\vdash A\alpha \supset (\Box\beta \leftrightarrow O\beta)$: from 11 by substituting $\Box$ for Θ; O for Ω.
14) $\vdash A\alpha \supset (G\beta \leftrightarrow O\beta)$: from 11 by substituting G for Θ; O for Ω.

The element number 13 in this succession justifies the queer statement by Kant.

Литература

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