ABSTRACTS

A2.18 Philosophical Logic

Two Faces of Logical Truths — Between Ordinary Language and Formal Language

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The relation between ordinary language (OL) and formal language (FL) affects greatly how to understand the revisability of the logic truths. Given Quinean refusal to the analytic statement, the revisability of the logic truths is nevertheless prudently treated by Quine, as he indicates, “if revisions are seldom proposed that cut so deep as to touch logic, there is a clear enough reason for that: the maxim of minimum mutilation.” To what extent the maxim works and why we need it?

However, I will be afoot with identifying so called “two faces” of the logical truths by virtue of a characterization of the relation between OL and FL. Concerning the first face, logical truths appear constantly only if formal language, in which the logical truths is unfolded, and ordinary language, in which the logical truths is exemplified, are taken to be as a whole. That is, for example, Disjunctive Syllogism (DS) is ever acting only if the evaluation of “A (¬AvB)→B” is deemed only the same as that of its every intuitively justified replacements in ordinary language. Briefly, Talking about “A (¬AvB)→B” is solely equivalent to the talking of the right replacements, and they are the same talkings. Concerning the second, logical truths appear revisionally only if formal language has ordinary language as its frame of reference inasmuch as we separate the m into two. For example, relevant logic attempts at formally characterize the ordinary meaning of “if...then...”, and this characterization can be considered as making reference to the conception of what the real inference is in ordinary language. And when they do this, in effect they create one sort of formal language making reference to ordinary language in the sense that the former intends to describe the latter.

Which arguments are logically incorrect?

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What does it mean to say that an argument is logically incorrect? We can distinguish two natural interpretations of such a claim: we can construe it as i) saying that the argument is not logically correct (valid); or as ii) saying that the argument is incorrect, and is such for logical reasons. And though the former interpretation (which does not exclude that an argument can be both correct and logically incorrect) is more commonly adopted, we
suggest that the latter one is preferable and more interesting. To articulate it precisely, though, is a more challenging task than it would prima facie seem. In this paper we try to fulfil this task. We start from reflections on the concepts of correctness and logical correctness. Subsequently we consider different approaches to defining the concept of logical incorrectness and propose an explication that is neither too narrow (as is for example Cheyne’s concept of super-invalid argument) nor too broad (as is the concept of counter-valid argument) and satisfies the main desiderata - every logically incorrect argument is incorrect and its incorrectness is a matter of its logical form alone. We also show that if we want to stick to the tradition which identifies correctness of an argument with truth-preservation and identifies, as is standard, any compound consisting of set of sentences (premises) and a sentence (conclusion) as an argument, then logically incorrect arguments cannot be distinguished solely by their forms.

'Complete Sets of Logical Functions' Revisited: an examination and reinterpretation of early Functional Completeness proofs of Propositional Logic.

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This paper examines various proofs for the functional completeness of sets of connectives/functions of Propositional Logic (PL) that were offered in the first half of the twentieth Century. Special attention will be paid to the article by William Wernick, "Complete sets of logical functions." Transactions of the American Mathematical Society 51, no. 1 (1942): 117-132. The present author will show why and how these proofs work (along with highlighting their significance) by employing his novel representation of the truth functions of PL using hexadecimal notation and 16x16 matrices.

The Epistemic Significance of Valid Inference – A Model-Theoretic Approach

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According to the paradox of inference (Cohen & Nagel 1998: 173) it is impossible for an inference to be both valid and its conclusion to possess epistemic novelty with respect to the premises. I argue in this paper that valid inference has an epistemic significance, i.e., it can be used by an agent to enlarge its knowledge, and this significance can be accounted in model-theoretic terms. I will support this thesis by offering grounds for each of its conjuncts.

I will argue first that this paradox is based on an equivocation. The main contention of the paradox is that in a valid inference the conclusion must be contained in the premises, and if it is contained then it cannot possess epistemic novelty with respect to the premises. The paradox arises because logical containment, i.e., logical implication, is identified with epistemological containment, i.e., the knowledge of the premises entails the knowledge of the conclusion. If these two meanings of the ‘containment’ are not distinguished then it will follow that a person who knows a set of premises will also know all its consequences, which is not the case, i.e., logical omniscience is impossible for a real epistemic subject.
Second, I will argue that a truth-conditional theory of meaning has the necessary resources to explain the epistemic significance of valid inferences. I will explain this epistemic significance by using Carnap's semantic theory of meaning and Tarski's notion of satisfaction. In this way I will resist to (Prawitz 2012) claim that a truth-conditional theory of meaning is not able to account the legitimacy of valid inferences, i.e., their epistemic significance. A main aim of the explanation is to make explicit the relation between ‘truth-conditions’ and ‘grounds’ as central concepts in a theory of meaning.