Buletin Teknol. Tanaman, Bil.12, Tambahan.2 (2015): 48-50

A Critique on the difference of Kosta Došen between the analysis and definition in Inferentialism approach to the logical constants

Morteza Mezginejad, Lotfollah Nabavi, Seyyed Mohammad Ali Hodjati

Abstract

Kosta Došen presented the meaningful Inferentialism from the logical constants based on the structural rules in the Logical constants as punctuations marks paper. Having mentioned the difference between analysis and definition, he argues that structural rules merely make an analysis of logical constants, not the definition. Since, the definition should meet the conditions of analysis as well as two Pascal's condition and Conservativeness. The Pascal's condition will not be met in logical constants. In this study, the conditions of analysis and definition are studies. In addition, it is shown that if the conditions related to the analysis and definition were accepted, not only the Inferentialism cannot provide a definition for logical constants, but also providing the analysis will be impossible.

Keywords: Inferentialism, proof Theory, Logical Constants, Analysis, Definition

Introduction

Inferentialism approach to the meaningful of logical constants is based on this important fact that the meaning of logical constants is determined through the rules, i.e., the rules provide the meaning of logical constants. Gentzen mentioned that the operational rules define the meaning of logical constants (Gentzen, 1969, p. 80). But Hacking believes that the operational rules don't have the necessary condition for defining the logical constants and it exclusively describes their applications (Hacking, 1979, p. 287). Kosta Došen analyzes the operational rules to the structural rules in a different way. He, contrary to Gentzen, believes that structural rules exclusively provide an analysis for logical constants (Došen, 1989).In *Logical constants as punctuation marks*, Došen tries to provide the analysis more accurate and he refers to the G.E. Moore. According to him, there are differences between definition and analysis, and analysis is on a lower level than definition and Inferentialism (he uses the concept of proof-theoretical instead of Inferentialism) provides an analysis of the logical constants.

Analysis Conditions

Analysis of a phrase is done from one language to another language; the language to which the phrase belongs is called as the subject language and the language in which the analysis is done is called as the "carrier language".
α is given from language Γ, a metalanguage such as M must be there for analyzing α in which α doesn't belong. In this language, an analytical equivalence of α can be formulated. Došen considered four conditions for analysis which are as follows (Došen, 1989, p. 369):
1) The analysis of α of language Γ in metalanguage M is to make sentence A which is made of M plus α, provided that in A, the phrase α is happened once, while this sentence is equivalent to B in M[1].
2) According to the proposed balance between Γ and M stated in condition 1, every derivable sentence in Γ (except α) should be true in analysis of M and every sentence which is not true analytically in M, will not be derivable in Γ.
3) α1 and α2 will have the same analysis, if and only if both have the same meaning.
4) Language M must be more basic than the language Γ (if we accept the term "basic" without any further explanation by the author).
The four proposed conditions are the conditions which are stated for the analysis by Došen, but if we put aside the analysis, and if we want to provide an explicit definition, two other conditions is needed.

The Conditions of Explicit Definition

Explicit definition need to two other conditions as well as the four proposed:
1- Pascal's condition
2- Conservativeness
Pascal's condition (Pascal, 1914): for definition of α we need this condition. A sentence with the same meaning to M must be there for each of the sentences of M+α. In the other word, there must be B with the same meaning to A in M[2] (Pascal, 1914, p. 244).
Conservativeness: the other conation for definition is Conservativeness. A sentence of Γ minus α cannot be found that is true analytically in Γ, but it will not be true analytically in Γ minus α. [3]

Matching the Conditions of Analysis and Definition on Ramsey's Definition from the Predicate is true

In order to scrutinize in proposed conditions of analysis and definition, the Ramsey's analysis of truth is evaluated. The theory of truth came first in 1927 by F. P. Ramsey. He said, "there is no separate discussion about the truth, and the only thing arises can be linguistic confusion." He considers the true and false predicate as superfluous, in a

[1] $A \in M+\alpha$, $A=(\alpha, \dots)$, $B \in M$, $\alpha \in \Gamma \Rightarrow A \approx_{\text{equivalent}} B$, or $(\forall ?)(\exists A)(\exists B)[A \in M + ??, B \in M, \alpha \in L \Rightarrow A \approx_{\text{equivalent}} B]$

[2] . In this condition, A and B must have "similar" meaning, not merely they are equivalent to each other like first condition.

[3] . Belnep defines the conservativeness accurately and he used it in defense of Inferentialism (Belnap, 1962).

way that they can be removed. In the other word, there is no difference between the sentence "it rains" and "it is true that it rains" (Ramsey, 1927)."φ" is true" has the same meaning as φ.

Here, Γ is a part of English, α is the "is true" phrase, and M is a part of English without α. The Ramsey's analysis meets 4 conditions of analysis and conservativeness, but it seems that it faces to a problem regarding the Pascal's condition:

Condition 1: By adding α (α= "is true") to the Metalanguage M, a sentence like S can be made which is "equivalent" to the sentence R in M.

S: Aristotle is a philosopher is true.

R: Aristotle is a philosopher.

Condition 2: according to the mentioned balance in condition 1, every sentence which is true in Γ can be achieved in M and every false sentence in Γ cannot be achieved in M.

Condition 3: α1 and α2 have the same analysis, when they have the same meaning:

α1: Aristotle is a philosopher is true.

α2: Aristotle is a philosopher is right.

Condition 4: this condition is valid, but it will not be discussed here.

Condition 5: the Pascal's condition is not met. The defining equality requires that for every sentences of M plus to α, a sentence must be found in M with the same meaning; in the other word, it must be B in M with the same meaning for A in M plus α.Bear in mind this sentence: "whatever Socrates said is true"[4]. It seems that a sentence cannot found in M which has the same meaning with it by removing truth predicate. The reason may be that in fact the truth predicate can express something that cannot be expressed without this predicate (Grover, 1975).

Condition 6: According to the Conservativeness's condition, by adding α, i.e. "is true" a sentence shouldn't be found in Γ minus α which will be true analytically after adding α, but it is false without adding α. In other words A sentence of Γ minus α cannot be found that is true analytically in Γ, but it will not be true analytically in Γ minus α.Considering this example, it is obvious that adding α means: "is true" has no effect on the true and false analysis of Γ propositions minus α.

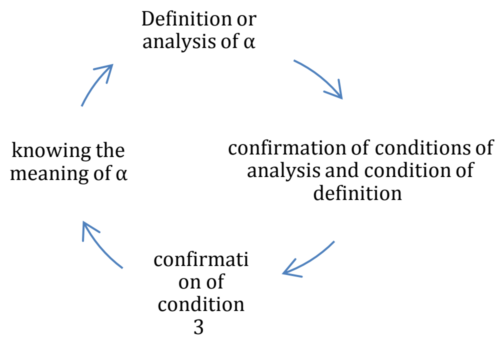
A critique on the difference between Došen's analysis and definition

The first thing to be considered is to evaluate the proposed example and study the condition 1 in Ramsey's definition of truth. As the problem arises in Pascal's condition includes the first conditions of analysis in Ramsey's definition. In the first condition of analysis:

By adding α (α= is true) to language M, a sentence like S can be made which is equivalent to sentence R in M. If we consider S in the following phrase:

S: "whatever Socrates said it true."

Basically, there is no R in M which is equivalent to S. therefore, not only the proposed example lacks the condition of definition, but also it lacks the condition of analysis.However, this hypothesis can be stated that all the sentences which are told by Socrates are determined in language M with Z set: $Z=\{a_1,a_2,\dots,a_n\}$. All Socrates has said is called set Z and the sentence "Socrates said all the sentences of set Z" is shown by R. Therefore, it can be said that R is in M which is equivalent to S. The only problems that remain are that firstly, the set Z cannot be specified actually. Secondly, two sentences of "whatever is said by Socrates is true" and "Socrates said all the sentences of Z" are not equivalent.Although this critique has the risk of conflict in the example, regarding this fact the Došen's example of the mentioned difference is exclusively in some frame of proposed examples, the critiques contain some samples of examples. The other problem is the cycle which is in condition 3. If the reading of condition 3 is in a way that two things have the same analysis whenever they have the same meaning, it is necessary to confirm the condition 3 for achieving the definition[5]. The confirmation of condition 3 depends on knowing the meaning of α. In the other hand, knowing the meaning depends on providing the definition of α or at least providing an analysis for it:



Evaluation of definition's condition in Inferentialism

According to the characteristics of definition of analysis, Došen studies the Inferentialism approach[6] in meaning of logical constants. He believes that logical constants can be stated based on the structural rules in calculus

4 .this phrase is A

5 . definition of α

6 . however, he mentions it as the proof-theoretical approach

sequents; therefore, this metalanguage M includes the calculus sequents which exclusively contains the structural rules. Logical constants are in the subject of language and they can be analyzed in calculus sequents. Basically, logical constant of implication (⊃) is studied here. Language Γ is a language of propositional logic and M will be a metalanguage of calculus sequents. Sentence A is a sentence of M along with the logical constant of implication (⊃) and B is a sentence of this language (M) which doesn't have this constant, but it is equivalent to it:

$$\frac{\Gamma \to F \quad G, \Gamma \to C}{F \supset G, \Gamma \to C} \supset L \qquad \frac{F, \Gamma \to G}{\Gamma \to F \supset G} R \supset$$

Actually, the formula which is above the line shows B and the formula which is under the line shows A in metalanguage M+(⊃) (NEGRI & PLATO, 2008, p. 28). According to the above given explanation, all the conditions exist and we don't discuss them here. Among the mentioned conditions for definition, Pascal's condition is studied. Došen is believed that the Pascal's condition doesn’t meet. Since, According to the Pascal's condition (for each sentence of metalanguage M plus to the ⊃, a sentence can be found from M which have the same meaning with ⊃), the implication cannot be stated exclusively with structural rules. Because in a sequent such as A⊃B ⊢ C, "⊃" cannot be removed and it is not possible to be stated with the structural rules in calculus sequents (Došen, 1989, p. 374). It can be said that introducing the condition"⊃" is the inferential equivalence of premises to the conclusion in calculus sequents. So, the formula $A \supset B$ in logic of propositions is equivalent to $A \vdash B$in calculus sequents. Therefore, "⊃" can be stated by structural rules in calculus sequents. But, "⊃" cannot be stated exclusively with structural rules in formula $A \supset B \ \vdash C$in calculus sequents and "⊃" cannot be removed from it. In critiquing this viewpoint, it can be said that if implication cannot be removed from the structure of calculus sequents in any way, it seems that there is same issue in condition 1; since the difference between these two condition is that in condition 1, the analysis of A and B must be "equivalent" and there must be in "same meaning" in Pascal's condition. Therefore, Došen must explain this condition in a crystal clear way that how the logical constant of implication can have the first condition of analysis in calculus sequents and there is an equivalence for formula $A \supset B \ \vdash C$ in calculus sequents which exclusively contains structural rules, but it cannot guarantee the Pascal's condition!

Conclusions

Došen mentioned some conditions for analysis and some conditions for definition and he tried to show the difference between definition and analysis by providing some examples. Among them, providing some conditions on Ramsey's definition of truth can be considered. According to the mentioned counterexample, it is shown that Ramsey's definition based on Došen's conditions not only lacks the condition of definition, but also it lacks the analysis's condition. Thus, he cannot show the difference between definition and analysis properly. Additionally, the necessity of third condition has the cycle problem, because the third condition is one of the conditions of analysis and definition. On the other hand, the confirmation of this condition depends on knowing the meaning of α and the meaning of α can be achieved through analysis and definition. Finally, Došen studied the Inferentialism approach to the meaning of logical constants based on the condition of analysis and definition. According to his viewpoint, since the logical constants lacks the Pascal's condition among the proposed conditions, therefore, the calculus sequents has provided an analysis of logical constants.In reviewing this viewpoint, it is said that if the implication cannot be removed from the structure of calculus sequents, this drawback is true about the first condition of analysis; so that according to his viewpoint, it can be concluded that not only the calculus sequents doesn’t provide a definition of logical constants in Inferentialism approach to the meaning, but also it will not provide the analysis.

Bibliography

1. Belnap, N. D. (1962, Jun). Tonk, Plonk and Plink. Analysis, 22(6), 130-134.
2. Došen, k. (1989, urnal of Formal Logic). Logical constants as punctuation marks. Notre Dame Journal of Formal Logic, 30, 362-381.
3. Gentzen, G. (1969). The Collected Papers of Gerhard Gentzen. (M. Szabo, Ed.) London: Holland, North Amsterdam.
4. Grover, D. L. (1975). A prosentential theory of truth. Philosophical Studies, 27, 73-125.
5. Hacking, I. (1979). What is logic? The journal of philosophy, 285-319.
6. NEGRI, S., & PLATO, J. V. (2008). STRUCTURAL PROOF THEORY. CAMBRIDGE UNIVERSITY PRESS.
7. Pascal, B. (1914). Fragments de Γesprit geometrique et extrait d'un fragment de Pintroduction. Oeuvres de Blaise Pascal, 229-294.

Morteza Mezginejad [Ph.D], Student, Tarbiat Modares University in Tehran, Iran.
mezginejad@modares.ac.ir
Lotfollah Nabavi , Associate professor ,Tarbiat Modares University in Tehran, Iran.
Corresponding Author, Email: nabavi_l@modares.ac.ir
Seyyed Mohammad Ali Hodjati, Associate Professor, Tarbiat Modares University in Tehran, Iran.
hojatima@modares.ac.ir
TEL:9809155619491