

The predicative analysis of the proposition at Frege

التحليل المحمولي للقضية عند فريجه

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Abstract:

In this paper a study an analytical study of: the predicative analysis of the proposition when the founder of the Logicism trend (Frege), at the same time, he stressed his contribution to the establishment of the logic of modern predicative, this is why a tried to show the nature of the Fregen analysis predicative proposition- identity proposition- personal proposition), and exceeded traditional methods of analysis using the term of the function and argument instead of subject and predicate, which led to the development of the logical calculation – so how was it done?.

Keywords: predicative - analysis - proposition – Frege.

ملخص:

أتناول في هذه الورقة البحثية دراسة تحليلية لطبيعة التحليل المحمولي للقضية الحملية عند مؤسس الاتجاه المنطقي. " فريجه"، وهو تأكيد في الوقت ذاته على مساهمته ودوره في تأسيس منطق المحمولات الحديث، لهذا حاولنا أن نبين طبيعة التحليل الفريجي: (القضية الحملية- قضايا الهوية- القضية الشخصية). وتجاوز لأساليب التحليل التقليدي، باستعمال لفظ: الدالة والحجة"، بدلا من الموضوع والمحمول، وهو ما أدى به إلى تطوير الحساب المنطقي فكيف تم ذلك؟

الكلمات المفتاحية: التحليل - المحمولي - القضية - فريجه

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Introduction:

In many contemporary areas, Frege's *Gottlob*⁽¹⁾ is the link between an old « traditional » logic and modern logic⁽²⁾, giving his role in providing the bases for new language in the field of « ideography » « which was considered as the integrated logical project as evident in this research : of function and argument - Begriffshrift - function and concept - concept on object. ... But it was a new method in the logical analysis, and the starting point for the logic that later developed in his correspondence, Russell and Wittgenstein according, in overriding methods and predicative analytic.

Accordingly, in the peculiarity of the predicative analysis of Frege limited witness of the traditional methods of analysis of the thematic proposition based on the language subject to the language of the function and argument which really makes him the founder of the modern predicative logic.- **What are the mechanism and bases of the predicative analysis proposition at Frege? what is the role played by the analysis of the prediction when it was invented in modern logic and contemporary?.**

1-Mistakes predicative proposition:

Frege's contribution is fundamentally rooted in his precise and accurate view of traditional analytical methods as a starting point for the large logical project, and his discovery of the limitations of traditional analysis. Hence, he sought to find new logic mechanism that lit his language of ideography, which he proposed as a very alternative that is guaranteed by the principle of accuracy and certainty.

Fears of the traditional predicative proposition If it is established in the field of logic that the predicative proposition is a news story that may be true or false, this definition makes it distinct from some sentences and the question of question, escalation. ...ect This it is clear that the judgment in the analysis of Frege based language of the function and argument revealed the marrow new of this limit with the sentence is directed to the subject and predicate, bypassing the forum of discrimination saying:

“A distinction of subject and predicted finds no place in my way of representing a judgment”⁽³⁾. If we say for example « arabi bin mahidi killed by the colonizer”; the subject is arabi ben mhidi, and predicative is « was killed

by the colonizer". According to the analysis of Frege we may say : French colonizer killed Arabi Ben mhidi , what is observed the status of the subject and the predication did not serve the meaning and similarly if we are facing the following two proposition⁽⁴⁾. « Hitler occupied France” the terms ‘Hitler ‘ in this proposition is the subject of the rule, while if we say : France occupied by Hitler the subject of governance is the term “France”, and by that distinction the real when it is done must be between content and stroke, on the basis of the difference between the subject and predicate⁽⁵⁾. If the proposition is a completed function, the introduction of the function and argument was the object of renewal.- what is the meaning of the function?.

In spite what Frege borrowed the notion of function from mathematics, but he supported the importance of passing the common concepts in Arithmetic's, as long as the determination of concept according to mathematic is not saturated to Frege⁽⁶⁾, so its important to overcome the limits of this definition, to consider the function is a polemic(analog) between the values and arguments of the predication's expressing « X » is a human being the expression won't be saturated and be completed in the proposition of putting in the gap an argument « Man »,« Horse » putting the arguments according to this proposition means determine the hazard value of the function, as long as putting the argument « Man » in the gap « X » gives a True value, and putting the argument « horse » in the gap gives a false argument.

From this we can confirm that Frege is considered the first one who gave the hazard's value, which reflects the conceptual function's range and express what by Carnap Rudolf, Frege used the symbol which expressed the later function « x » « man » as followed « A » (Ø) where « x » pointed to (x) or (A) to illimited number of arguments which means that « A » or (x) can be (Ahmed, Mohamed) which has the property Ø⁽⁷⁾ « Mean » and its true in this case as long as the argument assimilate « Man » Frege expressed it also from ideography language as followed :

┌──(x) in this case of the existence of relational propositions, so the symbolic drafting is as followed :

┌──f (x.y) as we say « Hydrogen is heavier than the oxygen», Ahmed is the grand parent of Mohamed « Abdelkader is the father of Mohamed » these expression which pointed to relational proposition, Frege confirmed in the « principal laws of Arithmetic's » which are predicates from 2nd class, we can

also lack about other predications quadruple, triple... so the later expressions about the predicate « is heavier »... father requires the existence of two arguments « oxygen, hydrogen » Abdelkader... Mohamed until the function completed or proposition, Frege confirmed it $f(x, y)$ different from $f(y, x)$ because changing arguments places don't express the relation⁽⁸⁾ « ... is heavier... » « parents hip » the symbolic expression in ideography languages as followed

_____ $f(x, y)$ which means that the later proposition is true according to the nature of arguments and comparing to reality. We can say according to what it is mentioned what there is no idea for the subject or the predication in Frege's Analysis but in the nature and the value of function « is heavier... » to defend the argument. In this point it is clear that Frege's attitude from the reference of subject to predicate. That's what he confirmed before, so the erection contraction process to the language of argument and function⁽⁹⁾ made Frege revised the traditional questions of logic according to redrafting the predicate proposition to drafting predication, so how is this done ?.

2-universal quantifier and existential quantifier:

The logic of predicate from Frege and summary from the Analytical method to predicate proposition, make the opinion of classical from the quartet devision of the proposition of predicate. This perception starts as Blanché confirmed through the idea of quantification which has an important role in the relation between the terms of the proposition thanks to Frege, the principal basically to the modern arithmetic predicate, in this situation what and principal of quantification to Frege from the analysis of predication proposition as follows:

2.1-universal quantifier :

the analysis of the positive universality to language of subject and predicate, make the « quantifier » is according to traditional logic, is a part of predicate, so if we have predication proposition « All man is mortel » so the expression of universal quantifier is as follows « All..... is mortel » from what Quine⁽¹⁰⁾ confirmed it in his book « methods of logic » that the universal quantifier can be symbolically expressed as follows:

$\forall x$ « x is man x is mortel » this expression confirmed again what the universality proposition can be considered as a condition al proposition, and the

expression what « x » is a man, « x » mortel is predicate, relating to Frege's symbolic that the truthfulness of the function symbolized to the universality positive proposition will be like what:

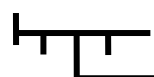
┌─── $\forall x (x \text{ a man} \rightarrow x \text{ is mortel})$. If x is a man so every man is mortal, when Russell refers to it after what the functional analysis is true for every rates and equal to the previous expressions. If we replaced the variable « x » with the following expression. If Socrates is a man so x is mortal and can replace the variable « x » so « x » is mortal and can replace the variable « x » the variable « y » which was Plato for example, The expression equals the following « $\forall y$ » « y » is a man and « y » is mortal, and is noticeable from the analysis of the universality positive⁽¹¹⁾, that the link in this case is the conditional link and we can express it when the ideography language as follows:

And we can read it from the bottom; the line in form of it proves that it is proposition, the same applies on « p » and the line which gathers the two lines which denotes to the condition link and can express it according to calculating the predicate according to it $\forall (x)$ if is a man, so is not an animal and written symbolically with consideration the condition $\forall(x) [f(x) \sim M(x)]$ refer to quality man or animal as follows and take conditionality and add the negating principal, but the previous analysis applicable to globality, how did Frege analyse the particles?.

2.2 Existential quantifier :

we can say that partial proposition is a result of negating the universality proposition according to that is differentiating from link universality positive from quantifier and the drafting, so if we have the following proposition: « some of the Algerians are Africans » we can express it as follows : there is just one person « x » who can get the name of Algerian and African and take the symbolic drafting : $\exists(x) [F(x).M(x)]$ and we can conform the following truthfulness of these partial positive proposition by using the symbol.

┌─── $\exists(x) F(x). M(x)$ and we can express the negative partial proposition by putting a negating link to this simple proposition we can draft it symbolically in the previous example «some Algerians are not Africans » from follows, there is at least one person and (x) can be Algerian and not African⁽¹²⁾. We can write it like that $\exists(x) [F(x).\sim M(x)]$, and is clear that this link here is the link of affiliation and we can express it as follows: and read it:



If the two proposition A . B linked together, the truth fulness here is to be true together. According to the last image lead Frege to distinguish between the identity proposition and the personal. What are the starting points of this distinction?

3-Identity proposition and personal proposition :

Gottlob Frege treats in « sense and reference » a new kind of proposition From : « Socrates is Socrates » _ or _ « Aristote is the first teacher » on this kind of proposition there are identity propositions, which can take the following symbolic formulation : « A - A » or « A - B » Frege points out that identity proposition is a kind of « A - A » holds a priori: and according to Kant is to be labeled analytic⁽¹³⁾. Unlike the proposition « A - B » , which needs to prove its truth to the facts of reality in the « Begreiffesstt ». Frege asserts that the relationship that brings together the proposition is the relationship of equality to reference and the equivalence between its components, and a return to the previous symbolism: « A - B » Frege believes that the relationship of equality is an assertion that proposition, has the same content as the proposition B. By doing so, the act of truth does not negate any change in the placement of the content:

It can be said that A - B or B - A, it is expressed in the language of ideography as follows: $A = B$, any proposition that means equal content Equality of content is truth. This category of proposition is what we might call the synthetic proposition it means that the provocation of this difference at Frege, which allowed define the meaning of the proper name and distinguish it From predicate as the previous phrase: « Aristote is the first teacher » or « Abu Baker el Seddik » and others are the compound proper names indicating specific people the name « Aristote is the first teacher », his nickname according to the Greek thought which exists in the history of human being. Accordingly, the phrase « the first teacher » is an adjective that can apply to Aristote himself, without the participation of anyone as long as it is an explicit expression of identity, And what applies to the proper name and what can be on the word identity. The proposition: « the morning star » « evening star » as long as the two terms have the reference: « planet » and by the ability to distinguish between : sense and reference Frege says :

« A proper name (word, sign, combination, expression) expresses its sense, starts for or designate its reference, by means of sign we express its sense and designate its reference⁽¹⁴⁾»

Bertrand Russell developed the analysis to solve the problem of identity, and the proposition of identity : « Houari Boumediene is Mohamed Boukarouba » whose symbolism in Frege takes the following picture :

A - B Formulated as follows : $\alpha F(x), M(x)$, by applying the analysis we draw the following :

- 1- There is at least one Houari Boumediene.
- 2- There is one at the most is Houari Boumediene.
- 3- No matter what this one is Mohamed Boukarouba

By applying the analysis,, the previous proposition because the proposition :

« Houari Boumediene is Mohamed Boukarouba ». if we consider that Frege put the sign of equality as necessary element to emphasize proposition of identity. It makes them different in contrast to the personal proposition. The basic relationship in the latter is the relationship of predication. For example, when we say : « Socrates is a name », Socrates si the subject, and names the predicate. And can not on anyway change the place of subject matter and predicate.

Conclusion:

I am trying to conclude this article, Determining the role of Frege and this contribution to the logical field, By emphasizing the type of symbolism used, and the question we raised in the problem of our research is-What was the role played by the analysis of the proposition predicative when it was invented in modern and contemporary logic ?

I have noticed :

- 1- Frege through his analysis of the predicative proposition, was able to establish a logic for predicative, which is a definition that exceeded the narrowed of traditional logic, and these acts are considered as a starting point for the development of the logical calculation in its modern and contemporary form.
- 2- The analysis of the proposition allowed the rejection of the traditional idea on the quantification and this works as a logical procedure. The

actual motivation on the theory of logical quantification, one of the basis and the foundations on which it was reedy founded with Russell and Quine, and which has founded one of the ways of predication calculation.

- 3- The contribution of frege is reflected mainly as his explicit rejection of the proposition of traditional logic in the proposition of the distinction between the subject and the predicate, and which has been the basis in the traditional logic.

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