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A Review on the Relationship Between Logical Positivism and Glossematics

Mantıksal Olguculuk ve Glosematik Arasındaki İlişki Üzerine Bir İnceleme

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Abstract

As with most theories put forward in sciences, different fields and disciplines affect others in social sciences. In this sense, logical positivism and glossematics are no exceptions. Logical positivism was one of the leading movements in philosophy and proposed ideas for philosophy to be recognized as a true science just like natural sciences. Glossematics was a linguistic school also known as Copenhagen Linguistic Circle, which proposed ideas similar to those of logical positivism for linguistic studies. This comparative study aimed to show the reflection of the ideas of logical positivism on glossematics. After presenting the main ideas of both schools, a comparative analysis was made in this paper. When the general ideas were analyzed, it was seen that, logical positivism proposed verifiability, deduction of structures via scientific methods, and creating unambiguous terms to provide a universal theory for philosophy. Such ideas were also championed in glossematics to yield a universal

Öz

Ortaya atılan çoğu bilimsel kuramda olduğu gibi sosyal bilimlerde de farklı alanlar ve disiplinler birbirlerini etkiler. Bu bağlamda, Mantıksal Olguculuk (logical positivism) ve Glosematik (glossematics) de bu duruma aykırı değildir. Mantıksal Olguculuk, felsefenin önde gelen akımlarından olup felsefenin doğa bilimleri gibi "gerçek bir bilim" olması yönünde fikirler öne sürmüştür. Kopenhag Dilbilim Okulu olarak da bilinen Glosematik de Mantıksal Olguculuk tarafından ortaya atılanlara benzer fikirleri dilbilim için öne sürmüştür. Bu karşılaştırmalı çalışmada her iki akım arasındaki fikirsel benzerliklerin ortaya çıkartılması amaçlanmıştır. Bu amaçla, bu çalışmada sözü edilen akımların öne sürdüğü fikirlerin sunulmasından sonra karşılaştırmalı bir inceleme yapılmıştır. Yapılan inceleme sonucunda Mantıksal Olguculuk'un doğrulanabilirlik, bilimsel yöntemler kullanarak yapılara yönelik sonuçlar çıkarma ve belirsizlik taşımayan kesin kavramlar üretmek temellerine

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linguistic theory. As a result, it can be said that logical positivism and glossematics were strongly related in their views although they were in different fields.

Keywords: Logical Positivism, Glossematics, Philosophy, Linguistics.

dayanarak felsefe için evrensel bir kuram ortaya koyma çabası içinde olduğu görülmüştür. Benzer fikirlerin evrensel bir dilbilim kuramı ortaya çıkartmak amacıyla Glosematik'te de benimsendiği görülmüştür. Sonuç olarak da Mantıksal Olguculuk ve Glosematik akımlarının farklı alanlara ait olmalarına rağmen birbirleriyle büyük ölçüde benzerlik taşıdıklarının kabul edilebileceği söylenebilir.

Anahtar kelimeler: Mantıksal Olguculuk, Glosematik, Felsefe, Dilbilim.

Introduction

There are some movements, which affected many other schools of thought in different fields such as linguistics, psychology, philosophy, etc. and *logical positivism* is one of them. Briefly, *logical positivism* was a movement aimed to change the point of view taken in philosophy towards more of natural sciences. In other words, the supporters of *logical positivism* positioned themselves to make philosophy more scientifically systematic.

One of the linguistic schools affected by *logical positivism* in twentieth century was the Linguistic Circle of Copenhagen, also known as *glossematics*. Inspired by Linguistic Circle of Prague, Linguistic Circle of Copenhagen was a place for discussions and meetings on methodological problems of linguistics.

This descriptive and comparative study aims to present the effect of *logical positivism* on *glossematics*, both of which have had huge effects on linguistics and philosophy. Yet, since each school of thought had many prominent members to cover in one paper, this paper will highlight basic ideas of each school of thought briefly. Then, the effects of *logical positivism* on *glossematics* will be presented.

1. Conceptual Background

1.1. Logical Positivism

Logical positivism, or *logical empiricism*, involved key thinkers such as Moritz Schlick, Otto Neurath, Friedrich Waissman, Rudolf Carnap, Alfred Tarski, Kurt Goddel, A. J. Ayer, W. V. O. Quine, Donald Davidson and Saul Kripke, who were considered as members of Vienna Circle in twentieth century. With an empiricist and scientific attitude (von Daniels, 2010), the members of Vienna Circle were mathematicians, scientists and philosophers who valued empirically verified truth. As Chapman (2009:128) pointed, its followers supported the view that "philosophically legitimate discussion must be limited to statements that could be assigned a determinate truth value"(Battaner-Moro, 2005: 1180)as well as "philosophy clarifies truth instead of discovering it" (Battaner-Moro, 2005: 1180). The concept "truth value" refered to declarative sentences' being either true or false (McLeod, 2009) and the primary aim of this group was to "establish a rigorously scientific mode of

philosophical inquiry where positive, or empirically justified, knowledge was expressed in logically coherent language" (Chapman, 2009: 128-129). Since the common base for *logical positivists* was the verifiable truth as in science, they believed that "the logical analysis of the concepts and sentences of the sciences, for the logic of science is nothing other than the logical syntax of the language of science" (Carnap, 1937 as cited in Kemp, 2011: 140). In other words, they aimed to replace philosophy with the logic of science and shift the metaphysical point of view towards philosophy to a scientific one.

Logical positivists consider verifiability, consistent logic and mathematical reasoning as vital for philosophy. In this sense, everyday language was not a concern for *logical positivists* since they saw it "as imprecise and illogical; its statements were in need of translation into a logically acceptable form before they could be the subject of serious discussion" (Chapman, 2009: 129). *Empiricism* or a concern for scientific methodology rather than metaphysics was at the heart of *logical positivists* for linguistic studies. They supported the idea that "scientific knowledge is firmly and exclusively based on observation, and that, because of this, scientific theories, unlike nonscientific theories, can be proven, yielding knowledge that was certain (indubitable)" (Carr, 2010: 560). As a result, as mentioned above, meaningfulness (and meaninglessness) became a core point for philosophy for them. This idea was reflected to the study of language as well. According to *logical positivism*, "to be counted as meaningful and therefore admitted into philosophical discussion, a statement must be capable of being classified as either true or false" (Chapman, 2009: 129) which led to a distinction between analytic and synthetic statements. A statements' verification requires knowing "the epistemic conditions under which the statement would properly be acknowledged as true" (Callaghan and Lavers, 2010: 404). From this point of view, "some sentences have meaning because they are definable in terms of other sentences, but ultimately basic sentences, the observation sentences, have their meaning because of their direct connection with experience" (Lepore, 2006: 122). Therefore, analytic statements, statements of mathematics and science, are always considered verifiable, true and they are definable with other sentences. Synthetic sentences, on the other hand, refer to the sentences which could be identified as true after empirical evidence and from this point of view, statements of metaphysics, aesthetics, ethics and religion were considered as meaningless since they could not be verified (Chapman, 2009). As long as statements were verifiable and had clearly stated sets of analytic statements, which was a pragmatic decision, they could be accepted as true (Callaghan and Lavers, 2010).

Keeping the verifiability of statements in ordinary languages in mind, *logical positivists* also aimed to "reveal the logical structure of language or to solve philosophical puzzles by analyzing the ordinary usage of words" (von Daniels, 2010: 702). As language was considered as a means for philosophy via making statements as well as understanding the world, revealing the logical structure would lead to establishing a common ground for philosophers. In fact, Carnap, one of the leading thinkers of logical positivism stated that the idea of language studies was "the clarification and re-shaping of our conceptual system through the use of logical methods applied to the analysis and the construction of languages" (Wagner, 2011: 86). He and other supporters of *logical positivism* insisted on the importance of the analysis of language to come up with a tool to enhance a scientific and anti-metaphysical unity. Carnap went on to say "in my view, a language, whether natural or artificial, is an instrument that may be replaced or modified according to our needs, like any other instrument' (Carnap, 1963b: 938 as cited in Wagner, 2011: 86). *Logical positivists* considered analysis of sentences and statements along with the linguistic structures were nothing but a way to reach a uniformed tool to use for philosophy and science. Within the light of such close connection between philosophy and language, *logical positivist* suggested that many philosophical problems were pseudo-problems resulting from the misuse of language and a logical analysis of language could help solving such problems (Wagner, 2011). Since "a language is defined by a system of explicit and precisely formulated rules which are stipulated" (Carnap as cited in Wagner, 2011: 94), analysis of such rules could provide solutions for philosophical inquires. However, *logical positivists*, especially Carnap, favored using artificial languages instead of ordinary language to address philosophical issues. As mentioned above, since *logical positivist* considered ordinary languages as ambiguous, unless ordinary languages were analyzed and described well enough to deal with philosophical issues, artificial languages, which were governed by the rules of logic and mathematics, could have been proven to be useful tools. Even though this idea could be criticized to be superficial at first glance, considering the aim of logical positivists to come with a language to use for philosophical discussion rather than explaining the way people use language, it suited the purpose and propositions of *logical positivist*.

To sum up, *logical positivism* was a movement based on empiricism and scientific thought reflected onto philosophy. The supporters of the movement supported the notion of verifiability. Although *logical positivism* did not point to any specific direction for language

studies, they accepted language as a tool for philosophy and were in search of a language analysis to lead to a unified answer to philosophical problems.

1.2. Glossematics

Glossematics was a theory developed by two Danish scholars, Louis Hjelmslev and Hans Jorgen Uldall, members of the Copenhagen Linguistic Circle in 1930s. Hjelmslev and Uldall aimed to present "a unified theory of phonology and grammar, which aimed at the study of mutual relations between phonemic and grammatical systems" (Luraghi, 2005:471). In other words, they tried to create a theory to combine phonology and grammar to point to a direction for language studies, which was known as *glossematics* in its later stages. F. De Saussure and structuralism inspired their approach towards language widely, especially, importance of units' distinction from each other instead of their exhibition of concrete properties (Fudge, 2006). In this sense, this theory could be regarded as a different approach stemming from an old source for linguistic studies.

As for the description, basically, *glossematics* was "a structuralist approach to the study of language that attempts to establish a formal and abstract theory of language equivalent to the exactness of theories in the natural sciences by setting up a formal system of description based on an elementary unit called a *glosseme*" (Götzsche, 2009: 79). The term *glosseme* was defined as "the smallest unit (as a word, a stem, a grammatical element, an intonation, or an order of words) that signaled a meaning in a language" or "the abstract minimal invariant forms set up by the theory (*glossematics*) as the bases of explanation in all areas of linguistic analysis" (Crystal, 2008: 212). In other words, the smallest meaningful units of a language were considered as *glossemes* and they included a wide variety of linguistic structures such as words, stems, grammatical elements or even word order. According to the theory of *glossematics*, such units should be at the core of linguistics analysis. Another important position taken in *glossematics* was the self-containment and immanence of the linguistic structure (Götzsche, 2009). By this, *glossematics* referred to language's being one of the semiotic systems used by humans to communicate "whose special features would be clarified only when it was compared with other, non-linguistic symbolic systems" (Crystal, 2008: 212). Analyzing the language itself was claimed to be the only way to solve the mysteries of language. All descriptions to reveal the structures of this linguistic system

should be based solely on language and nothing else and in this sense, metaphysical or psychological claims to describe language were discarded.

Glossematics was found on a fundamental core: providing a unified theory to shape linguistics as an exact science (Fudge, 2008; Götzsche, 2009). To do this, just like many other theories of language, *glossematics* started out from a similar and ambitious goal: an attempt "to devise a universal framework within which the description of particular languages could be carried out" (Fudge, 2008: 88). Since science should be universally acceptable and provide undisputable results, *glossematics* aimed to present universally acceptable results with linguistic studies. As a reflection of this idea, *glossematics* proposed to study on the largest possible number of languages to see variations of languages in order to assess what types of grammatical elements could occur in language to work out the metalanguage completely to apply to the description of any given language (Luraghi, 2005). In other words, *glossematics* aimed at "describing a metalanguage, capable of describing all existing languages in algebraic terms" (Luraghi, 2005: 471). This approach became an inspiration for many linguistic schools of thought to come.

To come up with a general theory of language in a fashion similar to those presented in natural sciences, *glossematics* favored analgebraic approach towards language. This meant avoiding unclear statements such as "this sentence entails ideas of the speaker" and ambiguous terms. Instead, *glossematics* insisted that terms used should be clear and unambiguous. The linguists to follow *glossematics* were very enthusiastic about this issue and they insisted on defining their own terms. In fact, as Fudge (2008:90) highlighted, "although suitable algebras were available to glossematics for its purpose, its proponents, notably Uldall, seem to have expended a good deal of energy in attempting to evolve an algebra of their own". Among the terms *glossematics* used, "function", which referred to "dependence relations between other entities" (Götzsche, 2009: 80) was one of the key concepts. The relation between linguistic entities were called as "functions" and "since they are considered only for the sake of functions, concrete linguistic entities (other entities) are called 'functives' (Luraghi, 2005:471). Götzsche (2009:80) explained that *glossematics* "presents a complicated nomenclature of 'functions' and 'functives', the most important of which are the terms 'constant', a 'functive' whose presence was a necessary condition for the presence' of another 'functive', and 'variable' which was a 'not necessary' condition." With this respect, Hjelmslev defined three types of function (Fudge, 2008, 92):

- *Interdependence*, where A implies B and B implies A. A and B may occur together, but neither of them without the other.

- *Determination*, where A implies B, but B does not imply A. A and B may occur together, and B may occur alone, but A may not occur alone (in which case A is referred to as the variable and B as the constant).

-*Constellation*, where A does not imply B and B does not imply A. This function presupposes the other. Here A and B may occur together, B may occur alone, and A may occur alone.

According to *glossematics*, analyzing these functions in all languages could lead to the description of a metalanguage, which could then be used to describe every language based on some primary findings.

In addition to those functions, "sign", a term denoted by Saussure, was also an important concept for *glossematics*. *Glossematics* assumed that linguistic sign carried both expression and content and implied that "minimal units of the same nature, 'glossemes', can be found both in the 'expression form' and the *content form"* (Götzsche, 2009:80). According to *glossematics*, as Luraghi (2005: 471) mentioned, "language is formed by working out a model of language based on the co-occurrence of two elements: expression and content. Each element consists of form and substance, e.g. sound is the substance of utterances, but their form is articulated in phonemes." Yet, this relationship among sign, form and content might sound paradoxical since:

> The sign is a sign for something. That something is the content-substance of that same sign. The other side of the sign is its expression-substance. The relation of the sign to its content is the same as the relation of the sign to its expression - so if we express this relation by the term "to be sign for", we must be able to use this term in both directions. Result: "The sign is, then – paradoxical as it may seem – a sign for a content-substance and a sign for an expression-substance" (Siertsema, 1965: 163).

Although this method sounded complicated and included newly defined terms, there are some similarities between Saussure's and Hjelmslev's ideas of sign. For instance, the terms *expression* and *content* to refer to the *signifier* and *signified*, terms coined by Saussure (Baicchi, 2009) and *form* was considered as a *synonym* for structure (Götzsche, 2009). In other words, this new school of thought can be regarded as a reflection of structuralism from a different point.

1.2.1. The Analytical Procedures of *Glossematics*

Glossematics offered a set of steps to analyze languages that included both deductive and inductive methods of analysis of language. They were mostly structural in their point of view but such a combination of deductive and inductive methodology for language studies was a novel approach (Fudge, 2008). In order to reach a better understanding of *glossematics* and their way of analyzing language, these steps are presented and summarized as follows (Siertsema, 1965: 24-25):

- (a) For a particular language, the expression units (phonemes, syllables, etc.) and the content units (word-roots, prefixes, etc.) must be discovered by means of: (i) relationships holding between content units and (combinations of) expression units, established by applying the commutation test; and (ii) properties of substance of these units.

- (b) Relationships holding between an expression unit and other expression units of that language, and relationships holding between a content unit and other content units of that language, must be described without reference to their substance.

- (c) The units and their relationships are tentatively drawn up into a hypothesized system for the language.

- (d) Steps (a)–(c) must be repeated for as many languages as possible.

- (e) Extrapolation must be made from the total of relations actually found in these languages to the total of theoretically possible relations.

- (f) These theoretically possible relations must be combined into a calculus that constitutes the system of language, rather than the system of a particular language or of many particular languages.

- (g) Each particular language will then be characterized by the subset of actually occurring relations that it has 'selected' from the total of theoretically possible relations. This characterization will enable the tentative systems set up under (c) to be revised and brought nearer to their definitive form.

In summary, on the one hand, *glossematics* can be considered as a promising theory of language with novel ideas. For instance, the mathematical approach was different from the

methods used in humanities, which included "human factor". According to *glossematics*, natural sciences excluded that factor because it was unpredictable and incontrollable and since the aim of *glossematics* was to provide a universally acceptable theory of language similar to those of natural sciences, language should be used to describe itself and nothing else should interfere (Fudge, 2008). The search for a universal theory for languages was an ambitious starting point. As a result, such an approach to describe linguistic structures and language clearly differed from other social sciences and pointed to a new direction. On the other hand, according to Fudge (2008: 80), "although the intellectual achievements of glossematics are widely acknowledged, the approach has had little impact on empirical studies" (Fudge, 2008:80). The reason for that might be related with the fact that *glossematics* was never fully developed (Luraghi, 2005: 471). Some even called the work of Hjelmslev (*The Prolegomena*) as "probably among the most unreadable books in linguistics" (Götzsche, 2009:80). Yet, prominent tenets of *glossematics* such as the idea of a unified theory of language, describing language via language only, using clear and unambiguous terms and utilizing it as an exact science can be considered as "an inspiration for linguists and as a beacon of scholarly rigour" (Fudge, 2008:80), which was a huge success.

2. Reflection of *Logical Positivism* on *Glossematics*

As mentioned above, *logical positivism* was an inspirational movement in mid twentieth century that affected many fields including philosophy, linguistics and psychology. In fact, either directly or indirectly, even Behaviorists could be considered to be influenced by the *logical positivists* for insisting that linguistics, "to be scientific, had to concern itself only with that which was observable, were committed to a position that was antimentalistic, since mental states and processes are, by definition, unobservable" (Carr, 2010: 561). Similarly, a strong connection between *logical positivism* and *glossematics* can be deducted when the ideas of *glossematics* are focused on closely within the light of the philosophy of *logical positivism*.

Meaningfulness was an important concept for both *logical positivists* and *glossematics*. As mentioned above, "verifiability" was a key concept for logical positivists and they considered metaphysical statements as synthetic and meaningless (Carr, 2010; Chapman, 2009). Also, *logical positivism* had a different view from other humanities and they considered "human

factor" as uncontrollable. As a result, they thought science should leave uncontrollable and meaningless factors aside and focus on real conditions to affect the outcomes. According to Fudge (2008), a similar attitude was present in *glossematics*. Fudge (2008) highlighted that since factors like "mind", "cognition" or "world view" were all parts of human factor, they could not be controlled and they were of no use for explaining language. In this sense, "human factor" was related to the metaphysical aspect of language (Fudge, 2008) and "the metaphysical aspect of language" (Trask, 1999) referred to the part that was not observable. It is not surprising that *glossematics* also avoided it and focused on form and content of language as would most structuralist did. Excluding in controllable factors and focusing on logical, verifiable and explainable structures were one of the philosophy that could be seen in *glossematics*.

Another philosophy that can be seen in the linguistic studies favored by glossematics was deduction of logical structures. Deduction is simply defined as "the process of reaching a decision or answer by thinking about the known facts, or the decision that is reached" by Cambridge Dictionary. It can be considered to be at the heart of science and most schools of thought, not surprisingly *logical positivists* as well, regarded it as a true way of reaching scientific truth (Carr, 2009). As *glossematics* aimed at providing a unified and universal theory of language (Luraghi, 2005), deduction was the method they employed as well (Siertsema, 1965). In fact, Siertsema (1965) stated that induction was followed by deduction, the method following analysis, which signaled that *glossematic* inquires used both types of reasoning. Yet, although Fudge (2008) suggested that both induction and deduction reasoning are required for scientific truth, deductive reasoning was "the method from premises using well-defined logical processes" (Fudge, 2008: 89). This might be the reason why *glossematics* used deductive methodology after inductive reasoning.

The idea of forming a unified and/or universal theory was another philosophy *glossematics* and *logical positivists* shared and forming a universal theory of language would require linguistic constants, not variables. In other words, analyzing linguistic elements that vary according to the language user might not comply with the idea of forming a universal theory of language. Analyzing structures of language, an approach to language favored since Saussure, would be more efficient for the task. In fact, Fudge (2008) makes an analogy related with color items in language in terms of linguistic content. For instance, people can use different color terms for the same item (such as light blue, or turquoise) but this would

give little information about the color terms. In this sense, "content" can also be regarded as a variable since it varies according to people. *Glossematics* focused on the structure of language and tried to explain the structural layer of language, which was constant rather than the content, which was a variable. The avoidance of metaphysical aspect was one of the key points of *logical positivists*. In this way, by avoiding metaphysical aspects of language, *glossematics* followed another important philosophy of *logical positivism*.

Both *glossematics* and *logical positivism* praised science and clear terms with utmost importance. *logical positivists* aimed to reach "verifiable truth" via scientific means only without focusing on non-observable or uncontrollable forms. As part of scientific approach, they also avoided ambiguity and overall, their attitude towards exact science was reflected in the works of *glossematics*. *Glossematics* aimed "to reshape linguistics as an exact science" (Fudge, 2008: 88) and this shaped the way they analyzed language. They tried to accomplish this with clearly defined terms and used an algebra like system to analyze languages. In addition, as metaphysical discourse and sentences were disregarded, language structures were focused more. In fact, this way of analysis enabled them to come up with different and valid descriptions of language structures. As a result, analysis of language using algebra like terms and focusing on structures, as glossematics did, could be regarded as another idea underlying the philosophy of *logical positivism*.

Conclusion

Logical positivism and *glossematics* appeared in twentieth century. Even though they were schools for different fields, they shared a group of similar ideas, which shaped the way they analyzed their subject matters: philosophy and language respectively. The effects of *logical positivism* on *glossematics* can be summarized in four ideas as suggested by Fudge (2008):(1) Since only verifiable sentences were concerns of *logical positivism*, *glossematics* also disregarded metaphysical sentences. (2) Logical deduction for science was employed for both *logical positivism* and *glossematics*. (3) Instead of statements of content, structural statements were considered to be primary and (4) a scientific language and terms for linguistic analysis was championed by *glossematics*, as one of the reflection of *logical positivism*.

Although *logical positivism* and *glossematics* had many more aspects to cover, as part of the limitations of this study, only a glance at both schools was presented in this paper. In a future study, a comparative study focusing on philosophers and linguists from both schools could lead to more in-depth results in terms of ideas.

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