Metaphysics of Logical Realism*

Mohammadreza Abdollahnejad
Assistant Professor in Philosophy Department,
University of Tabriz, Iran

Abstract

Despite the often false impression that the analytic philosophy as an anti-metaphysical movement has nothing to do with metaphysics, there can be found good reasons to grant the metaphysical dispositions of analytic philosophers, and thereby, to minimize the anti-metaphysical nature of analytic philosophy in its all phases. Since analytic philosophy is a historical movement the main nature of which developed through several stages, the very kinds of metaphysical dispositions within each one of its various stages can be easily portrayed. In the meantime, logical realism as the early stage of analytic philosophy contains plenty of metaphysical dispositions. Undoubtedly, one cannot say that analytic philosophy in this period was not committed to metaphysical theses about the plurality of entities, the ultimate nature of reality and the logical structure of the world. In this paper, then, after giving a relatively complete explanation of the logical realism, we claimed that although logical realists rejected the traditional speculative metaphysics of their predecessors, they also replaced it by the metaphysics of logic that pursues the metaphysical aims, this time, by logical means. So, we portrayed this kind of metaphysics as Bolzano's Semantic Platonism, Frege's and Russell's Pluralistic Platonism, Russell's Pluralistic Atomism, and Wittgenstein's logical atomism.

Introdoction

Analytic philosophy is a philosophical movement whose main activities have developed in several stages. Its first stage began with the Logical Realism. Logical realism as a general name for the first phase of analytic philosophy includes Bolzano's semantic Platonism and pluralistic Platonism of Frege and the early Russell as well as logical atomism of middle Russell and Wittgenstein's *Tractatus*. According to Smith, "logical realism is characterized by a Platonic theory of universals, direct realism in perceptual theory, and intuitionism in ethics" (Smith, 1997: 3). Likewise, "insisting upon the independence of the object of knowledge from the knower, defending a correspondence theory of truth, rejecting the doctrine of the internality of all relations and affirming the reality and objectivity of relations" (Hacker, 1998: 15) are all the characteristics that Hacker ascribed to logical realism. But it seems that not both definitions are comprehensive and, thus, that is not the case that all logical realists (for instance, Frege, Russell and early Wittgenstein) have consensus on all parts of both definitions. My proposal is that if we define logical realism as a thesis which asserts that we can represent reality through logical analysis of language, then the problem will be solved.

To give an explanation for our demonstration, it should be said that although logical realists agree with other streams (or stages) of analytic philosophy on the idea that "language misleads us" (Hylton, 1998: 53), there are also three essential features that distinguish them from other movements of analytic philosophy, and we can present them as fellow:

(1) Logical realists make use of (formal) logic which is the best instrument for analysis of language.
(2) Logical realists believe that merely by using formal logic (i.e. the very formal logic that have been used by logical analysis) they can manifest and overcome all perplexities of language.
(3) Logical realists have a realist (metaphysical) conception of logical analysis.

The notable thing about (1) and (2) is that analytic philosophers in the face of misleadingness of language are divided into two groups: (a) Ideal language philosophers, and (b) Ordinary language

philosophers. In this regard, logical realists and logical positivists have some sympathy with (1) and (2), because both of them as Ideal language philosophers make use of formal logic as the best instrument for analysis of language and believe that by appealing to logical analysis they can manifest and remove complexities of language.

Undoubtedly, analytic philosophy in the stage of logical realism was committed to metaphysical theses about the ultimate nature of reality and the logical structure of the world. Although logical realists rejected the traditional speculative metaphysics (specifically, that of the absolute idealism), their aims, unlike logical positivists, were not anti-metaphysical. In fact, by using a new method and tool (i.e. formal logic), they intended to replace traditional speculative metaphysics by various forms of putatively analytic metaphysics of facts and their constituents; the very analytic metaphysics that is concerned with abstract entities which are, like Plato's Ideas, mind-independent, non spatio-temporal, imperceptible and yet objective (Frege, 1964: xvi), or with facts and their constituents (Russell, 1918: 112). Furthermore, if we see that *Tractatus* denied metaphysical propositions and insisted that any attempt to state metaphysical truths would necessarily result in nonsense, it does not denote that Wittgenstein has not believed in the existence of metaphysical truths; on the contrary, most parts of *Tractatus* attempt to state such truths, no matter how strictly they can be shown (Wittgenstein, 1922: 4.121). Even now, *Tractatus* and its ineffable metaphysics (i.e. propositions which show or display the logical form of reality) belong to the very analytic metaphysics that we can find in Frege and Russell. Therefore, it is not unreasonable that after entitling this kind of analytic metaphysics as the metaphysics of logic, Hacker stipulates that "it {*Tractatus*} also brought to full fruition the metaphysics of logic that had flowered at the hands of Frege and Russell" (Hacker, 1998: 17).

There are, in fact, various fragments on the part of logical realists which are compatible with these criteria. In this paper, therefore, after pointing out these fragments and tracing the mode of the formation of logical realism, we illustrate the metaphysics of logic in logical realism.

Beginning of Logicism

To detail the three-mentioned properties of logical realism, we must start with Logicism. Logicism, according to Glock, "is the project of providing mathematics with secure foundations by deriving it from logic" (Glock, 2008: 28). Then, its aim is to define the concepts of mathematics in purely logical terms (including that of a set), and to derive its propositions from self-evident logical principles. Although Frege's *Begriffsschrift* (1897) was watershed in this regard, several ancestors of logical realism had a share in its development. And we will show it by representing the mutual relationship between mathematics and logic.

It is well known that sciences, during the nineteenth century, were under the influence of mathematics. But, in the late 19th century, the emergence of new disciplines (like psychology) and the appearance of essential changes within mathematics (including arithmetizing the mathematics and algebra, deriving theorems not from intuitive truths but from axioms and definitions, interest in the nature of natural numbers, and finally introducing the non-Euclidean geometries) cast doubt on the certainty of mathematics, and a fundamental crisis ensued. As the crisis appeared, the mathematicians and then philosophers were inclined to propound the interaction between logic and mathematics in order to establish a new formal language (or logic) by means of which they could increase the formal rigour of mathematics, secure its foundations, and remove the crisis. This is the main task of a project that entitled Logicism and, as we shall see, it was founded by Bolzano and Boole, established by Frege, and culminated by Russell and Wittgenstein. Therefore, we must start our investigation from this point; here is the point from which logical realism and its metaphysics of logic have originated.

Bolzano's Semantic Platonism

Bolzano's philosophy of mathematics is reminiscence of Leibnizian project of unifying human knowledge through purely mathematical rules. But, unlike Leibniz, he resumes this project in order to unify human knowledge (especially, mathematics) through purely logical rules (Shea, 1983: 292). Bolzano's most important innovation in this regard is his method of variation. Its main aim is to understand what

happens to truth-value of a complex proposition when we change one of its components (i.e. a concept or another proposition).This method allows him to provide precise definitions of a large range of logical concepts, and to apply them to mathematics (Simons, 1999: 109-136). By using this method in logic, he took considerable steps to diminish the crisis; he first saved mathematics from intuitionism, then proved the objectivity of logical truths, and finally established anti-psychologism in logic. According to Bolzano's philosophy of mathematics, logical rigour is achieved by purely analytical methods, which do not require recourse to subjective intuitions and pictorial ideas. So, he is the first one who saved mathematics from Kantian intuitionism and opened the way for objective and anti-psychological attitudes in logic. Bolzano's attitudes in this regard, for the same reason, are "entitled semantic Platonism" (Centrone, 2010: vii). According to his view, logical rules are not produced by our mental and linguistic processes, rather, like Plato's Ideas, they are true as such independent of whether anyone ever calls or judges them as true. Then, we can take Bolzano as one of the forerunners of logicism who believes in objectivity of logical truths; a belief which can be found in Frege and Russell.

Boole's Symbolic Logic

The most important innovation of Boole's formal logic is his symbolic logic. Its advantage over Bolzano's formal logic is that it has never insisted that all propositions divide into subject and predicate. In fact, he was the first to apply mathematical concepts to logic and he opened the way for his successors (for instance, Frege and Russell) to make use of symbolic logic. According to Boole, mathematics is not the science of number and quantity; rather, it is a kind of formal language which everyone can employ in different kinds of utterances (Boole, 1854: 20). Thereby, he revived Aristotelian syllogistic logic by reducing it into algebra. Strictly speaking, by putting stress on analogy between the disjunction/conjunction of concepts and the addition/multiplication of numbers, he mathematized logic in terms of algebraic operation on set, and thereby reduced it to a set of self-sufficient rules and symbols whose scientific rigours are the same as those of mathematics. In the meantime, we must remember that

although Bool's name must not be placed alongside the logical realists, he has provided a new platform for logical realists by following reasons: he first taught logical realists the proper way of criticizing Aristotelian logic, and then, by mathematizing logic took an important step toward logicism.

Frege's Pluralistic Platonism

Although Frege's logical system was much benefited by Bolzano and Boole, it also abandoned their defects. On the one hand, Like Bolzano, he has purified mathematics of intuitionism and insisted on anti-psychologism in logic. However, he has never grounded his logic on Aristotelian syllogistic logic. On the other hand, like Boole, he has criticized Aristotelian syllogistic logic and mathematized the logic. But, he has not mathematized the logic in order to display it as a branch of mathematics; rather, he mathematized the logic in order to secure the foundations of mathematics by deriving it from logic, that is, "in order to reduce the whole of mathematics into logic" (Frege, 1979: 205). Moreover, he has founded his logic not (like Boole) on algebra but on function and argument.

   For these reasons and for the sake of Aristotelian logic's inability for securing foundations of mathematics, Frege decided to establish new formal logic which could rigorously formalize mathematical reasoning and pursue the connection of its inferences in order to overcome the imperfections and misleadingness of mathematical language. In this context, natural language does not work, for "every many of the mistakes that occur in reasoning have their source in the logical imperfections of {natural} language" (Frege, 1979: 143). Indeed, one might think that "language would first have to be freed from all logical imperfections before it was employed in mathematical investigations" (Frege, 1979: 266). This great task has been undertaken by his *Begriffsschrift* in 1897. According to *Begriffsschrift*, subject/predicate distinction belongs to natural language and since we are easily misled by natural language, we ought to see our task as that of freeing us from the surface level of natural language and penetrating to its deep level in order to establish the priority of thought (Frege, 1972: 112-113). If we go beyond surface level of natural language, we will see the priority of thoughts; because the rules of

logic have their real place not in language but in pure thought (Frege, 1979: 270). Although the sentences of natural language are necessary, they are imperfect tools for expressing the thoughts. So, we should be cautious. For,

> *We should not overlook the deep gulf that yet separates the {surface} level of language from that of the thought .... To be sure, we distinguish the sentence as the expression of a thought from the thought itself. We know we can have various expressions for the same thought. The connection of a thought with one particular sentence is not a necessary one; but that a thought of which we are conscious is connected in our mind with same sentence or other is for us men necessary (Frege, 1979: 259, 269).*

As we will see below, the most important characteristic of *Begriffsschrift* is that it allowed Frege to establish logicism by introducing new terms (including set, function, argument, thought, sense, etc.) to logic. The results are very advantageous: it not only makes it possible for Frege to provide the first complete axiomatization of first-order logic (propositional-and predicate-calculus) and even to exhibit the logical content of signs, but it also allows Frege to pursue his metaphysical dispositions; the very dispositions some of which are, for some reasons, Platonistic in tune. Therefore, our task is to see the way Frege pursued his metaphysical dispositions through his formal logic and its specialized terms.

The key terms, in this respect, are thought (*Gedanke*) and sense (*Sinn*). Concerning thoughts, Frege speaks as if they are made up of parts, so that a philosophical analysis would presumably be a process of decomposing a thought into its constituent parts. That is why he says: "thoughts have parts out of which they are built up. These parts, {as} building blocks, correspond to groups of sounds, out of which the sentence expressing the thought is built up" (Frege, 1979: 225). Moreover, in *Basic Laws of Arithmatic* he says that "if a name is part of the name of a truth-value, then the sense of the former name is part of the thought expressed by the latter name" (Frege, 1964: 90). Here

Frege's citation means that the meaning (*Bedeutung*) of a sentence is its truth-value; its sense is the thought it expresses. On the one hand, by speaking about the constituent parts or the logical structure of thought, he insisted that we can distinguish parts in the thought corresponding to parts of a sentence, so that the structure of the sentence can serve as a picture of the structure of the thought (Frege, 1984: 390). On the other hand, he took language as a mirror that can represent the logical structure of the world. On the whole, however, his main idea about these constituent parts of thought and sentence compels him to yield to some kind of semantics the acceptance of which is equal to accepting some kind of ontology. We can clarify Frege's assertion that "every sentence expresses a thought and every thought can be divided into two parts" as so: our sentences are about sets of objects in the world, and each one of these objects has properties which are expressed by concepts, they also have some positions with each other which are expressed by relations. That is why, as we observed, he emphatically remarked that "we can distinguish parts in the thought corresponding to parts of a sentence, so that the structure of the sentence can serve as a picture of the structure of the thought". Then, there is a correspondance between the constituent parts of thought (including object, concept, and relation), and the constituent parts of sentence (including proper names, one-place predicate, and multi-place predicate) out of which the sentence expressing the thought and even the constituent parts of mathematics (i.e. argument and function) represent the logical structure of the world (Mendelsohn, 2005: chapter 5)

In "On Sense and Meaning" (1892) by distinguishing between sense (*Sinn*), meaning (*Bedeutung*) and ideas (*Vorstellungen*), Frege offers further analysis of these concepts (and more specially the concept of sense). Thereby, being concerned with logical content of signs, he introduces their meaning as the object they refer to, their sense as the mode of representation of that referent, and their ideas as the subjective association of individuals. Therefore, by doing so, he opens the way to objective interpretation of senses. Here, as we see, Frege's remarks are similar to what he presented about thought in his earlier works. Just as a sense is grasped by any person who understands the sign and yet it exists independently of being grasped,

so a thought can be communicated between different persons and yet it is true or false independently of someone grasping or believing it (Frege, 1984: 157-177).

Now, one can see the advantages of Frege's logical analysis, especially when it serves as a proper tool for satisfying his metaphysical dispositions. One can see, indeed, how Frege pursued his metaphysical dispositions through his formal logic and its specialized terms (including thoughts and senses). But, as we will see in the conclusion, it does not mean that logic produces metaphysics, it only implies that logic is a proper instrument (or a method) for achieving metaphysical thesis; in fact Frege and other logical realists pursued metaphysical aims by logical means. Therefore, it is worth to consider the utilities of this means.

The first utility of such means (i.e. Frege's logical analysis) is its anti-psychologistic attitude in logic. This attitude is a necessary condition of objective interpretation of thoughts and senses, or, exactly speaking, it helps Frege to pursue metaphysical dispositions without involving the mental complexities like those of traditional speculative metaphysics. It allows Frege to assert that thoughts and senses, if true, are not only true independently of our recognizing them to be so, but that they are independent of our thinking as such. A thought or a sense does not belong to the person who thinks about it, as nor does an idea to the person who has it. Everybody who grasps a thought or a sense encounters it in the same way, as the same thought. Otherwise two people would never attach the same thought (or same sense) to the same sentence (or same word), but each would have his own thought (or sense) (Frege, 1979: 133). It is for this reason that Kenny, following Dummett, remarks that:

> *Frege disentangled logic from psychology, and gave it the place in the forefront of philosophy which had hitherto been occupied by epistemology. It is this fact which, more than any other, allows Frege to be regarded as the founding father of modern analytic philosophy (Kenny, 1995: 210).*

The second utility manifests itself when Frege, by criticizing psychologism, paves the way for objective interpretation of logical

concepts. This objective attitude in logic is what helps Frege to realize his metaphysical dispositions. As a matter of fact, Frege's main aim of providing these concepts is not merely to criticize psychologism in logic, but he seeks to constitute the three-world ontology, like that of Plato, by logical means. Indeed, Frege's ideography by introducing thoughts and senses attempts to establish that thoughts and senses are not produced by our mental operations, since "they are objective and existing independent of any one's in fact having grasped it" (Frege, 1964: xvi):

> *Thoughts are not mental entities, and thinking is not an inner generation of such entities but the grasping of thoughts which are already present objectively (Frege, 1980: 67).*

Therefore, Frege's philosophy of logic and mathematics not only combats psychologism, but also erects the three world ontology of Plato. It must be said that, in his view, thoughts and senses are abstract entities which are non-spatio-temporal and imperceptible, yet objective. Indeed, like Plato's ideas, they belong to a third realm that contrasts with the subjective realm of private ideas, and material realm of spatio-temporal things. The point is that we see how Frege, like Plato, commits himself to weighty metaphysical claims about the third realm (i.e. mind-independent abstract entities).

Russell's Pluralism

Like Frege, Russell took his formal logic as an ideal language which avoids the apparent logical defects of natural languages. But his use of new formal logic was wider than Frege, since he applied the new logical techniques more than Frege at the service of metaphysical (and even epistemological) dispositions. It is well known that when Russell, at first, entered Cambridge, the prevailing thought was the same which was propagated by McTaggart; the same version of German idealism which held sway in Britain between the 1870s and the 1920s (Soames, 2003: 94). Though towards the end of 1898 he rebelled against the idealism, Russel also gets steeped in a philosophical system which was vindicated by the idealists. In other words, although he was interested to make a philosophical system like that of the idealists; his favorite conception of system was quite

different from that which they had presumed: his conception of system was not monistic; but it was pluralistic.

For this reason, Russell combated the idealists because of their denial of a plurality of entities (Monk, 1996: 114). Hereafter, he embraces an exuberantly pluralistic realism, and, in place of the synthesis characteristic of the neo-Hegelian idealism, he espouses analysis (Hacker, 1998: 15). That is why he describes analysis as the identification of the simple parts of mind-independent, non-linguistic complexes (Russell, 1992b: xv). He conceives of the matter of analysis as objective and non-linguistic (Hacker, 1998: 15), one which Hylton called the realist conception of philosophical analysis (Hylton, 1998: 42). He seeks to establish his pluralistic realism through logical analysis of language; one which Hacker called metaphysics of logic (Hacker, 1998: 17).

This kind of logical analysis which serves as his pluralistic realism developed in two phases. The first phase which began with *The Principles of Mathematics* (1903) continued until 1905. In this period, he pursued his pluralistic realism by adopting a luxuriant ontology similar to that of Plato. For this reason, it is entitled Russell's Pluralistic Platonism. In the second phase, which began with "On Denoting" (1905), Russell renounced the Platonist luxuriant ontology of *The Principles of Mathematics*, and pursued his pluralistic realism by resorting to some kind of reductive atomism; one which Strawson entitled "reductive atomistic analysis" (Strawson, 1992: 20).Therefore, in this paper, we will discuss Russell's pluralism under the titles of "Russell's Pluralistic Platonism" and "Russell's Pluralistic Atomism".

1. Russell's Pluralistic Platonism

Before 1905, Russell did not emphasize the analysis of propositions so much as the analysis of concepts of which a proposition is made up. As is remarked before, Russell described this kind of analysis (i.e. logical analysis of concepts) as the identification of the simple parts of mind-independent, non-linguistic complexes, and conceived of the matter of analysis as objective. Therefore, this kind of analysis, which Russell often called definition, consisted of "the analysis of complex ideas into their simple constituents" (Russell, 1992a: 18), or "the

analysis of an idea into its constituents" (Russell, 1992b: 111). For this reason, he adopted a pluralistic ontology similar to those of Plato and Frege, and thereby, took everything that we seem to be able to name (including chimeras, numbers, Homeric gods…) as real (Russell, 1992b: 466):

> *Whatever may be an object of thought, or may occur in any true or false proposition, or may be counted as one, I call a term… every term has being, i.e. is in some sense. A man, a moment, a number, a class, a relation, a chimera, or anything else that can be mentioned, is sure to be a term; and to deny that such and such a thing is a term must always be false (Russell, 1992b: 44-45).*

Then, Russell's metaphysical dispositions rooted in his pluralistic Platonism. It is true that after 1905, he keeps his pluralistic project away from Platonism and fills its place in reductive atomism, but he insists on advancing his pluralistic project (and its metaphysical dispositions), this time, through logical analysis of propositions. So, *The Principles of Mathematics* is undertaken to satisfy the first phase of this project.

In *The Principles of Mathematics*, Russell's more important mission was to resolve Frege's paradox of sets, and even to protect logicism from the paradox by means of a theory of type which is entirely supported by his pluralist Platonism (Russell, 1992b: xi). Having relied upon this theory, he prohibited say of a set X what can only be said of X's members, notably that X is or is not a member of X itself as a meaningless formula. The reason for it, according to Russell, was that at once we ascribe to a set what cannot be ascribed to it. Then, by proposing the theory of type, which is entirely supported by his pluralist Platonism, he assumed that there are infinite sets (or sets of numbers) for mathematical operations. It implied that there are infinite things in the world, since numbers in sets have the same role as things or names in sentences. As we observe, this form of speaking has a metaphysical nature; it reminisces of Plato's metaphysics. Any kind of discussion concerning entities belongs to the scope of ontology and metaphysics. So Russell also adopted a

pluralistic system and discussed a plurality of entities in order to satisfy his metaphysical dispositions. The notable point is that he did so by logical means.

2. Russell's Pluralistic Atomism

One of the revolutionary changes brought about by "On Denoting" (1905) was the idea that shifted the emphasis from the analysis of concepts to the analysis of propositions. Although Russell's pluralistic project was not by any means put aside in this period, it kept away his early Platonism and sustained some kind of reductionism. Its main idea was that the form of the sentence will not in general be a good guide to the formation of the propositions (i.e. the underlying logical form), since a sentence with an expression like "The present king of France" in spite of its outward meaning does not really denote anything (Russell, 1905: 483-484). He assumed that the structure (or form) of a sentence does not generally correspond to the structure of the proposition expressing it (i.e. its underlying logical form). Just as all of the sentences containing definite descriptions or proper names express a proposition whose logical form is that of an existential quantification, one can lay aside the existence of dubious entities by logical analysis of propositions. Then, in "On Denoting", by adopting some kind of reductionism (or cautious constructivism), Russell analyzed such troublesome sentences as "the present king of France is bald" into a quantified conjunction, viz, "there is one and only one thing which is a present king of France, and everything which is a present king of France is bald", and thereby asserted that the troublesome expressions such as "the present king of France", "chimera" and "square circle" are incomplete symbols. Although they have no meaning and do not stand for anything by their own, they can be paraphrased in the context of the meaningful sentences in which they occur. By doing so, briefly, he uncovers the true logical structure of propositions and facts; a structure which can differ essentially from the misleading grammatical structures of the original sentences expressing the facts (Russell, 1905:479-493).

One can overtly grasp the prologation of this project in "Knowledge by Description and Knowledge by Acquaintance" (1912), and even in *our Knowledge of External World* (1914).

Russell's main objective in both writings was to reinforce the project of "On Denoting" by furnishing it with the theory of acquaintance (and its Ocam's razor). His aim was to find the true logical form of propositions and facts in terms of such an analysis; a form which can differ substantially from the misleading grammatical form of the sentences of natural language expressing those facts (Russell, 2012: 31-40). In this sense, logic is concerned with the analysis of logical forms (i.e. with the kinds of propositions, with the various types of facts, and with the classification of the constituents of facts (Russell, 1990: 67). Then, if one analyzed the sentences properly, he or she will find that they correspond with the facts they express. That is, the process of analysis is complete when one has found the ultimate components and structures of reality. In such a case, as Hylton mentioned it, one knows that he has done this because the final list of constituents of reality is all objects of sensory acquaintance (Hylton, 1998: 45; 1990: ch.6). So, it implies that it is no longer necessary to suppose that every object of discourse stands for a reality.

This project culminated in Russell's logical atomism, where he pursued his metaphysical dispositions more eagerly. In "The philosophy of logical atomism", he considered his logical system as a certain philosophical position on the basis of which a certain kind of metaphysics emerges (Russell, 1956: 178). Having pursued a pluralistic metaphysical aim by his logical system, he described it as below:

> *The logic which I shall advocate is atomistic, as opposed to the monistic logic of the people who more or less follow Hegel. When I say that my logic is atomistic, I mean that I share the common-sense belief that there are many separate things: I do not regard the apparent multiplicity of the world as consisting merely in phases and unreal divisions of a single indivisible Reality (Russell, 1956: 178).*

Russell used the term "atomism" in contrast to the idealists in order to prove that there are discrete facts composed of particular things. Such particular things are the atoms which form the basic units in his philosophy. Hence, logical atomism is a metaphysical theory which,

like many other philosophical systems (including those of the idealists) seeks to give a synoptic account of reality. But, unlike many others, Russell's system is completely consistent with the actual or potential findings of science, since "it seems that science has much greater likelihood of being true than any philosophy… {And it} shall be wise to build philosophy upon science, because the risk of error in philosophy is pretty sure to be greater than science" (Russell, 1956: 340). Although philosophy depends on scientific findings, it can suggest general hypotheses as to the fundamental features of the world (i.e. hypotheses about facts and their ultimate constituents) by means of logical analysis; those which science is not yet in a position to confirm or confute (Russell, 1956: 341).

In Russell's philosophy, this great task was undertaken by his logical system, while the sciences only presuppose them, logical analysis can reveal the fundamental structural features of the world. So, the first obvious thing to which logic draws our attention is that "the world contains *facts*, which are what they are whatever we may choose to think about them, and that there are also *beliefs*, which have reference to facts, and by reference to facts are either true or false" (Russell, 1956: 182). In "the philosophy of logical atomism" he exposes facts as bellow:

> *When I speak of a fact- I do not propose an exact definition, but an explanation so you will know what I am thinking about- I mean the kind of thing that makes a proposition true or false. If I say "It is raining", what I say is true in a certain condition of weather and is false in other condition of weather. The condition of weather that makes my statement true (or false as the case may be) is what I should call a "fact" (Russell, 1956: 182).*

It is clear from the passage that Russell's logical atomism seeks to depict the relationship between the objective world of facts and our linguistic capacity to access it. By appealing to his logical system, he suggests that "the words in a proposition would correspond one by one with the components of the corresponding fact, with the exception of such words as "or", "not", "if", and "then", which have a different

function" (Russell, 1956: 197). He seeks to reveal the correspondence of propositions with facts and also the correspondence of names in propositions with the constituent components of fact. Therefore, propositions are true when there is a one-to-one correlation between the way its linguistic constituents are arranged and the particulars that hang together in the world.

In "The philosophy of logical atomism", while depicting the isomorphic relation between propositions and fact, he divides all propositions into atomic propositions and molecular propositions, and then concludes that the world does not contain facts that correspond to molecular propositions (Russell, 1956: 188). In his mathematical logic, by analyzing the complex and misleading sentences of natural language, he uncovers the true logical structure of propositions and their corresponding fact. The result is that the world is made up of ultimate ingredients from which more complex structures such as facts are composed. These are the ultimate atoms arrived at through logical analysis.

Thus, logical analysis is a metaphysical theory which claims that new formal logic can mirror the structure of reality. As mentioned before, the two theories of descriptions and acquaintance are key components in the theory. It must be said that if all sentences were complex (or molecular), then there would be no direct way of hooking them up with the world of fact (viz. there would be no fact in the reality corresponding with the molecular sentences), and logic could not be said to be a discipline concerned with truth. That logic is so concerned with truth means that there must be singular (or atomic) sentences. Furthermore, if these are to be true (i.e. correspond with the world of fact), their denoting constituents must be meaningful (i.e. denotes to the object which we are acquainted with in the world of fact).

Equipping logical atomism with two theories of descriptions and acquaintance, he asserts that:

> *We do accept, in ordinary daily life, as particulars all sorts of things that really are no so. The names that we commonly use, like "Socrates", are really abbreviations for descriptions; not only that, but what they describe are not particulars but*

complicated systems of classes or series. A name, in the narrow logical sense of a word whose meaning is a particular, can only be applied to a particular with which the speaker is acquainted, because you cannot name anything you are not acquainted with…{Therefore} the only words one does use as names in the logical sense are words like "this" or "that" (Russell, 1956: 200-201).

According to this passage, if a sentence contains a description, it will never mirror those fundamental features of the world that Russell labels atomistic facts. Those facts are reflected only in the atomic sentences of his logical system, and they are all singular sentences containing proper names. Therefore, Russell's logical atomism is a pluralistic metaphysical system concerning an isomorphic relationship between language, meaning and the world of fact.

Wittgenstein's Logical Atomism

The metaphysics of logic that had flowered at the hands of Bolzano, Frege, and finally, Russell's logical atomism has been brought to full fruition by Wittgenstein's *Tractatus* (1922). Evidently, Wittgenstein's logical atomism, at least in some senses, is similar to that of Russell. Although both of them have some sympathy with the conviction that philosophy is identical with the logical analysis of propositions into their ultimate constituents and that this would also reveal the ultimate constituents of reality, they can be distinguished from each other due to the fact that they suggest different views on the nature of logic.

What helps Wittgenstein in constructing the metaphysical system of his logical atomism is the picture theory of language which asserts that "the proposition is a picture of reality" (Wittgenstein, 1922: 4.01). One cannot deny that it is largely Kantian in tone. While Russell was affected by the empiricist idea that the constituent parts of reality should be objects of sensory acquaintance, Wittgenstein intended a Kantian project of establishing the condition for the possibility of linguistic expression of reality. His main aim was not to establish the precise nature of objects, because propositions of logic as tautologies do not make claims the truth-value of which depends on how things actually are, they only "show that they say nothing" (Wittgenstein,

1922: 4.461). His concern was to show that the existence of objects and atomic states are the main condition of the possibility of the linguistic expression of thought of reality. Thus, the aim of *Tractatus*, like Kant's *Critique*, was "to draw a limit to thought, or rather {for the sake of its giving linguistic twist to the Kantian enterprise}, not to thought, but to the expression of thoughts" (Wittgenstein, 1922: Pref). Thoughts are neither mental processes nor abstract entities; they are meaningful propositions and sentences which draw the limits of the world, since "the limits of language (which alone I understand) mean the limits of my world" (Wittgenstein, 1922: 5.62). Also, thoughts can be completely expressed in language, since "it will only be in language that the limit can be drawn, and what lies on the other side of the limit will simply be nonsense" (Wittgenstein, 1922: Pref). So, by determining the limits of the linguistic expression of thought, philosophy can display the limits of thought: it is by logical analysis of language (and only in language) that we can show that some combinations of signs are nonsense (Wittgenstein, 1922: 4.466). There are, indeed, things that cannot be thought or put into words. They manifest themselves; "they are what is mystical" (Wittgenstein, 1922: 6.522). And "what cannot speak {or thought} about we must pass over in silence" (Wittgenstein, 1922: 7). Although any attempt to state such mystical truths as metaphysics, theology, ethics and mysticism would necessarily result in nonsense, it does not imply that Wittgenstein has never believed in such truths. In fact, most parts of *Tractatus* were attempts on the side of Wittgenstein to state them, even though, strictly speaking, they can only be shown. Therefore, Hacker is quite right to compare Wittgenstein and Kant as so:

> *Just as Kant had drawn the bounds of knowledge in order to make room for faith, so too the young Wittgenstein drew the limits of language in order to make room for ineffable metaphysics (Hacker, 1998: 13).*

Conclusion

We began this article by defining the logical realism as a thesis which asserts that "we can represent reality through logical analysis of language". In this regard, having referred to the logical realists'

common assumption that "language is misleading" and their assertion that "logic can eliminate the misleadingness of language", we portrayed their metaphysics of logic which pursues metaphysical aims by logical means. So, our main aim was to show that although logical realists rejected the traditional speculative metaphysics of their predecessors, it did not imply that they were not interested in metaphysics. It must be mentioned that not only good reasons can be found to grant the logical realists' metaphysical dispositions and theses, but also we can show that there is a common course only within which all metaphysical (traditional metaphysics as well as analytic metaphysics) activities are possible. In other words, there is the four-stages-course which must be traversed by anybody who is engaged in metaphysics: every metaphysician begins with a general question about the facts, and then makes use of a particular hypothesis in connection with that question; furthermore he enjoys a special method or tool in order to prove his hypothesis, and finally takes for granted the existence of some of the basic metaphysical entities and concepts. In this respect, we cannot exclude logical realists from the metaphysical circle. Like all metaphysicians, they begin with a general question about the reality (i.e. they seek to give a general explanation of the world), though they do so not by considering the relationship between thought and reality but by considering the relationship between language and reality. They also make use of a particular hypothesis in connection with that question, though the nature of their hypothesis is different from that of traditional metaphysicians. For example, when logical realists make use of this hypothesis that "language is misleading", their work is like Plato's hypothesis that "the sensible world is shadow". Furthermore, like all metaphysicians, they enjoy a particular method in order to prove their hypothesis, though they replaced the traditional methods (for example, Plato's dialectic) by their new method (i.e. mathematical logic). And finally, their ultimate results are like those of traditional metaphysicians, though the content of their metaphysical theses manifests itself not in the form of Plato's ideas or Descartes' substances but in the form of Frege's ideas and thoughts, Russell's pluralistic atomism and Wittgenstein's ineffable metaphysics.

References

- Bolzano, Bernard. (1950).*Paradoxes of the Infinite*. Translated by D. A. Steele. London & New Haven: Routledge.
- Bolzano, Bernard. (1972). *Wissenschaftslehre*. Selections, translations and edited by R. George. In *Theory of Science*. Oxford: Blackwell.
- Boole, G. (1854). *An Investigation of the Laws of Thought*. New York: Dover.
- Centrone, Stefania. (2010). *Logic and Philosophy in the Early Husserl*. London & New York: Springer.
- Frege, G. (1964). *Basic Laws of Arithmetic*. Translated by M. Furth. Berkeley & Los Angeles: University of California Press.
- Frege, G. (1972).*Conceptual Notation and Related Articles*. Translated and edited by T. W. Bynum. Oxford: Clarendon Press.
- Frege, G. (1979). *Posthumous Writings*. Oxford: Blackwell.
- Frege, G. (1980). *Philosophical and Mathematical Correspondence*. Oxford: Blackwell.
- Frege, G. (1984). "On Sense and Meaning". In B. McGuinness (Ed.). *Collected Papers*. Oxford: Blackwell.
- Glock, H. J. (2008). *What Is Analytic Philosophy?* Cambridge & New York: Cambridge University Press.
- Hacker, P. M. S. (1998). "Analytic Philosophy: What, Whence and Whither". In A. Biletzki& A. Matar (Eds.). *The Story of Analytic Philosophy*. London & New York: Routledge.
- Hylton, P. (1990). *Russell, Idealism and the Emergence of Analytic Philosophy*. Oxford: Clarendon Press.
- Hylton, P. (1998). "Analysis in Analytic Philosophy". In A. Biletzki& A. Matar (Eds.). *The Story of Analytic philosophy*. London & New York: Routledge.
- Kenny, A. J. P. (1995). *Frege*. Harmondsworth: Penguin.
- Mendelsohn, Richard. (2005). *The Philosophy of Gottlob Frege*. Cambridge: Cambridge University Press.
- Monk, R. (1996). *Bertrand Russell: the Spirit of Solitude*. London: Cape.
- Russell, B. (1905). "On Denoting". *Mind*. Vol. 14: 479-493.
- Russell, B. (1956). *Logic and Knowledge: Essays 1901-1950.* R. C. Marsh (Ed.). London: George Allen & Unwin.
- Russell, B. (1990). *Our Knowledge of the External World* (with a new introduction by J. G. Slater). London: Routledge.

– Russell, B. (1992a). *The Philosophy of Leibniz*, with a new introduction by J. G. Slater. London: Routledge.
– Russell, B. (1992b). *The Principles of Mathematics*, with a new introduction by J. g. Slater. London: Routledge.
– Russell, B. (2012). "Knowledge by Description and Knowledge by Acquaintance". *The Problems of Philosophy*. Mineola, New York: Courier Corporation. Pp.31-40.
– Shea, William R. (1983). *Nature Mathematized*. Holland: Kluwer Academic Publishers Group.
– Simons, Peter. (1999). "Bolzano, Brentano and Meinong: Three Austrian Realists". In Anthony O' Hear (Ed.). *German Philosophy since Kant*. Cambridge: Cambridge University Press.
– Smith, Quentin. (1997). *Ethical and Religious Thought in Analytic Philosophy of Language*. New Haven, Conneticut: Yale University Press.
– Soames, Scott. (2003). *Philosophical Analysis in the Twentieth Century*. Princeton, NJ: Princeton University Press.
– Strawson, P. F. (1992). *Analysis and Metaphysics: An Introduction to Philosophy*. Oxford: Oxford University Press.