Jaroslav Peregrin

Academy of Sciences of the Czech Republic, Prague & University of Hradec Králové

jarda@peregrin.cz

Logic and the Pursuit of Meaning[*]

Abstract: The "linguistic turn" of philosophy of the twentieth century led to the overestimation of the role of logic in the process understanding of meaning and in the consequent "dissolution" of traditional philosophical problems. This is not to say that logic, in this respect, would be useless – on the contrary, it is very important; but we must understand that the role it can sensibly play is the Wittgensteinian role of helping us build simplified models of natural language (with all possibilities and limitations *models* have), not the Carnapian role of reducing meanings, without a remainder, to logico-mathematical constructs. In this paper I try to throw some new light on this situation in terms of distinguishing two perspectives that may be assumed to look at an expression: the *expression-as-object* perspective (looking at the relation between an expression and its meaning as a contingent, *a posteriori* matter) and the *expression-as-medium* perspective (looking at this relation as something necessary or *a priori*).

Keywords: logic, meaning, linguistic turn, formal semantics

> We want to establish an order in our knowledge of the use of language: an order with a particular end in view; one out of many possible orders; not *the* order.
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> Wittgenstein

1. Introduction

The linguistic turn that occurred in the minds of various philosophers during the first half of the twentieth century has led to the conclusion that to resolve the traditional philosophical problems means to dissolve them by means of the logical analysis of the language in which they are formulated. The spread of this insight, which presented something truely novel, is probably the most significant event in the history of twentieth-century philosophy; at the same time, however, it is the source of profuse misunderstandings and misinterpretations.

Some of the proponents and followers of the linguistic turn have come to the conclusion that this turn amounts to the ultimate word on philosophy, meaning the end of philosophy in the traditional sense and the rise of a new kind of scientifico-philosophical thinking shaped by Cartesian rigor. Formal logic, viewed as the means of uncovering of the "true structure" of language and consequently of the "true structure" of the world, has moved to the center stage of philosophy.

In this paper I would like to show that however great the significance of the linguistic turn and of the employment of logical means in philosophical analysis, such expectations were – and are – unwarranted. I would like to show that the import of logic for philosophy is neither that it lets us get hold of meanings in an explicit way, nor that it shows us the "real structure" of the world, a structure otherwise obscured by language; rather, its value is that it provides what can be called *perspicuous representations*. It offers us vantage points from which we can comprehend the vast variety of language, and consequently of the world that we cope with by means of language, allowing us to better understand their nature. I would like also to indicate in which way awareness of the limitations of logical analysis is what distinguishes philosophers like Frege, Wittgenstein or Quine from Tarski, Carnap and many of the subsequent analytic philosophers and theoreticians of language.

2. The Linguistic Turn of Philosophy

The linguistic turn, as Rorty (1967: 3), puts it, is based on "the view that philosophical problems are problems which may be solved (or dissolved) either by reforming language, or by understanding more about the language we presently use". The idea behind this is that insofar as all the mysterious entities with which philosophy comes to deal, entities like matter, justice, knowledge, consciousness, evil, etc., are meanings of some words (in particular of the words *matter*, *justice*, *knowledge*, *consciousness*, *evil*, etc.), the only thing a philosopher must do is analyze and understand meanings of words. And this brings his business from the strange and shadowy realms where such entities are supposed to be found back to the all to well known public arena in which we play our language games. Replacing a question *what is (an) X?* by *what is the meaning of "X"?*, the move that Quine (1960: 271) later called the "semantic ascent", we seem to be able to reduce many quite obscure or enigmatic questions to ones that can be answered by straightforward and down-to-earth observations of how we use our language.

Russell, Carnap and other exponents of the linguistic turn pointed out that the problem with language is that expressions which appear to stand for an object may well not do so. In his path-breaking paper "On Denoting", Russell (1905) showed, by the freshly discovered art of logical analysis, that, despite appearances, expressions such as *someone*, *everyone* or *the king of France* are not names; and Carnap (1931, 1934) struggled to demonstrate how such kind of logical analysis can be used to elucidate the nature of "names" such as *God*, *being* or *nothingness* and so to reveal the emptiness of many classical philosophical problems. Such considerations resulted in the conclusion that the surface or apparent structure of natural language is not the structure which is relevant for the semantics of language, that the relevant structure is hidden, and that the task of the philosopher is to bring it to light.

This then led to the view that natural language is only an imperfect embodiment of a perfect ideal structure which can be disclosed by an analysis; and logic was promoted as the general tool for this kind of analysis. In this way logic launched its triumphant campaign in the realm

of philosophy, conquering or exterminating its parts one after another.

3. The Formalistic Turn of Logic

At approximately the same time at which the linguistic turn was finding expression in the writings of Russell, Wittgenstein, Carnap and others, another important event, closely connected with it, took place as well. This was the birth of formal logic in the strict sense.

To avoid misunderstanding, let me stress the difference between what I call *formal* logic and logic that I dub merely *symbolic*[1]. Both formal and symbolic logic are based on the substitution of symbols for natural language statements and expressions; however, whereas within the merely symbolic approach symbols are employed solely for the purpose of regimentation (in Quine's sense), i.e. of suppressing those aspects of natural language expressions which are considered irrelevant for the analysis of consequence, within the truly formal approach the resulting systems of symbols - logical calculi - are taken to be abstract algebraic structures. Aristotle used letters to represent unspecific terms; hence he could be considered an early symbolic logician. Frege and Russell were symbolic logicians *par excellence*; but neither of them was a formal logician.[2]

It was Hilbert who, for the first time, viewed logic as a strictly formal matter; however, a tendency towards such a conception of logic is clearly recognizable already in the writings of the logical school of Boole and Schröder. For Frege, a symbolic formula represents a definite statement, a definite "thought". There are situations in which it may be reasonable to disregard the particular statement a formula represents; but there is no way to detach the latter from the former completely. For Hilbert, on the other

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[1] These terms have been applied to logic in very various ways. See Dutilh Novaes (2011) for an overview.

[2] For both Frege and Russell, symbols were, as Tichý (1988), p. ii, puts it, "not the subject matter of their theorizing but a mere shorthand facilitating discussion of extra-linguistic entities."

hand, a formula is first and foremost an abstract object, an object which we are free to interpret in various alternative ways.

The nature of the difference between Fregean symbolic and Hilbertian formal logic becomes clear when we consider the controversy between the two logicians about the nature of axioms and implicit definitions[3]. For Frege, as for the Ancients, an axiom is a statement the refutation of which is beyond the scope of human imagination; therefore there can hardly be a discussion on whether something is or is not an axiom. For Hilbert, on the other hand, an axiom is a statement which differs from other statements only in that we choose it as foundation; we are free to choose axioms according to our liking.

It was the formal approach to logical calculi which allowed logicians to develop metalogic and model theory, to prove theorems *about* logical calculi. The work of Löwenheim, Skolem, Gödel, Tarski and others who entered the vast new world of "liberated signs" elevated logic to a new paradigm. Tarski's model theory then presented the next step in the takeover of philosophy by logic: after the logical analysis of language as pursued by Frege, Russell and Carnap eliminated the old metaphysics, model theory slowly moved to fill the gap. A volume of selected papers on model-theoretic semantics of one of the most influential twentieth-century theoreticians of meaning, Montague (1974), simply bears the title *Formal Philosophy*.

4. Correspondence

The linguistic turn requires us to look at an expression as a mere type of sound or string of letters and check whether there is a meaning attached to it. Similarly for the formalistic turn of logic: to be able to consider a system of logical formulas as something self-contained, something that can be interpreted in various alternative ways, we must regard formulas as not having *a priori* meanings, but rather as mere strings of letters.

At first sight, there might seem to be nothing easier than consider an

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[3] See also Peregrin (2000).

expression of a language as an object deprived of any meaning. After all, *meaningful* expression is a amalgamation of such meaningless expression with its meaning, a combination that does not hold together by itself, but is held together solely by the powers of the human mind; so it seems that to consider an expression as meaningless is easy, for it merely relieves us of the mental effort of holding it together with its meaning.

However, I am convinced that looking at meaningful expressions in this way is basically misguided, they are not complexes formed by attaching meanings to sounds; they are more adequately seen as meanings embodied in sounds. An expression serves as a mere way of presenting its meaning; normally we do not perceive an expression as such, but rather look "through it" at its meaning. An expressions and its meaning are inseparably connected; they are, as de Saussure (1931) put it, two sides of a single sheet of paper. Thus, the connection between an expression and its meaning can be said to be *a priori*, not to be found *in* the world, but rather being *constitutive of our grasp of* the world. And the linguistic turn requires intentional suppression of this normal perception.

Once we realize that the Saussurean two sides of a sheet of paper picture the composition of an expression and its meaning much more adequately than the amalgamation of an expression with a meaning, we can see that it might take a nontrivial effort to disengage an expression from its meaning, while what is effortless is to see it as an embodiment of the meaning – to see it as meaningless need not be any easier than to see, say, a human ear as a mere chunk of meat, rather than an ear[4].

In sum, both the linguistic turn of philosophy and the formalistic turn of logic require us to view the relation between an expression and its meaning as a contingent, *a posteriori*, fact. However, we cannot adopt this view universally without undermining our ability to use language and engage in

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[4] As Dutilh Novaes (2012), Chapter 6, duly points out, "de-semantification" is a cognitive mechanism which is very non-trivial and which is crucial from the viewpoint of the deployment of the methods of modern formal logic. In particular "by countering our automatic (or default) tendency towards semantic activation, de-semantification allows for the deployment of reasoning strategies other than our default strategies, thus enhancing the 'mind-altering' effect of reasoning with formalisms".

argumentation. If we held the relation between an expression and its meaning to be always contingent, then no statement could be true necessarily, in every possible world (and hence we would not be able to articulate any universally valid argument) - for even for a statement that means (in the actual world) something which is true in all possible worlds there would be possible worlds in which the statement would be false, namely each possible world in which the statement would mean something false (in that world).[5] To say that the relation between a statement and its meaning is contingent is to say that there are possible worlds in which the statement means something false; and for the sake of rational argumentation we need statements which have meanings independent of possible worlds (which are, so to say, "about" possible worlds).[6]

Hence we need both the perspective which allows us to look at the relation between an expression and its meaning as something contingent (*a posteriori*, "within the world") and the one which allows us to look at this relation as something necessary (*a priori*, "about the world"). Let us call the former the *expression-as-object* perspective and the latter the *expression-as-medium* perspective. The expression-as-object perspective is the perspective of a foreigner trying to figure out how to translate our expressions into those of his own language (or that of a linguist intentionally reflecting upon our usage of language); the expression-as-medium perspective is that of our fellow speakers chatting away without any awareness of their use of language. As philosophers we need both perspectives, and, moreover, we need to go back and forth between them. The need to switch between the two perspectives is quite obvious when we try to state explicitly what a given expression means. Let us consider the

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[5] Contingency of meaning thus makes for a double-dependence of the link of a statement to its truth value on possible worlds: not only that a proposition can be true in some possible worlds and false in others, but also that a statement can mean different propositions in different possible worlds. (This has come to be explicitly reflected by the so-called "two-dimensional semantics" – see Stalnaker, 2001.)

[6] This is to say that possible worlds cannot be used to explain language, because they themselves make sense only on the background of a language. See Peregrin (1995).

statement (3), or its Tarskian variant (4).

"Snow is white" means that snow is white (3)
"Snow is white" is true if, and only if, snow is white (4)

Such articulations of the correspondence between language and the world, which are at the heart of the foundation of the Tarskian correspondence theory of truth, have initiated a broad and still continuing discussion.[7] The central issue in this discussion is the status of sentences articulating correspondence: is (4) a necessary or a contingent truth? If it is necessary, then the correspondence theory manages to state the truth conditions of a contingent statement without telling us anything factual, which seems absurd. If, on the other hand, it is contingent, then how is it possible that we directly *see* its truth?

If we consider the sentence *snow is white* as *a priori* equipped with its meaning (i.e., if we use the expression-as-medium perspective), then to say either (3) or (4) is to utter a truism. If, on the other hand, we were to look at *snow is white* as a string of letters whose meaning (if any) is a matter of empirical investigation (hence adopting the expression-as-object perspective), we would make the *intelligibility* of (3) and (4) itself an empirical issue. In other words, understanding this sentence presupposes knowledge of its truth. What we need to do is use the expression-as-object perspective for the first occurrence of *snow is white* in (1) or (2) and the expression-as-medium view for the second; only then are we able to see the statement as a nontrivial piece of information, on a par with *"Schnee ist weiß" is true if and only if snow is white*. (This switch of perspective is, of course, what the apostrophes are employed to effect.)

This example illustrates that it is only through the ability to treat meanings as detachable and to switch between the expression-as-medium and the expression-as-object view (comparable with switching between perceiving a window and looking through it) that we can make sense of correspondence. More generally, it is this ability that underlies both the linguistic turn of philosophy and the formalistic turn of logic. The ability to

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[7] See, e.g., Leitgeb (2007) and the literature quoted there.

view logical formulas both as self-contained objects and as mere ways of pointing to their meanings is what makes it meaningful to consider alternative interpretations of formulas. It is this ability which made possible the development of genuine formal logic and model theory. And it is the same ability, applied to expressions of natural language, that makes it possible to understand truth as correspondence and to complete the "semantic ascent". However, the art of playing hide and seek with meanings can be deceptive: we may delude ourselves into thinking that we have gained everything when in fact we have lost everything because we have lost firm ground beneath our feet.

5. The Two Faces of Language

It may be helpful to use the spatial metaphor and to speak about "inside language" and "outside language". To be inside means to use language as the medium of grasping the world; to be outside means to perceive language as a thing among other things of our world. To be inside is to take an expression as inseparably and unquestionably connected with its meaning, while to be outside is to perceive the connection between an expression and its meaning as an empirical fact. If we are inside a house and perceive the sky through a hole in the house's roof, then it makes no sense to ask whether we really do perceive the piece of sky we do; whereas if we are outside the house, then the question whether an inside observer can perceive this or that piece of the sky is meaningful and nontrivial. The perspective from inside is the expression-as-medium perspective; whereas that from outside is the expression-as-object perspective.

What makes language capable of constituting an "inside", which we can "enter"? As I have explained in greater detail elsewhere[8], it is I think the fact that language is, essentially, a complicated system of *rules* that have come to interlock in a robust, but delicate way to delimit the "space of meaningfulness", in which we can take up meanings. In fact, the kind of "Janus-facedness" characteristic of language is merely the most

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[8] See esp. Peregrin (2012, 2010).

sophisticated version of a property of everything that is *norm-driven* (and thus rational). Any norms are bound to be outgrowths of human communities and viewed as such they appear as contingent products of factual historic developments; but we, as rational beings, are characterized by the ability to *obey* norms; in other words, to assume the viewpoint from which they appear to us as necessary.

If we are inside English, then we perceive what statements like (3) and (4) say as *a priori*; if we are outside, we perceive it as *a posteriori*. Hence we may draw the conclusion that to be inside a language prevents us from seeing the language in the unprejudiced way, and that therefore we should try to stay outside *every* language. However, this seems to be simply impossible for a human being, and it is surely impossible for a *theorizing* human being. There is no necessity in adopting a particular language, but it is necessary to adopt some language, and adopting a language means to approve the necessity of its necessary statements. As Wittgenstein (1956: II, §30) puts it, "the *must* corresponds to a track which I lay down in language." If we do not speak German, then finding out that the sentence "Schnee ist weiß" means that snow is white is like finding out that, say, Hamburg is a port; if, on the other hand, it is German that is the language we use to cope with the world, then we cannot find out anything of this kind, because the knowledge of it underlies the very possibility of "finding out".

Moreover, the replacement of the study of the mind and of the world by the study of language which underlies the linguistic turn is meaningful only due to the fact that language acts as our universal means of coping with the world, that it is a medium. In other words, the linguistic turn makes sense only when related to the language we are inside.[9]

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[9] In fact, the problem of the two faces of language is nothing new; it is only the modern reincarnation of the much more traditional problem of the ambiguity of subjectivity. The subject, the *ego*, can be considered either as a thing on a par with other things of the world ("psychological" subject) or as something that is transcendent to the world, that is, in Wittgenstein's words, not a part of the world, but rather its boundary ("transcendental" subject). If we want, as Husserl did, to use an analysis of the subject as a step toward the analysis of the world, we must consider the subject in the latter sense, as a *transcendental ego*; we do not need subjectivity as "Seelenleben", but rather subjectivity as "Geltungsgrund aller

To sum up: our language is a Janus-faced being; it may be "in the world" (when we are outside it), or it may be "about the world", i.e., "transcendent to the world" (when we are inside it). We can move in and out; but we cannot be both in and out in the same time. However, to realize all of this means to question the philosophical significance of the correspondence theory, and of the idea of linguistic turn as resting on this theory. The point is that to make the theory of correspondence nontrivial, we need to be outside the language in question; but to make the theory into a path-breaking piece of philosophy we would have to be inside it. If we are inside, then the theory of correspondence is trivial, whereas if we are outside, then it is one of the numerous hypotheses of natural science to be tested by field scientists. What we can get hold of and thus use to articulate correspondence is the language-as-object; but the notion of correspondence is philosophically significant only when related to language-as-medium.

In contrast to Tarski, Wittgenstein was clear about this predicament from the beginning. Like Tarski, the Wittgenstein of the *Tractatus* was convinced that correspondence was the key concept, but unlike Tarski he immediately realized its essential deceptiveness. He clearly saw that if we understand language in terms of picturing reality, then we question all necessary statements (tautologies and contradictions), because these are not pictures. Thus he was led to the seemingly counterintuitive conclusion that the statements of philosophy cannot be in fact meaningful - the reason is that although truth may be indeed considered reducible to correspondence, no theory of correspondence that would imply the reduction can be consistently articulated.

6. The Two Kinds of Logic

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objectiven Geltungen und Gründe" (Husserl, 1977: 27). The linguistic turn then means only the replacement of the subject by language. The opposition between the psychological and transcendental subject reappears as the opposition between the notion of language-as-object ("grammatical language") and the notion of language-as-medium ("transcendental language"), only the latter being able to underlie ontological considerations.

The primary aim of logic is to summarize basic instances of consequence, basic patterns of our reasoning used in arguments and proofs. Thus, logic is inseparably linked to natural language - the medium of expression in which arguments and proofs are originally formulated. The use of symbolic and formal devices within logic arises from recognition of the fact that such patterns are easier to summarize if we do not take natural language at face value but reconstruct it instead as a strictly rule-based grammatical system. This leads us to the concept of a formal calculus, a calculus consisting of a formal grammar determining the class of well-formed expressions, plus axioms and rules of inference determining the relation of consequence and hence providing the needed criterion of validity of proofs.

Formal logic suspends the relationship between natural language and its formal reconstructions in order to permit the undisturbed analysis of properties of formal calculi. However, once formal calculi began to be studied independently of their relationship to natural language, they slowly came to be seen as languages of their own - not as reconstructions of natural language, but rather as alternatives. Taken in this way they turned out to be substantially incomplete: whereas it is essential for natural language expressions that they be linked to their extralinguistic denotations, expressions of the formal calculi lack such links. This was the point at which Tarski entered the scene: his model theory appeared to provide precisely what was needed, namely extralinguistic entities to which expressions of formal calculi could be linked. Thus the parallelism between natural language and languages of formal logic seemed to be complete; and scholars like Montague began to deny any real difference between the two kinds of languages.

Notice that the original aim of logic is compatible with the language-as-medium perspective. We need not speak *about* language, we only need to replace natural language statements and arguments by their formal regimentations which allow us to ignore all irrelevant idiosyncrasies and so to see the relevant patterns. Thus, it allows us *to capture the unity of sense within the multiplicity of surface forms* and to account for the infinite class

of valid instances of consequence by finite means.[10]

However, if interpreted formal calculi are seen as alternatives to natural language rather than as its regimentation, logical analysis might be seen not as a schematization of natural language sentences, but rather as a way of making their meanings explicit by furnishing them with model-theoretical interpretations[11]. The problem of explicating meaning has come to be understood as the problem of finding a model theory adequate for natural language. Many theoreticians have embraced so-called "representational semantics", claiming that we must first develop adequate set-theoretic representations of what the world is like and what it could be like, and only then study the relations of sentences to these representations.[12] However, to develop an explicit semantics means to step outside natural language and hence to demote it to a mere object among other objects of our world.

From the vantage point of the basic aim of logic this whole approach is disputable. We can, of course, consider a formal calculus as a self-contained whole, study various relations between its formulas, and talk about some of these relations as relations of "consequence"; but doing so means doing algebra, not logic in the genuine sense of the word. Algebraic theories resulting from the autonomous study of logical calculi are respectable as such, and provide useful tools to the logician; however, they are not as yet logic; similarly as the theory of solving differential equations, surely indispensable for a physicist, is not as yet physics.

Axiomatic systems were introduced to characterize and explicate the pre-theoretical notion of consequence; their basic aim was to characterize the infinite number of instances of consequence by finite means (by reconstructing them as potentially inferable by means of a finite number of

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[10] The intention to use symbolic means precisely to this effect has been clearly formulated in the introduction of Frege's *Begriffsschrift*. See Frege (1879: v).

[11] This institutes an important ambiguity of the term "interpretation"; see Peregrin (1994).

[12] Thus Etchemendy (1990). In fact, this means a return to metaphysics, although to metaphysics in a set-theoretical disguise. Brilliant samples of systems of such a set-theoretical metaphysics can be found, e.g., in Cresswell (1973) or in Barwise & Perry (1983).

inference rules from a finite numbers of axioms), i.e. to deliver a *criterion* of consequencehood. Model theory is merely another such method of characterization (and it is in fact questionable as a method, in that it does not restrict itself to finite means and hence need not provide a real *criterion*). Thus the formal completeness of a logical calculus does not prove its axiomatization to be "right" (i.e., to adequately capture the consequence relation as it is "directly" presented model-theoretically), rather, it shows that two alternative formal characterizations of consequence, the axiomatic and the model-theoretic one, coincide (thus corroborating the - essentially formally unprovable - claim that they both adequately capture the pre-theoretical notion of consequence).

We have distinguished between two notions of language, the notion of language as an object among other objects of our world, and the notion of language as a medium of presentation of the whole world. Given the basic dependence of logic on language, we can draw a similar distinction for logic: a logical calculus can either be taken as a mere object within our world, or it can be understood as a regimentation of language in its transcendental capacity. This is tantamount to the distinction between *logic as calculus* and *logic as language* introduced by Heijenoort (1967).

There is little doubt that our medium of reasoning is not a language "within the world", but rather a language "about the world"; i.e., that it is the medium view of language that must form the ultimate basis of logic. Calculi of formal logic, if they are not to be understood simply as algebraic structures on a par with groups, rings or vector spaces, must be seen as "regimentations" of our language in its transcendental capacity. Thus, if a logician proposes that "we simply put the logic which we are studying into one compartment, and the logic we are using to study it in another",[13] then he is stepping on thin ice, because unless the logic we study is the same as the one we use, it is in fact no logic at all in the authentic sense of the word.

Neurath's classic metaphor seems to be particularly apt here: we cannot step out of the boat of our language, we have to rebuild it while staying aboard. We can make logical calculi to capture and to explicate important

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[13] Kleene (1967: 2-3).

points of the way we use language, but we cannot throw away our language and put a calculus in its place.

7. The Elusiveness of Semantics

So is there any way at all to make sense of the linguistic turn and use logic for philosophical purposes? Do we not, as soon as we begin to speak *about* language, *eo ipso* adopt the *language-as-object* perspective and hence do "mere" linguistics? And are we not doing "mere" mathematics as soon as we set out to do model theory?

An answer to this question is indicated in Wittgenstein's *Tractatus*: one can create a picture, articulating correspondence in such a way as to feature language-as-object in the role of language-as-medium, and hope that the reader will get it and yet not take the picture literally. This is why Wittgenstein says that his *Tractatus* offers no learnable truths, but rather a kind of ladder that should be kicked away once the reader has used it to climb higher.

Hence the difference between linguistics and model theory, on the one hand, and a philosophical account of correspondence, on the other, is not that the former speak about language-as-object and the latter about language-as-medium - whenever we *speak about* language, we *eo ipso* speak about language-as-object. Language-as-medium can be used, but not fully spoken about. The difference is that in the framework of linguistic or logical discourse we take speech about language literally, whereas in the framework of philosophical discourse we take it as a metaphor, as a picture. In doing Wittgensteinian philosophy we may make use of language-as-obect to the extent that it can serve as a vehicle of metaphor; but we must avoid taking the metaphor literally, mistaking language-as-object for language-as-medium. We should devise a theory which permanently reminds us of its metaphorical character.

Let us return to (4). The sentence *Snow is white* is true if and only if snow is white. We may be tempted to say that it is true *due to the fact* that "out there in the world" or possibly in a model structure which is considered to offer a faithful representation of the world the entity snow

instantiates the property of being white, or that snow is an element of the set of white things, or that there exists a fact of the coincidence of snow and whiteness. However, all of this is rather tricky: we can either consider *snow is white* as a mere string of letters (from the object perspective, i.e., from outside English), and then it is in itself neither true nor false; or we can take for granted that it has its usual meaning (using the medium perspective, i.e., staying inside English), and then (4) turns out to be self-evident[14]. To say that the entity snow has the property of being white is not an explanation for the truth of the sentence *snow is white*; it is only its cumbersome paraphrase[15]. It is, in fact, as Rorty (1989: 7) puts it, like explaining why opium makes you sleepy by talking about its dormitive power.

If we realize that our language is the "universal" (the illuminating German word *unhintergehbar* unfortunately has no exact English equivalent) medium, then we must conclude that its semantics is in a certain sense fixed. Moreover, we must conclude that this semantics is essentially elusive - to be able to grasp it we would have to step outside language, and this is essentially impossible. "There is no outside;" as Wittgenstein (1953: §103) puts it, "outside you cannot breathe."

By providing a model-theoretical interpretation for a formal calculus or for a natural language we offer a new perspective which may help us perceive patterns and regularities which would remain hidden to our eyes otherwise; however, it is inadequate to see this act as the act of going from the words to what the words are about.

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[14] If I say that the entity denoted by "snow" instantiates the property denoted by "is white", then I speak about English and I hence treat of English from outside. However, that such a statements really requires the perspective from outside means that it says something more than every statement that could be made from inside, especially that it says something over and above the statement that snow is white. This is just the case when I insist that the fact of snow's instantiation of whiteness is a fact independent of, and casually determining the fact of the truth of *snow is white*.

[15] Some paraphrases of such kind, if carried out systematically, may have a purpose, namely helping us see a relevant structure of language; however, this has little to do with the language-world relationship and with the question of what makes sentences true.

8. Formal Logic as "perspicuous representation"

The exclusive acceptance of the *logic-as-calculus* notion prevalent now, and the mistaking of this notion for the notion of *logic-as-language*, has led many philosophers to misguided conclusions. However, there is also a more or less continuous tradition exhibiting awareness of the limitations of this notion in philosophical contexts. As was shown especially by Hintikka, the notion of *logic-as-language* has been central not only for Frege, but also for some of the most outstanding analytic philosophers of this century, especially Wittgenstein and Quine.[16]

The employment of formal logic for philosophical purposes is justified only to the extent that it helps capture language in its transcendental capacity. In other words, formal logic, and especially model theory, is not as yet philosophy; it is a device which can be utilized (correctly or incorrectly) by philosophers. Moreover, there is no rule for correct usage. This was clearly recognized by Frege, Wittgenstein and Quine[17], but largely ignored by Tarski, Carnap, Montague and many other philosophers and semanticists.

The purpose of formalization is to help us to see certain aspects of language and its functioning more clearly, to achieve what we might call, borrowing from Wittgenstein (1953: §122), an *übersichtliche Darstellung*, *perspicuous representation*. It is justified to the extent, and only to the extent that it fulfils this function; and it must be constantly evaluated from this point of view. Stekeler-Weithofer (1986: 141-2) has described the situation as follows:

> With the development of the functio-logical semantics one

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[16] See Hintikka (1984: 27-49); Hintikka & Hintikka (1986); Hintikka (1990).

[17] It is instructive to see how Frege understands the role of formal logic in his *Begriffsschrift*. For him, his *concept script* is like microscope: it is a tool excellent for some purposes (namely for the purposes of science demanding extraordinary acuity and differentiation), but useless for others.

constructs a (mathematical) "object of comparison", a logico-mathematical "picture" or "model", and *compares* certain aspects or regularities of our common language usage, especially of our usual talk about the meanings of linguistic expressions and of normal judgements of correctness (adequacy) and hence truth of statements, with aspects and regularities in the picture. Such a comparison can yield certain keys to understanding how language "functions" and it can help us formulate explicit rules of meaning sensibly, ... One should never forget, however, that what is at stake are constructed pictures, perspectives which can be varied, and not descriptions adequate in general, nor generally approvable criteria governing correct speech and argumentation.

Russell, Carnap and other scholars were convinced that the structure of language, although something quite definite, is hidden inside language or behind it, and that we need logical analysis to bring this structure to light. In this view, doing logical analysis can be compared to opening the lid of a complicated machine, thereby revealing the machine's inner workings. This metaphor is misguided, however: there is nothing about language that is hidden and can only be made visible by opening a lid. Language is accessible to us in all its aspects; our problem is to comprehend it - to command, as Wittgenstein (1953: §122ff.) puts it, a clear view of it. If language is to be seen as a machine, then it is a machine with all its wheels and gears in full view. Thus, the use of logical formulas to analyze language is more felicitously compared to drawing up a scheme to facilitate comprehension of the operating principle of an engine that is itself fully accessible to inspection but too complicated to be understood. No logical calculus is *the* scheme which would guarantee understanding language, it is at most one of many possible schemes that may contribute to it.[18]

9. Conclusion

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[18] For a further elaboration on these themes see Peregrin (1995).

The linguistic turn is based on the fact that whatever we can speak about is the meaning of an expression of our language and that ontology is thus in a sense reducible to semantics. Model theory, as developed within the framework of modern formal logic offered means for the explicit capturing of semantics; hence it is tempting to promote model-theoretical semantics as ontology.

However, this might be really misguiding. If we look at our language "from inside" and if we understand logic "as language", then model theory can be at most one of the formal ways of summarizing ways of using language; and as such it cannot be an explanation over and above being a summarization and making language more comprehensible. On the other hand, if we look at language from outside and if we pursue logic as calculus, then there is no immediate philosophical relevance of model theory; model theory is simply a part of mathematics and model-theoretical semantics is a part of empirical linguistics. Such enterprises can be considered philosophically relevant only as metaphors; metaphors which may (and do) help us see how is our language related to the world, which are nevertheless no direct theories thereof.

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