THE CONCEPT OF 'SYNTACTIC METAPHOR' AND ITS BACKGROUND IN THE PHILOSOPHY OF LANGUAGE*

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The following paper tries to develop, in an introductory fashion, the concept of a 'syntactic metaphor'. Although the concept of metaphor is being highly debated nowadays I have not found it applied to the domain of syntax. So hopefully I am offering here something new. I am myself curious whether it will turn out to be a legitimate and useful concept or not; so I do welcome the opportunity to present my arguments and I will be thankful for comments and criticism.

Let me stress from the very beginning that I am speaking here as a philosopher of language and not as a linguist. For this reason my perspective might look peculiar to those of you who are not thinking in the logical tradition of the philosophy of language, i.e. the tradition from (to give just two names) Gottlob Frege to Donald Davidson. There may be linguistic theories that have never accepted the philosophical limitations I will be discussing, so for some of you some of my problems may look strange. But this could make a good starting point for an interdisciplinary discussion in pwhich a philosopher is eager to learn something from the linguists.

My paper will have three parts: In the first section I will give a sketch characterizing the philosophical tradition that forms the background for the problems I am dealing with. *These problems center around the question of*

how we have to understand the *structure* of sentences from a semantical point of view. In the second as well as in the third section I will argue against certain limitations in the traditional treatment of sentence structure: The second part will introduce a so called 'constructivist' perspective and its claim that there are more modes of sentence-composition than traditional logic had thought or cared to exhibit. And in the third part I will introduce the concept of syntactic methapor and the claim that a single mode of sentence-composition normally has more than one meaning.

1. The philosophical tradition

The philosophical theories of language have always been theories of meaning. The most pervading general approach in' these traditional theories has been (critically) characterized by Ludwig Wittgenstein by quoting a passage from Augustine's 'Confessions' and it is sometimes referred to as the 'Augustinian picture'.[1] According to it, meaningful utterances are basically names or combinations of names. It is the property of being the name of some object that gives a word its meaning; and sentences are accordingly seen as combinations of names.

If we think here of everyday middle-sized objects like apples and chairs, we immediately face a problem: How can a succession of names form a *unit* of meaning? What is it that prevents the meanings of the words from falling apart, and instead makes them work together to form a new unit, the sentence meaning? A simple way to put this question is the following: What is the difference between a sentence and a shopping list? Both are made up of a succession of words but the shopping list just names a number of goods a person is planning to buy, whereas a sentence forms a unit of some sort, in which the words are related to one another in a characteristic way.

Our intuition tells use e.g. that a sentence like 'Peter loves Mary' expresses a *unit* of meaning that would be altered if we change the order of the words to get 'Mary loves Peter'. In contradistinction to this case the list 'bread, beans, tomatoes' does not form a unit in the same sense. This can be seen e.g. from the fact that the position of the items on the list can be changed without thereby affecting an alteration of the meaning of the list, i.e. of its role in the activity of going shopping. So we have to answer the following question: How can the semantic unity of the sentence be understood? Or: How can we account from a semantic, i.e. meaning-related point of view for sentence structure?

The answer that most philosophers of language would give today goes in its basic outlines back to Gottlob Frege. His main idea was that from a logical point of view there are exactly two categories of expressions that are different in such a way that they are predisposed to form a unit when they are combined. For Frege, logic has to do with sentences under the perspective of truth and falsehood only, and the two categories of words that make expressions of truth and falsehood possible he characterized as 'saturated' ('gesättigt') on the one hand, and 'unsaturated' ('ungesättigt") on the other hand.[2] One could visualize this distinction by imagining the meanings of saturated expressions as round discs, and the meaning of unsaturated expressions as bigger round discs with holes punched into them of exactly the appropriate size to be filled by the meaning of a saturated expression. Then an unsaturated expression will be saturated by having filled its hole, and after this procedure it can itself fill a hole in a bigger unsaturated expression.

The paradigm-case of a saturated expression is the proper name of a person, e.g. the expression 'Peter'. It can 'stand on its own

feet', it has a clear and complete meaning all by itself (we say: it means one particular person), and it can without any additional words e.g. be used to *call* the person bearing this name. The paradigm-case for an unsaturated expression is a simple predicate-term like 'Spanish' or 'musician'. According to Frege, it is a part of our understanding of these terms that we see that they are incomplete. Using our visualization we can say that they (more exactly: their meanings) have a hole into which (the meaning of) a saturated expression is meant to be put in order to complete or 'saturate' the meaning, and in case the expression is built in a fashion exhibiting the properties of its meaning, complete the expression also. For this reason Frege sometimes writes such an expression in the form '...is prime', where the dots indicate the hole into which (in this case) a number-word can be put; or he writes (borrowing from mathematics) 'prime (...)' to indicate the same unsaturatedness. When an unsaturated expression like 'prime (...)' is saturated by an appropriate saturated expression (as is the case e.g. when we complete this expression to get 'prime (3)'), the result will be saturated and can in turn be used to complete another unsaturated expression, e.g. the expression 'not (...)'.

Given this distinction between saturated and unsaturated expressions, the answer to our question about the unity of sentence-meanings is the following: Not all meaningful expressions are names of the usual kind; the incomplete expressions (e.g. the predicate-expressions, or, to use a traditional term, the concept-expressions) do not in the same sense stand for an object as the complete expressions do; there is a basic difference between concept-expressions and object-expressions. So the difference between a shopping list and a sentence is that the first is a concatenation of only and exclusively one kind of expressions

('tomatoes, beans,...'). They do not form a new unit, because not one of them 'saturates' another. A sentence on the other hand is the completion of an unsaturated expression by a saturated one, so that the result is a new saturated unit. Or, put in another way: Unsaturated expressions are by their very nature meant to be completed by saturated ones. So the unity of the sentence stems from a basic difference or asymmetry between *kinds* of expressions, and this asymmetry is adifference on the level of meaning.

The next point to mention about this Fregean approach to sentence meaning is that Frege succeeded to generalize it in such a way that the impression was created that the whole realm of language that is of interest to the logician (i.e. the whole realm of truth and falsity) can be covered by it. Every 'propositional content' (to use a modern term) appears to be able to be expressed by an appropriate combination of complete and incomplete expressions which form ever larger units that are produced by following only very few principles of composition. This generalization is made possible by treating the distinction between proper names and predicate-expressions as being only a special case of the more general distinction between object-expressions and concept-expressions, or, in a terminology borrowed from mathematics, between argument-expressions and function-expressions.[3] To give an example: Frege treats the logical sentence-connectives like 'and', 'or', 'if-then', as functional expressions that are 'unsaturated' and can be completed by sentences to form a new 'saturated' expression, namely, a logically complex sentence. So the general picture emerging here is the following: On the lowest level we have proper names as the simplest argument- (or object-) expressions; schematically indicated by the letters x, y, z,... On the same level we have predicator-terms with

one or more 'holes', expressing concepts (like 'table') or relations (like 'bigger'). They are the simplest functional expressions; schematically we indicate them by writting F(...), G(..,..), etc. With help of these two kinds of expressions we can now form simple sentences F(x), G(x,y), etc.-On the next level we have the logical connectives (e.g.'→', to be read 'if-then') as functional expressions that take as argument-expressions complete sentences; so we get F(x)—G(x,y), etc. These sentences are taken to designate truth values which are interpreted ¿is objects of some sort; so on this level we again have the means to build a unity of meaning by completing an incomplete expression like '.....' by two complete expressions which in this case are sentences.

To some of you this will be very familiar; to some it might be still not quite clear. What I want to make visible in my context is only the fascination that an approach like this can have for a philosopher of language. This fascination stems from the promise that the whole huge realm of descriptive, factual,truth-relevant language can thus be treated in an extremely unified (and insofar in an extremely simple) way. According to this picture all truth comes about by on the one hdind naming an object (or in the case of relations: some objects) and on the other hand predicating something of it (or them). So for all meaningful truth-claims, regardless of the natural language they are formulated in, it must be possible to express them in the sketched form of notation according to very simple and general principles. In modern terminology we would say: It must be possible to give their 'logical form'. Frege called his notation a 'concept script' and regarded it as coming as close to a direct expression of a thought as one could possibly get. If we are confronted with a sentence of a natural language that we cannot

translate into this 'script of pure thought', we either must say that it is nonsense, or that it expresses something different from possible truth, e.g. a promise, a regret, etc. Frege was well aware that these domains of meaningful language are not covered by his concept script, but he never thought of himself as providing a theory of natural language; he only wanted to develop a specialized language for the expression of scientific truth. So from his point of view nothing is missing when his concept script cannot express linguistic acts that are not meant to state facts.

When we now turn to modern philosophical theories of language we find that in those of them, that treat language structure at all, we see the same basic conviction, expressed only in a slightly modified terminology. I will mention here only the theory of speech acts developed by John Searle.[4] I choose his work, because he has been considerably influenced by Wittgenstein, whom I will discuss later, and because his theory in turn has influenced conceptions that are considered (quite wrongly, under the perspective for the current discussion) to be essentially different from those originating in Frege, e.g. the theory of communicative competence by Jurgen Habermas.[5]

Searle's project is to specify in a very general, philosophical way, what kinds of acts are necessary in order to perform meaningful linguistic actions like promising or expressing a truth claim. More specifically, he thinks that without considering the specific syntactic characteristics of any particular language it is possible for the philosopher to establish that all regular kinds of propositionalcontents are constituted by two kinds of speech acts: by the acts of referring (naming) and predicating. So in a way that is parallel to Frege's development of a concept script, Searle offers a 'standard form' of notation for all explicit speech acts, and he thinks that all meaningful

utterances can be shown to satisfy it, if they are made explicit. Additionally to this quite traditional move he takes one new step: He adds to the notation of the propositional content (the nucleus of the traditionally so called 'logical form') a symbol for the communicative role or 'illocutionary force' of the utterance. So as a result we have the following 'standard form' for all explicit utterances of any kind: *(RP). The asterisk indicates the place for an illocutionary force indicator like '?', '!' , etc., and the letters 'R' and 'P' indicate the places for referring and predicating expressions, respectively. So Searle's '(RP)', is a notational variant of the most basic form of Frege's 'F(x)'.

From Searle's point of view, then, it is consistent to call the expressions of natural language 'realizations'of the act types specified by him as a philosopher. These realizations are expected to be different from each other on the level of so called 'surface grammar', but not on the 'deep' level, which for Searle is the level of the linguistic acts performed by uttering the expressions. On the 'deep level' exhibited by his standard notation any two intertranslatable utterances are taken to be of the same form. So the level of 'pure' or 'abstractly expressed' speech acts in Searle's theory plays the same role that in the philosophical tradition was played by 'pure thought': Philosophers used to imagine that we have in our minds, or grasp with help of our minds, the same thoughts, that could in principles be mirrored truthfully by an especially invented notation like Frege's concept script. Our actual formulation in our different languages are then seen as so many deviations or idiosyncratic 'realizations' of a pure original in the medium of thought. The same idea informs the more traditional interpretations of the concept of the 'logical form' of a sentence and the correlated idea of a 'logical syntax'.

2. Challenges to the tradition: (a) Constructivist philosophy of language

I think that it is historically fair to say that the fascination of this idea of a 'language behind all languages', and consequently of the possibility of a 'pure' or 'ideal' language, is largely based on logical and epistemological motives. The idea of a grammar-book that would enable us to clearly distinguish sense from nonsense and logically correct from logically incorrect inferences, goes at least back to Leibniz and was in our century taken up with enthusiasm by the Logical Empiricists. Rudolf Carnap even thought that it should be possible to mechanically sort out sense from nonsense.[6] The early Wittgenstein started out with an a-priori conception of language also. He tried to formulate general features that all languages must necessarily have in common in order to be able to represent something. Only later did he see that his ideas were the expression of a preconception about language and not a result of a careful study of the phenomena. And in his later work he tried to free himself from this preconception.

How then can we get rid of the preconceptions of the logical tradition? I want to discuss here two main steps: The first is the recognition that there are no reasons for a philosopher of language to allow only one type of complex-building in language, as Frege did. The schema of an object falling under a concept does not have the privileged status that Frege thought it has. The second step is the recognition that in natural languages one and the same complex-building device (e.g. the object-concept schema) has different meanings. This is the phenomenon I will discuss in the next section under the name of a 'syntactic metaphor'.

So let us consider the first step. If, in an effort to free ourselves from the fascination of the expected results of a theory with

the simplicity and the encompassing character of Frege's, we look whether there are compelling philosophical arguments why the whole of fact-stating language should exhibit the object-concept structure, we will find that there are none. Davidson e.g. gives only external reasons: *If* it is our goal to be able to draw logical conclusions mechanically and to make entailment-relations graphically visible, *then* best means known for this end is to rewrite the sentences of the natural language under discussion in the forms prescribed by predicate logic.[7] His further claim, that the result of this rewriting is a 'theory of meaning' for natural languages seems to me to be quite undefensible, - an issue that I cannot get into on the present occasion.[8]

One school of thought that has questioned the universality of the object-concept structure and has developed alternatives is the German 'Constructivist' school founded by Paul Lorenzen and Wilhelm Kamlah in Erlangen in the nineteen sixties.[9] The philosophers working together in this context made a comprehensive effort to work out clearly and pragmatically controllable foundations to the sciences and the humanities without positivistic or empiricist restrictions. One part of these efforts was the construction of a language suitable for this task. Most of the elements in this construction were already available, but among the original contributions is the questioning of the uniqueness or privileged position of the object - concept structure.

As an illustration consider the case of an adverb like 'slowly' in the sentence 'Jones buttered a toast slowly'. In a famous paper about the logical form of action sentences[10] Donald Davidson raised the question: What is the object about which a speaker of this sentence is predicating something with the word 'slowly'? The background assumptions for this question are Fregean in character: All reason-

able truth claims must have the form of something (some concept-expression) being predicated of some object. So if the cited sentence can be false in such a way that Jones is buttering his toast not slowly but in a hurry, there must be a truth claim expressed with help of the word 'slowly', and so there must be some object about which the speaker says that it is slowly. Davidson's proposal for a solution was to say that this object is the 'event' of Jones' buttering; about this event we say that it is slowly. So the logical form of the sentsnce must mention not only Jones and the toast as objects, but as an additional object the event of Jones' buttering the toast.

From a constructivist perspective this solution is regarded as a consequence of either a traditional preconception, namely that all truth claims *must,* on a 'deep' level, be of the form 'object expression + predicate expression' or of the tacit assumption, that only the interests of formal logic can provide guidelines for a 'correct analysis' of the meaning of sentences formulated in a natural language. On both counts, all appearances of other forms are regarded as surface phenomena, and it is posited that it will always be possible to reveal by analysis the object-concept structure; however it is 'realized' by the particular means of a particular language.

Constructivist neither share the traditional assumption (as it is exhibited in Searle's writings) nor the conviction that the formal necessities of 'mechanizing' logical deductions are what should guide a theory of meaning. Consequently they regard 'events' as artificial entities, i.e. as 'secondary' objects in the sense that our understanding of them depends on specific grammatical possibilities of the specific natural language we are speaking, namely nominalizat.ion. As an alternative account they offer the following picture, which

is to my mind much in the spirit of the later Wittgenstein.[11] In order to understand language structure we have to imagine a process, in which at first very simple language games are played that in a succession of stages of enrichment gradually become more and more complex. This process of adding more and more linguistic elements to get higher and higher complexity is called a 'construction', and from the same process in the field of the foundations of mathematics the term 'constructivism' is taken. The criterion of rationality for a construction is not a preconceived idea about 'logical form', nor a doctrine of logical atomism or a sense-data empiricism. Instead, it is the requirement to make clear from step to step, what constitutes an explanation of the respective new step. And it is required that all steps can be fully explained and/or practically taught in the constructed order without relying on something still in need of explanation, i.e. without circularity.

So in the case of the adverb 'slowly' the constructivist sees no reason not to allow a three-word sentence of the form "Jones buttered (the) toast' to be expanded by the new element 'slowly'. What for him is important in this step is only to demand a clear understanding of the kind of change that the added word makes for the old type of speech act (performed with the unexpanded sentence). And such a clear understanding can be accomplished without postulating an object *about* which the speaker is predicating something with help of the word 'slowly'.

The case is parallel to one discussed by Wittgenstein in the 'Philosophical investigations'. There he starts out with a simple language game for the ordering of building-material, and then, in a further step, enriches it with numerals. [12] So the people engaging in the game cannot only call out 'slab' or

'brick', but also complex utterances like 'two slabs', 'five bricks', etc. What is important for Wittgenstein in this context is the following: In order to fully and completely understand the complex form of the game, it is not necessary to assume the existence of particular objects ('the numbers'), of which one would want to say that they are what the number-words stand for (or about which one is predicating something with help of these words). One the contrary, making the function of these different kind of words *look* like the function of ordinary proper names (or concept words! would only confuse the picture. So in this case (as in the case of adverbs), the new step in the development of the language game can be understood without positing ox~ 'assuming' new objects falling under concepts and thereby making possible truth and falsehood. The descriptively used utterance '(these are) five slabs[1] can be true without there being an object that is either named by the word 'five' or falls under a concept expressed by it.

3. Challenges to the tradition: (b) The later Wittgenstein and the concept of syntactic metaphor

The result of the preceding section can be put into the following form: As far as the philosophy of language is concerned and not the technical interests of the logician, we are well advised to take into account more schemata for sentence-composition than the single one traditionally preferred by logicians, the schema of an object falling under a concept. The argument that will lead us now to the concept of a syntactic metaphor is closely related to this point. It is an observation made (in the philosophical context) by Ludwig Wittgenstein, and it can be formulated in this way: The complex - building .devices of natural languages typically have more than one meaning, and this

is even true for those devices that appear to be undistorted and straightforward 'realizations' of the concept-object schema. The same point formulated from a diachronic perspective that constructs language games by (as Wittgenstein formulated) "gradually adding new forms"[13] can be expressed as follows. In order to understand language structure, it is plausible to offer a reconstruction that begins with one particular function or meaning for one particular complex-building device. But what we then can easily imagine as a 'natural' next step is that this linguistic device is transferred to new and different contexts in order to do new work, i.e. to express a new semantic relationship. Like in traditionally so called metaphor, new domains of use are opened up, so that the syntactic side of language, the side concerned with sentence-building, is as impregnated with metaphor as the lexical side.

For linguists this should be familiar and not surprising, but it is quite disturbing and unfamiliar for philosophers. A linguist may think e.g. of the one genitive-construction in the phrases 'the baker's car', 'the baker's bread', 'the baker's wife' and 'the baker's death'. Grammatically these phrases are parallel, but the contents expressed by these genitive-constructions, the kinds of relatedness they express, are different in each case: The car is a possession, the bread a product of his work; both is not true either of his wife or of his death. So we have one syntactical construction with a plurality of meaning. This plurality can diachronically be conceived of as having developed from one original meaning. And it is this perspective of a constructed development (that does not by itself make empirical claims but serves as an object of comparison, a conceptual background for empirical work) that invites the term 'syntactic metaphor'.

In the philosophy of language facts of this

kind, are less familiar as they surely are among linguists. When Wittgenstein points to the very different uses we make of the object-concept schema and when he warns that we should not take it for granted that all propositional contents of any linguistic expression can be given naming an object and then predicating something about it, he has been interpreted by Michael Dummett as denying the possibility of a systematic study of meaning.14 This shows that he opposes very deep convictions in the traditional *philosophical* approach to linguistic meaning. Wittgenstein makes his point in the following way:

> "'But when I imagine something, something certainly *happens!*' Well, something happens - and then I make a noise. What for? Presumably in order to tell what happens. - But how is *telling* done? When are we said to *tell* anything? - What is the language-game of telling?
> I should like to say: you regard it much as a matter of course that one can tell anything to anyone. That is to say; we are so much accustomed to communication through language, in conversation, that it looks to us as if the whole point of communication lay in this: someone else grasps the sense of my words - which is something mental: he as it were takes it into his own mind. If he then does something further with it as well, that is no part of the immediate purpose of language.
> One would like to say "Telling brings it about that he *knows* that I am in pain; it produces this mental phenomenon: everything else is unessential to telling.' As for that this queer phenomenon of knowledge is - there is time enough for that. Mental processes just are queer. (It is as if one said: "The clock tells us the time. *What* time is, is not yet settled. And as for

what one tells the time for - that doesn't come in here.')"[15]

What Wittgenstein is questioning here is that all of our talk that grammatically appears to be about 'inner objects' really is about any objects at all. His example is an expression like 'I imagined the house to be much bigger', and he is casting doubt on the interpretation that with help of such a sentence we *refer* to an inner action or process, *about* which we then tell something. ('There was an act of imagining, and it had the following characteristics...') His doubts (or stronger: his denial that the speaker, by uttering such a sentence, refers to a peculiar process as the referent required for the logical form of this utterance) Wittgenstein expresses by rhetorically asking: "Am I remembering a process or state? When did it begin, what was its course, etc.?"[16] Reflection shows that by using the expression we do *not* refer to a process or state. So the syntactic form 'I+verb+direct object' ('I imagined the house') is used in a context where it does not mean what it 'normally' means: That the person mentioned has been engaging in a particular activity' directed to, or making use of an object. In this sense the verb-form is used metaphorically. What is communicated is seen or treated linguistically as if it were an action. And Wittgenstein thinks that many traditional philosophical problems orginated in the mistake to take the grammatical forms at their face-value, e.g. by starting inquiries about the hidden mental processes that expressions like the one cited seem to be talking *about.*

The philosophical school of Logical Empiricism thought that in cases like this the philosopher should be able to find out what these sentences are *really* about: What is the logical nature of talk about 'inner states'; is it 'really' talk about e.g. future behavior?

These philosophers thought e.g. that sentences about numbers are really sentences about classes; so for them the object—concept schema was presupposed, it was not questioned in its role to be the *one* form into which all reasonable truth claims have to be able to be transformed, thereby exhibiting their real or logical structure that in the corresponding expressions of a natural language so often cannot be recognized. Contrary to this view Wittgenstein recommends to ...make a radical break with the idea that language always functions in oneway, always serves the same purpose: to convey thoughts - which may be about houses, pains, good and evil, or anything else you please."[17]

To follow this advice to my mean.- to acknowledge the phenomenon of syntactic metaphor. For the branch of philosophy that is working in the tradition initiated by Frege, such a step would amount to a substantial liberation, a broadening of views. It would overcome the preconception that the paradigm-case for all rational uses of language is our talk about 'middle size dry goods' as the British philosopher Fergus Kerr ironically has put it. What this means for fields like aesthetics or religion has yet to be spelled out; and the same is true for the project of a comprehensive theory of meaning. As far as this latter field is concerned, I do not think that taking Wittgenstein seriously leads to relativism, to unsystematic thinking and to an 'anything—goes[1] approach. But this, as I said, would have to be shown in detail.

Instead of speculating about these future developments I would like to conclude my exposition by trying to answer one more question. If for a moment and for the sake of argument we take the phenomenon of syntactic metaphor to be well established: How can we explain the intuitive appeal of a system like Frege's, in which all propositional contents, i.e. all contents that can meaningfully be combined with

a truth claim, can be formulated in such a way that the formulation shows the object-concept form? In order to be certain about the advence in Wittgenstein's thought we have to be able to understand the fascination and the intuitive appeal of the conceptions he tried to overcome.

I think there are two answers to this question. The first is that the grammar of our own language (at least this is true for English and German) allows us unlimited nominalizations. Everything we want to express can therefore be given a form in which a (possibly complicated) predicative expression is asserted to be true of 'an object': of something that seems to be nemed by the nominal expression that functions as the subject of the sentence. Davidson's 'events' are a pertinent example; numbers and virtues, to mention just two more, may be other examples.

The second answer is that formal logic has the specific interest of 'analyzing' sentences in a very particular way. It wants to provide for all contents formulations, in which all of the *partial* truth claims of an utterance, i.e. *all* ways in which it can be false, show up in a uniform and graphically visible way. So the ideal of logic is a language in which every single truth claim can be detected with help of the *form* of the expression used for making the claim. If this is the goal of language-analysis, it is indeed necessary to introduce a special notation that assimilates all expressions to each other, presses them all into one form. But this necessity stems from the goal of operating a calculus. To pursue this goal, however, does not at the same time and automatically lead to deep insights into the 'secretworkigs' of natural language.

N O T A S

* This is a revised version of a paper I had the honour to present at C.E.L.E. on June 15, 1989. I would like to take the opportunity to thank my hosts for their invitation and the Instituto Goethe, A.C., México, for the support provided on this occasion.- For a more detailed account of some *philosophical* questions cf. my article 'Syntactic Metaphor. Frege, Wittgenstein, and the Limits of a Theory of Meaning', *Philosophical Investigations*, forthcoming, and my forthcoming book *Phantasie und Kalkül*.

1. Ludwig Wittgenstein, Philosophische Untersuchungen / Philosophical Investigations, New York 1953; paragraphe 1. Henceforward quoted as 'PI'.

2. G. Frege, Funktion und Begriff; in; Frege, Funktion, Begriff, Bedeutung. Fünf logische Studien, ed. G. Patzig, 2nd. ed. Göttingen 1966.

3. G. Frege, loc.cit.

4. John Searle, Speech Acts. An Essay in the Philosophy of Language, Cambridge 1969.

5. Jürgen Habermas, Theorie des kommunikativen Handelns, Frankfurt 1981.

6. R. Carnap, Überwindung der Metaphysik durch logische Analyse der Sprache, Erkenntnis 2 (1932) , 219-241.

7. D. Davidson, Reply to Cargile; in: Davidson, Essays on Actions and Events, Oxford 1980, 137-146.

8. But see my forthcoming book, mentioned in footnote '*'.

9. Cf. e.g. W. Kamlah, P. Lorenzen: Logische Propädeutik, Mannheim 1967; Lorenzen, Normative Logic and Ethics, Mannheim 1969; J. Mittelstrass (ed.), Enzyklopädie Philosophie und Wissenschaftstheorie, vol. I Mannheim 1980, vol. II Mannheim 1984.

10. D. Davidson, The Logical Form of Action Sentences, in: Davidson, loc.cit. -105-122.

11. Cf. P. Lorenzen, Lehrbuch der konstruktiven Wissenschaftstheorie, Mannheim 1987. For another "Wittgensteinian' interpretation of constructivist thinking cf. H.J. Schneider, Wenn/dann-Verbindungen in der Logik und in der natürlichen Sprache. In: Schweizerische Naturforschende Gesellschaft (ed.), Jahrbuch 1982/1 Basel 1986, 81-188.

12. PI paragraphe 8.

13. L. Wittgenstein, The Blue and Brown Books, 2nd ed. Oxford 1969, 17.

14. M. Dummett, Frege and Wittgenstein; in: I. Block (ed.), Perspectives on the Philosophy of Wittgenstein, Oxford 1981, 31-42.

15. PI paragraphe 363.

16. PI paragraphe 661.

17. PI paragraphe 304.

18. Fergus Kerr, Theology after Wittgenstein, Oxford 1986.