

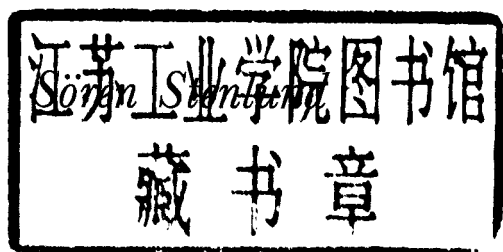
LANGUAGE AND PHILOSOPHICAL PROBLEMS

Sören Stenlund

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PREFACE

This book consists of three parts. Each part is not a chapter in a systematic exposition, but is rather an essay which can be read independently. The three parts treat of common problems in different guises however, and in that way they complement one another. A theme common to all three is our tendency to be misled by certain prevalent views and preconceptions about language. Another aspect shared by the essays is that their way of dealing with the respective issues they treat is the same.

What I am presenting in this book is not only the results of philosophical investigations but also a way of thinking in approaching and resolving conceptual and philosophical problems, in particular problems that arise through the transgression of the limits of the use of various technical notions and methods. As is shown by many examples throughout the book, it turns out that more problems are of this kind than we are at first inclined to expect.

This common source of several, *prima facie* different, kinds of problems is concealed by some of the traditional ways in which philosophical problems have been classified, and by the received ways of subdividing the subject matter of philosophy. In order to show this, a good number of issues from different areas of philosophy have been treated, including issues from the philosophy of language, mind, logic, and mathematics, even though this has meant that some of them could only be discussed briefly.

I have benefited from many sources in the work which has resulted in the thoughts presented here, not least from the writings of the philosophers whose ideas I subject to criticism. But my one most important source of inspiration has been the work of Ludwig Wittgenstein. It is perhaps correct to say that most of what I have written consists of applications or elaborations of thoughts that can

PREFACE

be found, in one form or another, in Wittgenstein. But I am making no exegetical claims. The question of whether, and to what extent, my results find support in Wittgenstein's work is not important for what I have to say in this book. What is important are the problems discussed and the ways suggested for resolving them.

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CONTENTS

<i>Preface</i>	vii
1 LANGUAGE, MIND, AND MACHINES	1
1 <i>Introduction</i>	1
2 <i>The notion of natural language</i>	4
3 <i>Conceptual investigation</i>	7
4 <i>Language as a 'universal medium'</i>	9
5 <i>Linguistic communication and solipsism</i>	14
6 <i>The mental and the physical</i>	17
7 <i>The idea of artificial intelligence</i>	22
8 <i>Machine behaviour and human action</i>	25
9 <i>Turing's test</i>	30
10 <i>Calculation versus mechanical symbol manipulation</i>	37
11 <i>Deceptive criticism of AI</i>	40
12 <i>Different senses of 'action'</i>	45
13 <i>Logical rules and conditions</i>	48
2 NOTIONS OF LANGUAGE AND THEORIES OF MEANING	55
1 <i>A priori theories of meaning versus naturalistic theories of language</i>	55
2 <i>Theory of meaning versus conceptual investigation</i>	60
3 <i>Confusion of the perspectives of linguistics and philosophy</i>	65
4 <i>Some philosophical prejudices</i>	70
5 <i>Languages with 'specified structure'</i>	73
6 <i>Form and content of sentences</i>	78
7 <i>The notion of literal meaning</i>	85
8 <i>Indeterminacy of the form of expressions</i>	91
9 <i>Idealization in science and philosophy</i>	97
10 <i>Sentences of a language versus formulas of a calculus</i>	101

CONTENTS

11	<i>Language-learning and rule-following</i>	109
12	<i>The dispute over realism in mathematics</i>	121
3	FORM AND CONTENT IN MATHEMATICS	131
1	<i>Word-language and mathematical content</i>	131
2	<i>The transfinite as an idealization</i>	137
3	<i>Mathematical reality</i>	142
4	<i>Potential infinity</i>	146
5	<i>The finite and the infinite</i>	151
6	<i>Form, function, and generality</i>	158
7	<i>Mathematical induction</i>	167
8	<i>Numbers and numerals</i>	177
9	<i>Languages and formal systems</i>	183
10	<i>Computability and decidability</i>	195
	<i>Notes</i>	209
	<i>Bibliography</i>	223
	<i>Index</i>	227

LANGUAGE, MIND, AND MACHINES

1 INTRODUCTION

There is a prevailing tendency in current philosophy and linguistic theory to forget the difference between a theoretical representation and what it represents, to conflate the rules that govern technical notions and methods in current theorizing about language with the rules of our language as they are manifest in our use of language in ordinary situations. The more established certain technical notions and methods tend to become, the more instinctive this tendency becomes and, as a consequence, questions of the correctness and of the limitations of the technical terms and methods are not raised. The limits of the applicability of the technical terms and methods are taken to be the limits of language. Notions of language connected with technical and formal methods are treated as fundamental.

This tendency is most problematic and seductive when the technical notion consists of a *technical use* of a familiar word or phrase (such as 'language', 'sentence', 'name', 'is true', 'refers to', 'interpretation', 'meaning', etc.) which already has an established non-technical use. Formal similarities between the technical and the non-technical uses – which may have inspired the new notion – may then make it appear as though the technical notion were not a construction, not a new concept, but something inherent in the old notion, something which has now 'been made explicit'. The rules defining the technical notion are erroneously treated as principles of the (hidden true) nature of the old notion. And this confusion is reinforced by the employment of the same familiar word in these two conceptually different forms of use.

This is how several problematic concepts and methods of

contemporary linguistic theory and philosophy have originated in mathematical logic and meta-mathematics. Crucial for this influence of formal logic on linguistic theory was the adoption of the *linguistic perspective* in meta-mathematics, i.e. the idea of conceiving certain mathematical calculi as formal *languages*. This point of view stimulated the introduction of linguistic terminology into meta-mathematics, for instance the use of the word 'language' in terms like 'meta-language' and 'object-language', and terms like 'expression', 'form', 'meaning', 'interpretation', 'translation', 'syntax', 'semantics', 'denote', 'use', 'mention', 'proposition', 'assertion', etc. These terms were, however, given a new, technical use in meta-mathematics, a use which was governed for the most part by the efforts of mathematical logic, and these efforts consisted essentially in the construction and study of various *mathematical* calculi, such as the predicate calculus, by means of *mathematical* methods, and employed the 'idealizations' characteristic of mathematical work.

As a result of having uncritically brought this technical use of traditional linguistic terminology back into the study of real languages, modern linguistic theory and philosophy of language is dominated by a view of language that one might call the *calculus conception*, i.e. the view of language in general as a calculus or formal system similar to the systems of formal logic. It is in the context of this view that the new technical uses of linguistic terms appear to be unproblematic and even justified when applied to ordinary languages.¹ The important and difficult thing to understand about this calculus conception is how it manifests itself as a fundamental conception in the use of familiar words from traditional linguistic prose and ordinary discourse, and not so much in the explicit use, which also occurs, of mathematical notation and techniques.

It is therefore also important to distinguish between the calculus conception as a paradigm for a technical, scientific methodology (e.g. for so-called model theory and formal semantics), and the same conception as a fundamental conception of language. As a scientific methodology, as a paradigm for constructing models of various linguistic phenomena, it has its limitations (as have all scientific methods), and its applications have to be justified by their success in solving scientific and technical problems. As such it has indeed been successful, not least within the development of computer science and the construction of techniques for 'natural language processing'. But this success in the application of these

scientific methods and principles does not justify taking them as general *normative* principles, and that is what is involved in the attitude towards the calculus conception as a *fundamental* conception. The rules determining the technical use of words like 'language', 'expression', 'sentence', 'proposition', 'reference', 'interpretation', etc., which were originally adapted to the study and the description of formal systems, are taken without investigation or justification to be appropriate for the description and study of language in general. In this way the scientific methods, notions, and techniques acquire the role of a 'philosophical methodology' with the claim to being the appropriate tool for answering philosophical questions on the nature and function of language through the construction of theories of meaning, theories of speech-acts, theories of language learning, and so on. But in this way the conceptual confusions are only increased. For instance, on the basis of the notion of a linguistic expression originating in meta-mathematics it becomes a major problem 'how purely physical sounds issuing from the mouth of a speaker can mean something, can express thoughts and intentions', and on the basis of the calculus picture of a language, it becomes something of a mystery, in need of theoretical explanation, how it is possible that people can understand sentences which they have never actually seen or heard before.

The difficulty with philosophical problems of this kind is to resist the temptation to treat them as scientific problems to be dealt with by theory construction and theoretical explanation, because even if such an approach may lead to good and useful technical results (as by-products), it will (for that very reason) conceal the conceptual confusion which is the cause of the *philosophical* problems. What will solve them is *conceptual clarification* of the basic notions and not additional constructions and new technical notions developed on the basis of the ones that are not sufficiently understood.

In this book it will be shown how various manifestations of this calculus conception are at the root of several conceptual and philosophical problems of current interest. It will be seen that many of these conceptual problems have roots crossing the current classification boundaries of a variety of philosophical problems. As a consequence, this study will be devoted to related problems in the philosophies of language, mathematics, and mind, and in the philosophical discussion of Artificial Intelligence.

2 THE NOTION OF NATURAL LANGUAGE

What then is involved, more specifically, in the calculus conception as a *fundamental* conception² of language?

- 1 It manifests itself in a characteristic use of the term 'natural language'. Natural languages are conceived as being 'in principle' formal languages. (This is explicit, for instance, in Davidson's and Montague's writings.)
- 2 Separation of form and content, expression and meaning. It is supposed to be possible to give (at least in principle) a specification of all the external features of the expressions of a language that are relevant to their meaning without referring to or presupposing the meaning or the use of the expressions in this specification. Considerations of meaning and use may be necessary to *finding* the specification, to isolating the relevant features of an expression, but once they are found the specification can be stated and understood 'in abstraction from content and use'. (I call this the *external* or *mechanical* notion of the form of an expression and its use, and I shall contrast it below with what I call the *logical form* of an expression and its use. This notion of logical form is not to be confused with the form of an expression as represented by means of the methods of *formal* logic, by means of formalization, which is an instance of external form.)
- 3 The relation between a language and its use in real-life situations is taken to be of the same kind as the relation between a calculus or theory (such as the probability calculus) and its application. Language is exhaustively defined *as language* through its syntactical and semantical rules. The pragmatic rules, the rules for the use of a language in real situations, are determined on the basis of its syntax and semantics, which are therefore supposed to be conceptually prior to and independent of the pragmatic rules.

This could be stated more generally as follows: the logical grammar of the expressions of a language are supposed to be *formally* specifiable (with the notion of 'form' as mechanical form), i.e. the conditions for the use of an expression are supposed to be specifiable uniformly within some systematic framework external to the situations in which the conditions obtain.

- 4 Molecularity. There is something which constitutes the 'basic semantical units' or the 'molecules' of language (usually it is the sentences of the language). Meaning is determined uniquely by the notion of a certain form of these molecules. (If e.g. the mol-

- ecules of language are sentences there is supposed to exist a formally specifiable notion of sentencehood, or of the syntactical form of sentences, on the basis of which meaning is determined.)
- 5 Features depending on the more specific notion of a calculus as a *calculus of functions* (like the predicate calculus).
- (i) Compositionality, or more generally: the notions of 'constituent', 'part/whole', 'simple/composite' are used with the functional notation of mathematics as a paradigm. The grammar of these notions is the grammar of the mathematical use of these expressions.
 - (ii) 'Determination' and 'dependence' as functional, i.e. the notion '... is determined by ...' used in this theorizing on language is conceptually of the kind that is expressed by a mathematical function (even when it is not explicitly expressed in mathematical notation).
 - (iii) Logical form is in general represented by means of functions. (This itself is a cause of much conceptual confusion. There is, for instance, no room for internal relationships and logical dependences in contrast to functional relationships. The notions of dependence on situations, context dependence, and so on are construed as functional dependences.)
 - (iv) The notion of a rule that is used is the mathematical or algebraic notion (as when it is said that by means of the syntactical rules infinitely many sentences can be generated).
 - (v) The notions of 'finite', 'infinite', 'sequence', 'string', etc. that are used in this theorizing on language are the ones that we normally employ in connection with mathematical calculi.

More generally, the kind of 'idealization' or 'abstraction from physical and practical circumstances' that is typical of mathematical work, is taken for granted as appropriate also in the study and the description of the nature of language, which means of course that such physical and practical circumstances are considered inessential to language as language. So *to the calculus conception as a fundamental conception there belong definite attitudes to and presuppositions about the essence of language in general.*

The term 'natural language' is used in opposition to the terms 'formal language' and 'artificial language', but the important difference is that natural languages are not *actually constructed* as artificial languages and they do not *actually appear* as formal languages. But they are considered and studied as though they were formal

languages 'in principle'. Behind the complex and the seemingly chaotic surface of natural languages there are – according to this way of thinking – rules and principles that determine their constitution and functions; and it is assumed that this hidden structure can be presented as a theory similar to the syntactic and semantic theories of formal systems – with the difference that such a theory will be enormously more complicated, so complicated in fact that we can never hope actually to construct one for more than fragments of a natural language.

What this attitude amounts to *in practice*, in the practice of constructing theories of language (where it does mean something specific), is the following: there are no conceptual limitations to the applicability of the methods and concepts adopted in the description of formal systems to the study of languages in general. The limitations that exist concern only technical and empirical matters and differences in degree of complexity.

To use the term 'natural language' as it is employed in current philosophy of language is essentially to commit oneself to this dogma. And to say in this use that 'a natural language is not a calculus or formal system' tends to mean that natural languages do not present themselves as formal systems and they did not originate as artificial languages. To that everybody will of course agree. But the statement will not be understood as questioning the calculus conception as a fundamental conception, precisely because it is taken as fundamental.

As regards the current use of the term 'natural language' one could also say that it presupposes a general notion of language under which both natural and artificial languages fall. What then is the common idea of language here? It seems to me that this common idea, in its most general form, is the following: a language is determined (or given) by its vocabulary (its lexicon) and grammar, or – through the influence of meta-mathematics and logical semantics – by its syntax and semantics.

This, however, is an answer to the question: 'What is the general idea of language in traditional linguistic theory?', or 'What, according to traditional linguistic theory, would the common idea of giving a (complete) description of a language amount to?' The essential and common feature of languages in general is identified with the paradigm of traditional theorizing about language. In much current linguistic theory this takes the form of conceiving a language as 'being ultimately' a formal system.

3 CONCEPTUAL INVESTIGATION

If we disregard the use (or family of uses) of the word 'language' in traditional and current linguistic theory, and look at languages, not as empirical phenomena to be scientifically explained, but as they present themselves in life, in their use in human affairs in general (i.e. not only in the human activity of theorizing about language), we find features that are much more fundamental. We find, for instance, that language appears as various forms of linguistic communication between human beings. Language is connected to communication and this connection is not just an empirical or historical fact, it is a *conceptual* connection. The ideas of language and communication are inseparable in a sense which makes it misleading to say that the main purpose or the ~~main~~ function of language is communication between human beings — misleading because it invites the view of language in general as an invention, as something that was constructed (like a nomenclature, a technical terminology or a formal system) for a particular purpose; and it suggests that it would have been possible to have the idea of communication (of thoughts, ideas, information, messages, requests, moods, etc.) without having the idea of language. But our concept of communication extends as far as language.

In recent so-called pragmatics and speech-act theory the importance of the 'communicative aspect of language' is in a certain sense recognized, but only as an additional aspect, neglected in traditional linguistic theory. Its conceptual importance is not recognized. The theories of pragmatics attempt to supplement the view of language of traditional grammar and formal logic by accounting for linguistic phenomena where the traditional view deviates from actual linguistic practice. The various features of linguistic communication and of our use of language are considered as empirical phenomena to be explained theoretically and accounted for on the basis of a picture of a language as being fundamentally a complicated (formal) system. The use of linguistic expressions in communication is conceived as being the ('tacit') application of a system of specifiable rules and principles.³

In such a theoretical attitude linguistic practice is conceived as an object to be scientifically explained or an empirical phenomenon to be accounted for on the basis of a surveyable system of fundamental principles which acquire a normative (and sometimes metaphysical) role as regards language in general. In the conceptual

investigation, as conceived here, the focus of interest lies in language as it is given in our use of it in the various circumstances in human life, and description replaces theoretical explanation and theory construction. This rejection of the absolute, normative role of the principles of a theoretical methodology does not involve denying the existence of a conceptual and logical order of language, but it involves the rejection of the (preconceived) idea of a synoptic view of this logical structure. It therefore also involves the rejection of the idea of a complete formal specification of the logical structure of (parts of) a language.⁴

The logical structure of language of interest in this conceptual investigation exists only to the extent that it is *completely* manifest in linguistic practice, in the forms of use of linguistic expressions in human circumstances. This means that the kind of 'idealizations', simplifications, and generalizations characteristic of theory construction and theoretical explanation have no place in our description of the forms of language. If theoretical notions and techniques are employed, it is only for descriptive or comparative purposes, never for those of explanation.

The confusion of description and explanation is a source of the most common misunderstandings of the results of conceptual investigation. Through the predominance of the theoretical attitude, descriptions of conceptual relationships tend to be read as theoretical generalizations or as ideas and suggestions to be developed into precise theoretical principles. The facts of actual language use are not allowed to speak for themselves. They are conceived in the theoretical attitude either as evidence for, or as counter-examples to, some general thesis about language. The results of the conceptual investigation, as conceived here, can be understood only to the extent that the ~~described~~ features of language can be experienced or recalled as facts of our own linguistic practice, and not as instances of some theoretical thesis about language. The act of reflection, or rather of unprejudiced observation, required here is foreign to the theoretical attitude.

Characteristic of the theoretical attitude is the conception of philosophical investigation as being the most general and the most 'abstract' of intellectual investigations, or as being concerned with some of the most abstract aspects of reality. There is a sense in which it could be said, contrary to this, that philosophical investigation – as conceived here – is the most concrete study, a study of that which is nearest the ground.

The present conceptual investigation is not a new philosophical view, but is rather the ordinary non-philosophical 'view' of the facts of our use of language *employed* for philosophical purposes.

4 LANGUAGE AS A 'UNIVERSAL MEDIUM'

Jaakko Hintikka has introduced a notion of 'language as a universal medium', which he contrasts with the idea of 'language as a calculus'.⁵ This contrast has some features in common with my contrast between the calculus conception as a fundamental way of viewing language as a whole, and as a particular scientific approach to the study of language, but there are also important differences. According to Hintikka, it is characteristic of the universalist view that 'you are a prisoner . . . of your language. You cannot step outside it, you cannot re-interpret it in large scale, and you cannot even express its semantics in the language itself.' In contrast, 'the possibility of varying in a large scale the interpretation of the language in question, be it natural or formal' is the characteristic feature of the view which Hintikka calls 'language as a calculus'.

Here Hintikka is taking feature (3) in my list of characteristic features of the calculus conception as *the* characteristic one. In order to 'vary the interpretation of a language in large scale' in the sense of model theory, i.e. to conceive the constituents of a language (its words and sentences) as arguments of a function yielding an interpretation, it is clear that one must presuppose that the features of a linguistic entity relevant to its meaning are formally specifiable. It must be made clear on what features the function that assigns interpretations depends. The dependence of content on form is conceived as an external (functional) dependence.

It could also be said that feature (3), the possibility of specifying within an external systematic framework (i.e. by some method for formalizing or paraphrasing) the features of an expression relevant to its meaning, is precisely what is involved here in being able to 'step outside' a language.

Hintikka's contrast is, it seems to me, misleading when he mentions Frege, Russell, the early Wittgenstein, and the early logical empiricists as belonging to the universalist tradition. What one would expect from this distinction as a *contrast* is that language, conceived as a universal medium, is not at the same time conceived as a calculus. But that is precisely what Frege, Russell, and the early Wittgenstein do. The idea of language – from a logical point

of view – as one universal calculus is a much more accurate description of the views of these philosophers. The later Wittgenstein even states this explicitly as his main mistake in the *Tractatus*. So it seems to me that the notion of ‘the calculus conception as fundamental’ is more appropriate in characterizing these philosophers.

As I shall try to show in the present work, this view of language does not belong only to the past, but is still highly alive in modern theorizing about language. The main difference between Frege, Russell, and the early Wittgenstein and later philosophers in the same tradition, is that the former were much more concerned with and conscious about the philosophical and conceptual presuppositions of their own theorizing about language. This conceptual self-consciousness reached such a height in the *Tractatus* that Wittgenstein was subsequently forced to realize the incoherence of the calculus conception as the fundamental conception of language. It was seen to be a confusion of different kinds of problems – philosophical-conceptual problems and technical-scientific ones.

According to Hintikka, the universalist conception of language of Frege and others was a great hindrance to the development of model-theoretic semantics, and it was through the achievements of Hilbert, which led away from the universalist view and towards the calculus conception, that the way was prepared for the later development of model theory. It seems to me that this is correct; nevertheless, I would describe the situation differently. It was certainly true that the idea of the logic of language as a universal calculus (a universal *Begriffsschrift*) was a hindrance both to philosophy and to formal logic as a technical (mathematical) science, being, as it was, a confusion of *these two things*. Hilbert was more of a mathematician, more of a scientist, than he was a philosopher, and his achievement consisted to a great extent in extracting and making explicit the technical, scientific, and mathematical content of the universalist calculus conception (of Frege and Russell). Hilbert was clearly ignorant of many of the philosophical puzzles that deeply worried Frege.⁶ This is evident in the published correspondence between the two. So it is beyond doubt that Hilbert’s work was decisive for the development not only of model theory, but of mathematical logic in general (with the emphasis on ‘mathematical’). This technical-scientific progress had its price, however – a price that philosophy had to pay. Many of the philosophical puzzles and problems that concerned Frege, Russell, and the early Wittgenstein, and which they presented as motivating their work, were