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Preface to the Italian Edition of *Frege: Philosophy of Language*

Michael Dummett

only in analogous senses. For all that, the analogy is *exact*: it is precisely by following that analogy, though allowing for the difference between numbers and truth-values, that we see what truth-functions are.

Just the same holds good, though much less obviously, for concepts and relations. It was argued in Chapter 6, section (7), that Frege was wrong to assimilate concepts to unary functions ~~of objects~~ and relations to binary ones: concepts and relations can be seen as functional in character without treating them as more than *analogous* to ordinary functions taking objects as values. ~~That is merely a consequence of rejecting~~ ~~Frege's doctrine that truth-values are objects.~~ That concepts and relations cannot actually be functions in the ordinary sense is a consequence of rejecting Frege's doctrine that truth-values are objects. ~~[illegible]~~ This conclusion should not ~~lead us to overlook~~ blind us to the value of the thesis that concepts and relations are functional in character, when this is understood as a matter of analogy: it was one of Frege's most ~~penetrating~~ penetrating insights. The analogy, though only an analogy, is as exact as that between truth-functions and ordinary ~~functions~~

Dummett's handwriting: amendment inserted into the text of *Frege; Philosophy of Language* for the Italian edition

Editorial Note

The Italian edition of *Frege. Philosophy of Language* was edited by Carlo Penco and translated by Carlo Penco and Stefano Magistretti, with the title: *Filosofia del linguaggio. Saggio su Frege*. The publisher was Marietti, at the time at Casale Monferrato, and the choice of the book was enthusiastically approved by Antonio Balletto, editor in chief of the company at that time. The Italian edition is a shortened edition (it does not contain all the chapters), whose cuts have been discussed largely with the author, who also suggested the insertion of some new excerpts, partly from *The Interpretation of Frege's Philosophy* and partly written on purpose for that edition, especially dealing with the idea of concepts as functions, and on Frege's conception of reference.

The English version of the preface, written by Dummett for the Italian translation, is published here for the first time, and we are grateful to Carlo Penco for making it available and for the details relating to the Italian edition. We would also like to thank Fabio Patrone who produced a digital text from the original typescript.

K. G.

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Michael Dummett

Gottlob Frege fails in every respect to match the conventional image of a philosopher; especially did he fail to do so in his own time. His name is known to none but professional philosophers and logicians; while some of the former regard him as of the first importance, his work is unknown to many others. In nineteenth-century Germany, the expected role of a professor of philosophy was well understood by all. His task was to create a system, that is, a range of answers to all the standard questions of philosophy. To this end, he had in the course of his career to produce a series of books covering the field: typically, a *Logic*, a *Metaphysics* and an *Ethics*. Frege did nothing of the kind: his philosophical work was almost completely restricted to two sectors, logic and the philosophy mathematics. But, then, after all, he was not a philosophy professor: uniquely among great philosophers—and he *was* a great philosopher—he spent his entire professional career as a teaching member of a university mathematics department, that of Jena. Equally, however, Frege failed to match the standard image of a professor of mathematics. The understood job of a professional mathematician was to prove theorems; and Frege proved hardly any theorems conventionally recognisable as such. Instead, he created his own role, and devoted his life single-mindedly to that.

The task he set himself was to set, not the whole of mathematics, but that part of it which he called 'arithmetic'—number theory and analysis (the theory of natural numbers and of real and complex numbers)—on a secure foundation. He deemed it a scandal that mathematicians were not even in approximate agreement about the subject-matter of these sciences: there was no commonly accepted characterization of what it was that they were about. Nor was there any agreement concerning their epistemological bases, that is, what entitled us to make the fundamental assumptions taken in practice as their starting-point. He set himself to rectify this state of affairs. He did not plan to contribute to putting it right: he intended to solve the problem definitively, once and for all, so that it would never need to be raised again. But he regarded this as sufficient of a task to set himself; apart from his teaching, which covered many branches of mathematics, he had no inclination to dabble in any other parts of mathematics or of philosophy.

It is impossible to be sure at precisely which moment Frege conceived this project: but it is consistent with all the evidence that remains to us to suppose that he did so at the very outset of his career, at the time of the earliest writings of his that have come down to us. It is then possible to view virtually everything that he wrote, from 1873 until a certain date in his career, as intended in one manner or another to contribute to this single grand project. The project was in part philosophical and in part mathematical, and hence required researches in both fields. Since, according to Frege, we cannot be certain what assumptions and modes of inference are required for arithmetic until we have completely formalised mathematical proof, it also required the construction of a system of formal logic adequate to mathematical reasoning, such as no previous logician had come close to devising: and so, at an early stage in the attempt to carry out his project, Frege invented, with very little then available to build on, modern mathematical logic.

In the course of his efforts to complete his project, Frege became increasingly embittered by the neglect of his work both by mathematicians and by philosophers. It was the consummate irony of fate that an admiring letter to him on 16th June, 1902, by the young Bertrand Russell, who understood very well what he was at, should also have announced, in tentative tones, his discovery of the celebrated contradiction in that part of Frege's logical system that comprised the theory of classes. Frege's initial reaction proved to be the right one: the discovery marked the collapse of the entire project of supplying a firm foundation for arithmetic in the manner that he had conceived it. After the first shock, Frege had rallied, and had patched up his system to block Russell's paradox. He probably never discovered that, as Lesniewski showed after his death, the modified system that resulted was still inconsistent; but he must have found out that the formal proofs of fundamental arithmetical laws would no longer go through. It was not, for Frege, merely a matter of devising a consistent version of set theory with sufficiently strong axioms to allow for the construction of arithmetic within it, such as the celebrated system of axiomatic set theory constructed by Zermelo: the modelling of one mathematical theory within another was not, of itself, of interest to him. His philosophical theory demanded, rather, that the theory of classes be capable of being presented as a part of logic; it was this that Russell's paradox showed to be impossible, at least as long as classes were to be regarded, as Frege required them to be, as genuine objects, and not, as in Russell's theory, as properties in disguise. From Frege's posthumously published papers, we can identify the month, almost the very day, when Frege finally acknowledged to himself that he could not successfully repair his theory in the light of Russell's discovery and that his entire project lay in ruins: it occurred on, or just before, 5th August, 1906. If it seems surprising that Frege should have taken four years to realise this, we must remember that, in the interval since the arrival of Russell's first letter, he had first had to see through the press the second

volume of his *magnum opus*, *Die Grundgesetze der Arithmetik*, to which he had added an appendix explaining Russell's contradiction and his proposed remedy for it, and then had suffered the loss of his wife, who died in 1905. We must also consider how hard it must have been for someone who had, very early in life, resolved to devote his entire career to the definitive accomplishment of a single specific project, to recognise that his attempt had irrevocably failed.

Having recognised this fact, Frege bravely set about salvaging what he could from the wreck. His theory of classes, and, with it, his logical construction of arithmetic and the greater part of his whole philosophy of arithmetic, had to be abandoned. The rest of his logic, both as a formal theory and as a connected body of philosophical doctrines, was intact; and in August, 1906, Frege began to compose a book, *Einleitung in die Logik*, setting out those doctrines in a systematic form. He never completed the work. He evidently fell, for a number of years, into a state of depression that inhibited him from further creative work. Then, towards the end of the First World War, he once more set about the task he had abandoned after 1906, that of writing a book on philosophical logic. This, likewise, was never completed: but the first three chapters were published as articles, the first two 'Der Gedanke' and 'Die Verneinung', in 1918, and the third, 'Gedankengefüge', in 1923. Finally, in the last two years of his life, he bravely began a renewed attack upon the philosophy of mathematics, renouncing a great deal of his former doctrine and attempting the construction of a new theory. Frege submitted an introductory manifesto for publication, but his death intervened and it did not appear; that manifesto, and a few other fragments, survived to be published together with his other posthumous writings.

In 1925 Frege died a saddened man, believing that, in the philosophy of mathematics, the major part of his work had been on the wrong track, and that, in formal logic and in logic considered as a branch of philosophy, he had made great discoveries which had been all but universally ignored. By the time of his death, mathematical logic, of which he was the inventor, had begun to make the first of the great advances that have led, during this century, to its astonishing development; but Frege remained aloof from any of this work, and, at least in those of his writings that have survived, manifested no awareness of it. In his letter to his adopted son, Alfred Frege, entrusting to him his unpublished papers, he expressed a confidence that one day his work would be appreciated. In fact, that work has exercised a profound influence, although it is only within the past three decades that it has come to be justly valued. That is because, for a long time, his influence was transmitted indirectly. In mathematical logic, the credit was at first largely given to others, such as Peano, Russell and Hilbert, although this injustice was not their fault. In philosophy, it was not until the 1950s, with the publication of John Austin's English translation of *Die Grundlagen der Arithmetik*, perhaps the most nearly

perfect sustained piece of philosophical writings ever composed, that Frege's own writings began to be extensively read, which they had not been during his lifetime. Their influence had been felt indirectly long before that, however: through the writings of Russell, of Carnap, of Church, in some degree even of Husserl, and above all of Wittgenstein. In this way Frege became, originally without acknowledgment, the grandfather of the analytical school of philosophy, while at the same time having exerted a significant influence upon the development of the phenomenological school. Since 1950, Frege's reputation has grown extensively wherever analytical philosophy flourishes, and has become a required part of a philosophical education in those universities where that school is strong. Because of what is, from the standpoint of philosophy, the historical accident of Hitler, which caused analytical philosophy to be largely concentrated in English-speaking countries, it is in those countries that Frege's reputation stands highest; but interest in him is also rapidly climbing through Germany, both East and West.

To anyone not a professional philosopher, this phenomenon may seem inexplicable. It is readily intelligible that someone who worked in a restricted area such as ethics should be seen as having made immensely valuable contributions to that particular area: but we should hardly expect that his work would come to be regarded as of fundamental importance to the whole of philosophy, as Frege's is, at least by almost all analytical philosophers. How, then, does it comes about that a professional mathematician, whose work in philosophy was almost wholly restricted to two specific branches of the subject, who said nothing about God, freedom or immortality, and very little about matter, time, space, knowledge or perception, should come to be seen, not just as a great logician, but as a great philosopher whose doctrines should be known to and thought about by all who are interested in the subject?

The answer lies in the fundamental character of the work Frege did in philosophy. Some parts of the subject form foundations for other parts. Perhaps the metaphor of a tree is more appropriate than that of a building. Not all branches issue directly from the main stem: each branch itself splits into subbranches. A philosopher's solution to the problem of free will or of the existence of God, however ingenious, may be entirely vitiated if the more fundamental part of his philosophy, on which it rests, is mistaken. That part of philosophy which Frege, in company with his contemporaries, called 'logic' is the most fundamental of all: it lies at the root of the entire subject. It might, with more appropriateness, be called 'the philosophy of thought'. In a sense, all philosophy is philosophy of thought: it seeks to lead us, in Wittgenstein's phrase, to see the world aright through giving us, in another phrase of his, the ability to command a clear view of our own thought. Human beings are capable of thoughts of immense complexity. They are also liable to lose their way within their own thought-processes: it is for just that reason that there is a need for philosophy at all. Someone may know his way around the

city without having any clear idea where that city is located within in the country to which it belongs; or, again, he may know, and apply, a number of proven recipes for getting from one part of the city to another, without grasping the topography of the city as a whole, the spatial relations between one part and another, so that he is incapable of devising a short cut. In just the same way, we may have a ready grasp of the immediate conceptual neighbourhood of a certain range of thoughts with which we are accustomed to operate, while remaining thoroughly confused about its place on the general map of conceptual space; or, worse, we may simply have learned some practical recipes which enable us to perform the intellectual operations demanded of us, without having any good general conception of what it what we are doing, that is, of the significance of those operations. At one stage in my own career in the British army during the war, I was made to attend a theoretical course in the workings of the internal combustion engine, and successfully passed an examination in the subject; but, since the course was wholly theoretical, and I was never made to do any practical work with motor engines, I was left wholly unable to apply what I had learned, and, indeed, without any real theoretical knowledge of the subject, since I had never truly understood it, but only learned the mechanism of answering questions about it. What I lacked in this case was not philosophical insight, but straightforward understanding; but when the confusion lies only a little deeper, and the subject-matter is itself of more general interest, then ordinary explanation becomes insufficient to dispel it, and philosophical reflection becomes essential. We are all in a state of such confusion about many of our concepts; as Wittgenstein remarked, a characteristic expression of a philosophical problem is, ‘I don’t know my way about’. What philosophy aims to do is to teach us our way about among the concepts that we manipulate and the thoughts we build out of them: to give us a better understanding of the thoughts we ourselves think.

That part of the subject that may nevertheless be specifically called the philosophy of thought, considered as co-ordinate with the theory of knowledge, ethics, natural theology, political philosophy and so forth, is concerned with the most general features of thoughts, their structure and their relations to one another. It is for this reason that it lies at the root of all philosophy: all other branches of philosophy stem from it. To the extent that we lack a correct conception of the general structure of thoughts, we are, not indeed certain, but highly likely to go astray in our delineation or analysis of particular thoughts or classes of thoughts. In pursuing his researches into the philosophy of mathematics, Frege found it necessary to frame an entire doctrine concerning the structure of thought in general; and it is for that reason that his work, though restricted in scope, is of fundamental value for the whole of philosophy.

The philosophy of thought, as I have here called it, is to be sharply distinguished from philosophical psychology (the philosophy of mind). It does

not concern the activity of thinking, but the internal objects of that activity. I am here using the epithet 'internal', not as contrasted with the adjective 'external' as it occurs in the phrase 'the external world', and hence in the sense of the word 'inner' in the phrase 'the inner life', but, rather, in a grammatical sense, under which an internal object is what is referred to by a cognate accusative, as a song is the internal object of singing. A thought, in Frege's sense of the term, is a content of an act of thinking: it is that which the subject thinks, as opposed to the external object of his thinking, which is what he thinks *about*. The study of thoughts, in this sense, is not, according to Frege, the province of either empirical or philosophical psychology, both of which may properly concern themselves with the nature of the thinking process. The study of the thinking process would have to rely upon an analysis of the structure of the objects of that process, that is, of thoughts; but that analysis would not itself belong to philosophical psychology, but would be prior to it. What is interior to the mind, what counts as the content of consciousness, Frege held to be inherently subjective: we may succeed in conveying to others something of our inner psychological processes, but we can never communicate them fully or with certainty. This is not true of thoughts, and so, although thinking is a conscious process, thoughts are not rightly called contents of consciousness. A sensation or a mental image of mine is intrinsically mine: no-one else can have *that* sensation or image. But a thought that I have is not mine in this sense, but only in the sense that I grasp it: by means of language, I can convey to you that very thought that I grasp. If this were not so, there would be no objective truth and falsity, for two people could not think the very same thought, but only more or less similar ones, and the dissimilarity between them right be sufficient, for all we could tell, to make the difference between truth and falsity. It is for this reason that Frege was always punctilious in distinguishing between thinking (*das Denken*), which is a proper subject-matter for psychology, and the thought (*der Gedanke*) that the subject thinks, which is not.

Frege was not, of course, the first to explore the philosophy of thought: from Aristotle onwards, philosophers had given analyses of the structure of the thoughts expressed by sentences of various forms, and the branch of philosophy known in the nineteenth century as 'logic' was to a large extent concerned with such matters. Frege's originality in this respect lies in two, quite different, things, which respectively make him the father of modern semantics and the father of mathematical logic. He was the father of modern semantics because he was the first to pose the general question: What in general determines the content of a thought? Earlier philosophers had advanced particular doctrines about the analysis of thoughts of various forms, or the contribution made by certain words to the senses of sentences containing them: Frege set his own doctrines on these questions in the context of general theory about what determined the thought expressed by a sentence. This theory

placed the concept of truth in the very centre of the philosophy of thought: for him, the substance of any particular thought lay in what was required for it to be true. Such a theory provided a ground of distinction that had not previously been available, between different kinds of function that words might have. A variation of phrasing, for instance between 'The policeman has passed away' and 'The cop has died', might convey a difference in the speaker's attitude to his hearer or to the subject-matter; but so long as it makes no difference to how what is said is determined as true or as not true, it cannot, for Frege, signify any distinction in the thought expressed. Language serves other purposes than simply to express thoughts, and we need, for the sake of theoretical understanding and of analysis, to separate the different functions.

In the light of his conception of what constituted the substance of a thought, Frege gave an account of the structure of thoughts out of their component parts, and, by so doing, took extensive steps towards the construction of a fully-fledged semantic theory. A semantic theory, properly so called, concerns the words or symbols of a natural or artificial language, and explains in what their significance consists; and Frege proceeded in precisely this way. His account of the internal structure of thoughts is an account of how the component words of a sentence of natural language, or the component symbols of a formula of his symbolic language, contribute to determine the thought expressed. Frege's mature account of this proceeded in two stages, corresponding to the celebrated notions of *Bedeutung* and *Sinn*. The first part of the account is the theory of *Bedeutung*. This is concerned to explain the contribution of each significant part of the sentence to determining it as true or as false: the *Bedeutung* of that part is, in effect, that feature of it which goes to determine that sentence, and any other sentence of which it is part, as true or otherwise. The feature of the sentence-component in question must suffice, together with the corresponding features of the other components, to determine the truth-value of every sentence in which it occurs; but it must also be conceived as comprising nothing that is not necessary for this purpose. Frege thought of such a feature as consisting, in every case, of an association between the sentence-component and something non-linguistic, whose nature could vary greatly according to the kind of expression it was; For instance, what is associated with a proper name or other singular term is an object, although objects themselves, as Frege used the word, are very various, including people, planets, points in space, numbers, sensations and thoughts themselves. What is associated with an expression like 'is larger than', on the other hand, is not an object at all, but a relation between objects; there are, for Frege, just as many types of entity as there are logical types of expression. There is here, of course, intended to be an analogy—though no more than an analogy—between proper names and expressions of other logical types. The semantic function of a name is to pick out or stand for an object: Frege's conception was that it is possible, and proper, to characterise the

semantic function of an expression of any type as consisting in its standing for something of a suitable kind, so long as we bear in mind the radical difference between the kind of thing for which an expression of one type stands and that for which one of another type stands, for instance between an object and a relation. It is that for which an expression stands—the object or relation or the like—to which Frege normally applies the word '*Bedeutung*'.

The theory of *Bedeutung* does not, of itself, serve to characterise thoughts, but only to supply a basis for doing so. The *Bedeutung* of the component parts of a sentence jointly determine it as true or as false. Now, in general, a sentence is true or false in view, in part, of its meaning, but also in view of how the world is. Someone who knows its meaning thereby knows what thought it expresses: but he may well not know whether it is true or false, and very often does not know enough to be able to recognise it as one or the other. In assigning their *Bedeutungen* to the sentence-components, we have therefore taken into account everything concerning the way the world is that is relevant to the truth of the sentence: just as the truth of the sentence depends upon how the world is as well as upon its meaning; so, too, in general, will the *Bedeutung* of any of its component expressions. Thus, for example, the *Bedeutung* of a singular term, for instance a definite description like 'the city that was the most populous in the world in 1800', will be an object, in this case a city; but which city it is obviously does not depend solely on the meaning of the phrase—on what anyone needs to know in order to understand it—but on facts about population.

What differentiates the phrase from another that stands for the same object, for instance 'the second Rome', is irrelevant to the truth or falsity of a sentence containing it; the truth-value of such a sentence would be unaffected by its replacement by the other phrase. For this reason, what differentiates the one from the other cannot be part of its *Bedeutung*: its contribution to determining the truth-value of the sentence is exhausted once the object it stands for is identified, and its *Bedeutung* therefore consists simply of that object. This shows that the notion of Bedeutung does not capture that of meaning. To know the meaning of an expression, we do not need, in any ordinary sense, to know what its *Bedeutung* is: but, even if we do know that, we do not thereby know the meaning. In order to do justice to the intuitive notion of meaning, we have therefore to supplement the theory of *Bedeutung* by a further theoretical notion.

Frege did not himself make use of the general notion of meaning, comprising all that a speaker needs to know about on expression to understand its use in the language, but dealt separately with various distinct ingredients that he distinguished within it. The most important of these is sense (*Sinn*), the sense of a word or phrase being its contribution to the thought expressed by any sentence in which it occurs. Sense, being part of meaning, must, unlike *Bedeutung*, be something grasped by anyone who understands the expression.

Since, however, the thought expressed by a sentence is wholly determined by what is required for that thought to be true, the sense of a component expression cannot differ from that of any expression its replacement by which could never affect the truth or falsity of any sentence. The important word in this formulation is 'could'. If we do not stress that word, we may think that any expressions with the same *Bedeutung* must have the same sense, and the distinction between *Sinn* and *Bedeutung* would be rendered nugatory. Given the way the world is, the replacement of one expression by another with the same *Bedeutung* will not affect the truth-value of the sentence; but it *could* do so, if the world were different. 'Could' is here to be understood in its epistemic sense, namely as meaning 'could, for all we know'. The sense of an expression has to do with the linguistic knowledge a speaker must have concerning it in order to be able to determine the truth-value of any sentence containing it. Two expressions will therefore differ in sense provided that, for all that anyone might know who had enough linguistic knowledge to understand the expressions, the replacement of one by the other in some sentence could alter its truth-value. On the one hand, then, a pair of words such as 'dog' and 'cur' or 'dead' and 'deceased' do not differ in sense, but only in a different facet of their meaning, since anyone who understands them knows that the replacement of either by the other cannot affect the truth or falsity of what is said. On the other hand, such a pair of expressions as 'perfect cube' and 'perfect cube not representable as the sum of two perfect cubes', as applied to numbers, have distinct senses. It is provable that no perfect cube can be represented as the sum of two cubes, and so, in an absolute (i.e. non-epistemic) sense, it is impossible for the former predicate to apply to any number to which the latter does not apply. But a mere understanding of the two expressions does not suffice to ensure this; and so, for all that anyone who understands them may know, the replacement of one by the other might change the truth-value of a sentence. The sense of an expression may therefore be characterised as that concerning it which must be known to anyone who understands it, and which is relevant to determining its *Bedeutung*; or, as Frege expresses it, it consists in the way in which the *Bedeutung* is given to one who understands it.

The idea of a distinction of some sort between the meaning of an expression and that which we use it to talk about—its reference or *Bedeutung*—seems quite obvious to us in certain cases, for instance that of a definite description. It was not obvious in Frege's time, as is shown by the difficulty that he had in conveying the distinction to others (such as Peano) and by the fact that it took even him a long time to win through to making that distinction; perhaps the most striking testimony to how far he was from making it in the early 1880s is the second footnote to section 27 of his *Grundlagen* of 1884 in which he says that 'objective ideas can be divided into objects and concepts'. Here he is obviously conflating the object itself with what he would later have called the sense of a name of that object.[1] Frege's contribution went far beyond ob-

serving that a distinction between sense and reference was sometimes called for: he provided a means of extending the distinction beyond the obvious cases to expressions of all kinds. He did this by constructing a systematic theory of the type of *Bedeutung* possessed by expressions of every logical type, together with clear requirements for what should constitute the sense of any given expression. The former theory amounted to a semantic theory in the strict sense, that is, a theory about how each sentence is determined as true or otherwise in accordance with its composition. The doctrine of sense, on the other hand, does not amount to a full-fledged theory of meaning, not only because it omits those aspects of meaning that do not contribute to sense, as Frege used that term, but also because it does not answer every question about what the sense of an expression is: it merely circumscribes, though rather strictly, the possible answers to these questions. In doing so, it exhibits very plainly the manner in which a semantic theory in the narrow sense – a theory of *Bedeutung* – forms a basis for a theory of meaning; this is because the requirements for what should constitute a possible sense for an expression are stated in terms of the notion of *Bedeutung*.

Frege succeeded, in this way, in bringing the philosophy of thought to a far more advanced stage of development than any philosopher had done before him: it is this, above all, that makes his work of such fundamental importance to all philosophers who have come after him, whatever their particular interests, the philosophy of thought being, as observed, fundamental to the entire subject. It was this, too, as he himself perceived, that survived the calamity of Russell's discovery of the paradox. That discovery shattered Frege's philosophy of arithmetic and rendered it untenable, which is not, of course, to say that we cannot learn much from it; but it left his general philosophy of thought intact. The second mark of Frege's originality in this field, and an essential ground of his success, as he also explicitly perceived, lay in his invention early in his career, of mathematical logic. Just as, for Frege, a theory of sense must rest upon a semantic theory in the strict sense of a theory of *Bedeutung*, so any such semantic theory must itself rest upon a prior syntactic analysis of the language to which it is to be applied. The semantic theory must assign different kinds of semantic role—different kinds of *Bedeutung*—to expressions of different logical types, in such a manner as to explain how these together determine the truth-value of any sentence. Doing that presupposes a prior categorisation of expressions into logical types, and a prior analysis of the structure of sentences in terms of these types of expression. A systematic logical theory embodies such a categorisation and such an analysis. Mathematical logic in its classical form, which appears full-fledged in Frege's astonishing *Begriffsschrift* of 1879, supplied a syntactic analysis far more powerful and more far-reaching than any supplied by previous logicians; that is why mathematical logic supplanted all other logical theories and established itself as the only formal logic. Because it embodied

the first syntactic theory capable of supporting a semantics that could plausibly be thought to be generally adequate, and hence, in turn, a comprehensive theory of meaning, the significance of mathematical logic extended far beyond the field of formal logic in the sense of the theory of deductive inference. It, too, became, in its general outlines, of crucial importance for the philosophy of thought.

I have hitherto spoken, in this Preface, of the philosophy of thought. Frege himself, as already observed, spoke of this branch of philosophy as 'logic'. Because the investigation of the structure of thoughts is so closely bound up with the theory of deductive relations between them, he made no distinction between philosophical and formal logic; and because, for him, the central notion of this whole branch of philosophy was that of truth, he regarded it as in effect a theory of truth, a drawing out of all that is involved in that notion. This book, however, is subtitled *Philosophy of Language*, and this raises the problem how, in fact and in Frege's eyes, the philosophy of thought and of language are related to one another. The problem is very far from simple to solve. It is plain that, even if the philosophy of thought is entirely autonomous, there is a legitimate philosophical question how we contrive to express thoughts by means of sequences of sounds (or visual representations of them); but, if it is possible to give a philosophical account of what it is to have a thought with a given content that makes no appeal to our means of expressing such a thought, the philosophy of language would seem to occupy no central place within philosophy as a whole. To put the matter thus is, however, to ignore the converse question, namely whether, if we had such an autonomous philosophical account of thought, it would be possible to appeal to it in explaining how thoughts are capable of being expressed linguistically. Could we, in explaining how language functions, *make use* of the supposedly prior account of what it is to have the thoughts we express in words?

A school of philosophy is primarily a historical phenomenon: someone is said to belong to a particular school principally because he was formed by a certain tradition and has responded to the problems that have arisen within that tradition, rather than because he accepts certain philosophical tenets. In this sense, someone may be described as an analytical philosopher because Carnap and Quine, or Wittgenstein and Austin, played a much larger part in his formation than Husserl, Merleau-Ponty or Heidegger, and because the problems with which he engages, or at least the formulations of them to which he is inclined, arise out of the work of the former rather than of the latter. Nevertheless, with this proviso, we may designate as the fundamental tenet of analytical philosophy, in all its forms, a negative answer to the second question posed in the preceding paragraph. It is not necessary to suppose that no thought is possible for a being without language, an animal or an infant, for example. It is not even necessary to suppose that no philosophical

account can be given of what it is to have a thought without appeal to how it may be expressed in language. What is rejected as an illusion is the supposition that, if we had such an account, we could make any use of it in explaining how language works. Rather, a theory of meaning—an account of what it is for language to have the expressive power that it does—must start from scratch: it cannot take the notion of the thought expressed as given in advance, but must itself embody an account of that which constitutes an utterance's expressing a thought (or anything else that it is capable of expressing). If this is correct, then an adequate philosophy of language will itself simultaneously comprise a philosophy of thought. It may not represent the only possible form that a philosophical account of thought might take: but since an account of how language functions is in any case something demanded of philosophy, and since it is evident that, at least as far as our experience reveals, thought beyond a certain level of complexity is possible only for those who have language, the philosophy of language serves as the best possible form—the most economical and the most far-reaching—in which to cast a philosophy of thought. That it is which I am here calling the fundamental tenet of analytical philosophy.

Some analytical philosophers—some of those who belong historically to the analytical tradition—have recently begun to question this tenet, and to propose views that entail that certain aspects of language can be characterised only by reference to an antecedently explained conception of what it is to have a thought of a certain kind, for instance a thought *about* a specific object. A very interesting example of this tendency is the posthumous work, *The Varieties of Reference*, by the late Gareth Evans. For myself, I am dubious whether this reversal of conceptual priority is correct. There is, however, a particular ground for doubting the fundamental tenet of analytical philosophy, namely the problem of explaining in what the mastery of a language consists. It seems highly dubious that this can be regarded as a pure practical ability without any theoretical component, that is to say, as something that does not necessarily demand that the subject possess any theoretical knowledge (what Ryle called 'knowledge-that'). If we are to take seriously the conception of understanding a language as involving knowledge, it is plain that, when the language is the subject mother-tongue, this knowledge cannot itself be verbalised knowledge; and so it seems that thoughts a grasp of which does not rest upon the ability to express them verbally must play a crucial part in explaining our very ability to express thoughts verbally.

I shall not here attempt to go further into these difficult questions: what we have here to ask is where Frege stood in regard to them. In one of his very late, posthumously published, essays, he makes two explicit pronouncements on them, which probably represent his life-long views. The first is that there is no contradiction in supposing the existence of beings who can think the very same thoughts as we do without having to clothe then in sensible (e.g.

spoken or written) form. The second is that *we* are incapable of grasping a thought save as expressed linguistically or symbolically. The second of these two propositions goes much further than the doctrine I have attributed to analytical philosophers in general, although doubtless some of there have not only agreed with Frege in holding it, but would have denied the first proposition and held that thought is in principle impossible without the means of expressing it. Frege's second proposition entails that the only means, intelligible to us, of characterising specific thoughts and analysing their structure is by means of analysis of their actual or possible linguistic expression. The first proposition, if accepted, demands a rather delicate philosophical balance: for it forbids us to characterise thought in general in such a manner as to make it contradictory that any being who did not have a language of some kind could have a thought at all.

Right or wrong, these views seem quite straightforward; and, to the extent that the second of them is correct, it explains a frequently observable phenomenon, instances of which occurred earlier in this Preface. It is not particularly remarkable, or problematic, that we have no way of picking out any particular thought save by reference to its linguistic expression; but it is more damaging to the project of giving any autonomous account of thought that if we attempt to characterise the structure of a specific thought, we have no access to this save in terms of the composition of a sentence expressing it. For Frege, thoughts are complex, and their constituents are senses. The existence of a thought is, according to him, independent of its being either expressed or grasped by any rational being; it therefore has the structure that it does independently of the structure of any sentence expressing it in any language. Nevertheless, we have no means of discerning or describing this structure save by reference to the structure of such a sentence: although senses are not intrinsically the senses of words or expressions, since they may be constituents of thoughts we have not the capacity to express, we can form no conception of any particular sense save as the sense *of* some expression or word.

For this reason, the philosophy of thought and the philosophy of language are inextricably bound up with one another; this is inevitably so in practice, whatever view be taken of their relation to one another in principle. Even if the philosophy of thought is autonomous, contributions to it must necessarily be at the same time contributions to the philosophy of language, provided that it be accepted that the structure of sentences reflects, at least to some degree, the structure of the thoughts they express. Sentences are obviously complex, and our capacity to recognise what thoughts are expressed by different sentences obviously depends upon our apprehending their structure. It would nevertheless be theoretically possible that that structure reflected, not the internal structure of the thoughts, but, say, certain relations between them, in the way that a map reference identifies a place, not by what that place is like in itself, but by its spatial relation to other places. It is plain that

this is *not* how language works; and it is empathically not how Frege thought of it as working. On the contrary, he consistently held that the structure of the sentence corresponds, in considerable measure, to the structure of the thought it expresses: in analysing its structure, we are thereby also analysing the structure of the thought. Conversely, it also follows that an analysis of the structure of thoughts must contribute to the analysis of language.

On his own principles, therefore, Frege was of necessity concerned with language and the manner in which it works. It is harder to be clear which language it was that concerned him. Frequent remarks in his writings abuse natural languages as radically defective: they contain vague expressions, they permit the formation of ambiguous sentences, and have other features that he regarded as equally serious defects, although considerable argument is needed to show them to be so. It is certainly in accord with his intentions to regard his symbolic language as an alternative to natural language, devised for the sole purpose of expressing thoughts, rather than for any of the ancillary purposes which he viewed natural languages as serving, and to express them in the most perspicuous possible way, so that the structure of the symbolic formula should mirror that of the thought as faithfully as a written language could do.[2] In devising such a language, Frege of course aimed at eliminating everything he saw as being a defect of natural languages, as well as everything irrelevant to the expression of thought. An account of the structure of a formula of the symbolic language therefore served in an especially direct manner as an account of the structure of the thought expressed.

It would be possible, accordingly, to view Frege as accepting the fundamental tenet of analytical philosophy, considered, however, only as applied to *some* language capable of expressing our thoughts, not necessarily the everyday language we normally use for that purpose, and indeed preferably the symbolic language Frege had devised to give more perspicuous expression to them. To put the matter thus, however, is probably to overemphasise the degree to which he wished his symbolic language to be viewed *solely* as an alternative to natural language. That it is an alternative and not a direct representation is the most obvious fact about it: it was precisely by inventing a mode of expressing generality that differed radically from those employed in natural language that Frege solved the problem of handling statements involving multiple generality that had baffled many generations of logicians. And yet the relation of a sentence of natural language to a corresponding formula in Frege's symbolic language is not simply that they both express the same thought, and that the structure of the formula reflects the structure of the thought, since the structure of the sentence—of any sentence expressing that thought—is supposed likewise to reflect the structure of the thought. Frege gives no hint that we recognise sentences of natural language as expressing the thoughts they do by some means utterly different from that in which we do so for his symbolic formulas, namely by grasping the senses of

the component expressions and combining them in the relevant manner so as to attain the thought of which they are constituents: he writes always as though the process were the same in the two cases. If this is so, then the symbolic formula must be more than an alternative expression of the thought: it must in some manner display the underlying structure of the sentence.

This is a delicate matter to state accurately, and Frege himself did not try very hard to do so; but the problem has recurred frequently—not specifically in a Fregean setting—in the writings of linguists and of philosophers of language. In his *Tractatus Logico-Philosophicus*, Wittgenstein made the celebrated statement (an implicit criticism of Frege's complaints against natural language) that 'all language is in order as it is', but also spoke of the immense complexity of the tacit conventions governing our understanding of the sentences of natural language. On this view, a symbolic formula shows on the surface the structure that the everyday sentence actually possesses, but which, in its case, is hidden from view: the structure in question is not that of the actual sequence of spoken or written words, considered just as sounds or marks, but of them considered as subject to a host of complicated conventions that we do not even trouble to make explicit to ourselves. The idea reappears in the work of the linguist Noam Chomsky, in the form, now, of the notion of 'deep structure'.

The symbolic formula displays the deep structure of the sentence, or something very like it; and this deep structure actually represents the first stage in the largely unconscious psychological process by which the speaker who utters the sentence has come to form it in accordance with the grammar of the language which he has 'internalised'. I shall not further pursue the question whether this solution to the problem, or Wittgenstein's, or some other, is the correct one; for the problem lies at the heart of our current difficulties in explaining what it is for someone to know a language, and Frege's work, though it brings the problem into sharp focus, offers no resolution of it.

It is arguable that Frege's attitude to language is ultimately incoherent. His writings are full of dicta about the features a language must have if its sentences are to express definite thoughts or to possess determinate truth-values, or if valid reasoning by means of them is to be possible; to these are frequently appended the observation that natural languages fail to satisfy these criteria. A natural reaction is to ask how we contrive to communicate by means of natural language as well as we do; an answer to this question is markedly absent from Frege's work. We derive from his work a clear description of how a language functions when it functions perfectly; but we are offered little guidance if we seek to know how one that, on his account, functions only imperfectly manages to function at all, let alone to function pretty well, as we may surely claim that natural languages do. Many of Frege's remarks about natural language are simply (and surely inappropriately) dismissive; but in other cases he has actual doctrines concerning it, and it is here

that we have to take great care in interpreting him. A crucial, and celebrated, example is his view of singular terms, without reference, such· as 'the continent of Atlantis', 'Pope Joan' or 'the largest prime number'. According to Frege, it is a defect of natural language that it permits the formation of such empty terms, and his symbolic language renders it impossible. He nevertheless has a doctrine concerning sentences containing such terms, namely that they do express thoughts, but thoughts that lack any truth-value: they are neither true nor false. In the context of his other doctrines, this one involves great difficulties; but it is not easy to say whether these difficulties are in Frege's favour, or a ground of objection to him. Suppose that the difficulties could be dispelled, and the doctrine of thoughts without a truth-value shown to be fully coherent with his other views: what then would remain of the claim that it is a defect in natural language that it is capable of expressing such thoughts? If we understand his calling it a defect as meaning that no ultimately coherent account can be given of the functioning of a language that has that feature, then, if the best possible approximation to such an account proves not to be fully coherent, the claim is vindicated, and Frege is not to be criticised for the incoherence. Where, rather, he may be criticised is in the very conception that natural language is incoherent. To accuse it of defects is not, in general, to accuse it of incoherence. A given language may well fail to serve effectively the purposes that we require a language to serve: and its speakers may or nay not be conscious of this. This may hold good at a deep or at more or less superficial level; and, whenever it holds good, the language requires revision. It holds good at a very deep level whenever the accepted practice of speaking involves the employment of unjustifiable patterns of deductive inference. It holds good at an intermediate level whenever the language embodies some concept which there is ground for rejecting, either as confused or because the conventional conditions for its application are in disharmony with the accepted consequences of applying it. Ambiguity is an example of a relatively superficial defect in a language, of which we are fully conscious. It is undeniably a defect, even though it may be exploited to good effect by comedians and poets and to bad effect by politicians and lawyers; but there is no obstacle in principle to giving a coherent account of a language some of whose sentences serve to express two or more distinct thoughts. In general, the failure of a language satisfactorily to fulfill what is required of it does not render us incapable of describing accurately how it in fact functions.

The presence of empty names is not, however, a defect in the same sense. Of course, it may lead to someone's wrongly supposing that some particular name has a reference when it does not; but no language can prevent anyone's taking a false statement for true, and it is not evident that his taking an empty name as having reference is any greater calamity. Deductive inference is more obviously hampered by the existence of ambiguities than by the

occurrence of empty names: to say that it is vitiated by the latter is implicitly to hold that no coherent semantic theory is possible for a language that permits their formation. On the face of it, this could be so only if it could be shown that such a language must involve either hidden ambiguities or the use of unjustifiable forms of inference. We operate with natural language, and in our childhood we acquired the ability to operate with it; moreover, operating with it includes reasoning in it. What we can do and can learn to do must in principle be capable of being systematically described: the conception of an intrinsically incoherent language is itself incoherent.

It was remarked above that, although everyone is bound to admit the necessity of a distinction of some kind between the meaning of an expression and that for which it stands or to which it refers, it is far from obvious that we do right to generalise this distinction to a wide range of expressions, let alone to all expressions. Indeed, it seems that the least such generalisation beyond the narrow class of expressions for which it is undeniably valid, namely definite descriptions, goes against the grain of intuition: for that is the most ready explanation of the resistance put up by most philosophers of language to such a generalisation. Russell is an obvious example. He allowed that a definite description has, or is intended to have, a denotation that cannot be identified with its meaning; but this was as far as he was prepared to go in admitting anything corresponding to Frege's distinction between *Sinn* and *Bedeutung*. The notion of denotation is semantically inert in his theory: it plays no role in his account of the determination of the truth-value of a proposition involving a definite description. It is plain enough that when a definite description stands as grammatical complement to a copulative verb such as 'to be' or 'to become', it may be regarded as a special kind of predicate rather than as a singular term; if we so regard it, we have no inclination to treat it as denoting an object, or, more exactly, to employ that notion in describing its semantic role. Russell's theory in effect transforms every occurrence of a definite description into a predicate position; and so his semantic theory need take no account of the notion of denotation for descriptions. Russell acknowledged that the view of proper names, as opposed to definite descriptions, that is likely to occur to anyone who has not reflected on the question cannot be maintained for the terms classified as proper names in natural language: the view, namely, that their linguistic function consists solely in their standing for their bearers. Rather, he saw such names as definite descriptions in disguise. He was, however, sufficiently in the grip of the unreflective theory that he supposed it necessary for any language to contain terms—the so-called logically proper names—that conformed to it. In general, then, Russell's semantics admitted no distinction between sense and reference for any category of expression: it operated with only a single notion, that of meaning, which, for logically proper names alone, could be identified with the object that was the bearer of the name.

Until about ten years ago, most philosophers working in the analytical tradition favoured something more closely resembling Frege's view than Russell's. In the last decade, however, a strong movement emanating from the United States, and associated particularly with the names of David Kaplan and Saul Kripke, has favoured a return, not exactly to Russell, but to what I called above the unreflective view. I do not, of course, mean by this to suggest that these philosophers are themselves unreflective: they have reflected very hard, but they feel a strong impulse to put up a sophisticated defence of what a person who had never reflected on the topic would be prone to say, which they incline to dignify by the title 'linguistic intuition'.[3] Kaplan's notion of a proposition, as having constituents of a rather mixed nature, indeed bears a marked resemblance to Russell's; for some expressions contribute to the proposition their 'character', i.e. their conventional significance in the language, while those held by Kaplan to be 'directly referential' contribute the actual objects for which they stand. For Kripke, on the other hand, Russell, in virtue of his view of ordinary proper names as disguised definite descriptions, is barely distinguishable from Frege. Kripke's hero is J. S. Mill, for he shares the popular misconception of Mill as having maintained that a proper name is a mere label for its bearer.[4] Kripke has declared, in almost exactly the words I used above, that

> the linguistic function of a proper name is completely exhausted by the fact that it names its bearer. ['A Puzzle about Belief', in A. Margalit (ed.), *Meaning and Use*, Jerusalem, 1979, p. 240.]

There is obviously no space here to discuss adequately the repudiation by Kripke and his allies of Frege's distinction between sense and reference; a few sketchy observations are all that can be included. Even should the eventual consensus be in Kripke's favour, that would not obliterate the value of Frege's work. That lies only partly in the specific theories that he elaborated, suasive and well thought out as these are: it lies yet more in his having put before us, by example, an entire philosophical project. Something of the same may be said of his philosophy of mathematics: although his theory incontrovertibly collapsed, he showed, by the attempt to construct it, that a theory of some kind was needed; the philosophy of mathematics, although at present in some confusion, has perforce been more sophisticated and, one may say, more intellectually responsible since he wrote about it. Before Frege, no philosopher had so much [as] conceived of attempting a *systematic* theory of meaning for a language, or of asking after the substance of thoughts in general, or of explaining what it is that we must grasp in order to understand an expression of any given type. Aristotle indeed had a theory of the various possible types or categories of expression; but, despite the acuteness of the mediaeval logicians, the poverty of formal logic before Frege's great discov-

ery of quantificational symbolism testified to the inadequacy of Aristotle's classification as a basis for a general analysis of sentence-structure. Moreover, Aristotle's theory provided no clear beginning to an account of that in which the understanding of an expression of any particular category consists. Frege's major contribution to the philosophy of language and of thought lay, not primarily in the actual theory that he devised, but in his having given us the conception of what such a theory ought to look like.

Kripke's attack on the Fregean distinction between sense and reference relates only to proper names, as against definite descriptions, and to certain other words regarded by him as sharing certain relevant features with proper names; these are terms for 'natural kinds' (i.e. species-terms like 'tiger' and mass terms like 'sugar'), and words for units of measurement, like 'metre' and 'ton'). Like many writers on proper names (not including Frege), Kripke takes no pains to explain what he counts as a proper name. His examples are largely personal names, occasionally varied by geographical ones: we do not know whether, for him, 'chess' counts as the proper name of a game, 'cholera' as that of a disease, 'Monday' as that of a day of the week, 'the scirocco' as that of a wind, or 'Judaism' as that of a religion. His attack on Frege's view has two quite different prongs: one concerns the behaviour of proper names in modal contexts, the other the determination of their actual reference. A modal context is generated by a modal adverb such as 'possibly' or a modal auxiliary such as 'can', 'could' or 'might'. Frege himself displayed little interest in modal expressions. In *Grundlagen* he indeed made use of the Kantian trichotomy of *a posteriori*, synthetic *a priori* and analytic judgments, the definitions of which he modified. This represents, however, only what Quine has called 'the first grade of modal involvement': by means of such epithets we classify statements of a language, but do not regard those epithets as belonging to that language, nor, therefore, as occurring in statements we aim to classify by means of them. The use of modal adverbs and auxiliaries represents a further grade of modal involvement and the only, brief, allusion made to them by Frege, in section 4 of *Begriffsschrift*, treats the modal expressions as not contributing to the senses of the sentences in which they occur, but only as indicating the relation of the thought expressed to other knowledge possessed by the speaker.

Kripke, on the other hand, treats modal expressions very seriously, and, in the manner that is customary among those who do so, as to be represented, in an extension of Frege's symbolic language, by operators acting upon whole sentences to form other sentences. He understands them as sometimes relating, not to the manner in which it would be possible for us to come to know the truth of the sentence to which the modal operator is attached, but to what he calls 'metaphysical' necessity and possibility. Such necessity and possibility have to do with the kind of thing that renders a given statement true, whether or not we are capable of knowing it to be true; and the seman-

tics he favours for sentences involving such modal operators is that known as 'possible-world semantics'. A possible world represents a complete possible past and future history of the world as it might be and might have been; the actual world is just one among the many possible ones. The fundamental semantic notion is, then, not that of the actual truth-value of a statement, but of its truth-value in each possible world; and all other semantic notions such as reference must likewise be relativised to possible worlds. Kripke's celebrated thesis is that proper names, and expressions that behave in this respect like them, are 'rigid designators', unlike definite descriptions. A rigid designator is a term whose reference in any possible world, if it has one, is that object to which it refers in the actual world. 'The first great Italian poet' refers, in any given possible world, to whoever in that world was the first great Italian poet; if, in that world, Dante had written no verse, or some great poet had preceded him, the definite description would not refer to him in that world. The proper name 'Dante', on the other hand, refers to the same man in every world in which it refers to anyone at all: that is why even someone who knows of Dante only that he wrote the *Divina Commedia* can intelligibly say such a thing as 'Dante might never have written a line of verse'. He would not mean, 'Dante may never have written a line of verse, for all I know', for he knows very well that he did; his statement is true if there is a possible world in which Dante—the very man who *in fact* wrote the *Divina Commedia* never wrote a line of verse.

This is not taken by Kripke to imply that, for any predicate we like to take that in fact applies to Dante, we can truly say that it might not have done. A counter-example is the predicate 'was conceived in 1264': in whatever possible world, someone not conceived by Dante's mother of Dante's father at the particular moment when Dante was in fact conceived would not have *been* Dante, however much he might have resembled him. Having been conceived in 1264 is thus, unlike writing the *Divina Commedia*, one of Dante's essential properties: in no possible world can an object lack any of its essential properties. This doctrine of essential properties in fact supplies the substance to the notion of metaphysical possibility: crudely expressed, if there were no essential properties, anything would be possible. It may well be wondered whether there is not something largely arbitrary in the classification of properties as essential or accidental. I indeed personally believe this to be so, and hence regard the entire much-vaunted notion of metaphysical possibility, as Kripke understands it, as flimsy or at least far from being absolute.

This, however, although the most interesting question concerning the views expressed in Kripke's 'Naming and Necessity', is not to the present point. Kripke undoubtedly demonstrates that proper names and definite descriptions tend to behave differently in modal contexts. We do not in fact need modal contexts to observe the disparity in their behaviour; temporal ones will also serve. When Neil Armstrong stepped from the lunar module,

he became the first man to stand on the Moon, which 12 hours before he was not yet; but at no moment in his life, not even then he was named, did he become Neil Armstrong—he had always been Neil Armstrong. The linguistic phenomenon thus exemplified, and, for the modal case, brought into great prominence by Kripke, is thus unquestionable. The notion of rigid designation is not itself this phenomenon, but a technical device for representing it in a semantic theory. In my belief, Kripke is mistaken in holding that it is the only such device that will serve the purpose, and that, in particular, the notion of scope will not; but this is a detail. Even the technical devices themselves are of less importance than the linguistic phenomenon. Kripke argues, from the linguistic phenomenon as exemplified in modal contexts, that it proves that no proper name can have the same meaning as a definite description. He is disposed to regard this as a direct refutation of Frege's thesis that proper names have senses not uniquely determined by their bearers: for he interprets this as meaning that every proper name is equivalent to some definite description, and he therefore identifies Frege as a principal proponent of what he calls 'the description theory' of proper names.

This is a misinterpretation of Frege, supported by no single statement that he anywhere makes, but based only on a false generalisation from a very few examples given by him. There is nothing in the Fregean conception that proper names have senses to suggest that such a sense must be expressed by some definite description: all that can be said in general is that the sense of a proper name must determine its bearer, and must be capable of being grasped by an individual speaker: it can therefore, for example, consist, among many other things, in some means of recognising the bearer. That does not dispose of Kripke's objection, however. For Frege, proper names in the ordinary sense and definite descriptions belong to the same type of expression, for all members of which he in fact uses the label 'proper name' (*Eigenname*): his account of these expressions allows no place for a distinction between them that would explain the linguistic phenomenon noted by Kripke. He was indeed aware that many definite descriptions involve a tacit temporal reference to the time being spoken of, as with 'the population of Tokyo': but he showed no awareness that, as is apparent from the example about Neil Armstrong, the phenomenon is more extensive than that. Frege's semantic theory is one that allows no place either for modal operators or for temporal ones: in a Fregean language, there could of course be reference to times (by indexical terns like 'today' as well as by absolute terms such dates); but there could be no relativisation of truth-values to times, nor any correlative relativisation of the references of terms. It must therefore be conceded that his theory requires modification, perhaps by relativising truth-values and references, if it is to apply to a language exhibiting, either for modal or for temporal contexts, the linguistic phenomenon handled by Kripke by his machinery of rigid and flexible designators.

In a possible-worlds semantics, proper names and definite descriptions must accordingly be regarded as forming distinct subcategories of the category of singular terms, differing in being, respectively, rigid and flexible. It is important to grasp that this in no way goes to show that even the 'description theory'—which Frege did not hold—is wrong as an account of how the actual reference of a proper name is determined: for a rigid designator is distinguished from a flexible one solely by how its reference is determined with respect to possible worlds other than the actual one. To counter this proposal, Kripke needs an argument of a quite different kind. He never states such an argument in generality, but gives only specific examples. In these examples, he takes a definite description which might well be used to tell someone the bearer of a certain personal proper name, and then observes that we might discover that the description did not apply to the bearer of that name: e.g., where the name is 'William Shakespeare' and the description is 'the author of *Hamlet*', we might discover that it was not in fact Shakespeare who wrote *Hamlet*.

Kripke's alternative model is that of a chain of communication. A name is conferred upon a person or object by an 'initial baptism': thereafter, the name is passed from one speaker to another. The connection to the bearer is established by two things: the presence of the first link in the chain of communication at the initial baptism; and the intention of each subsequent link to preserve the reference. Someone who has picked up a proper name from some other speaker does not have himself to have the means to identify its bearer; he does not have to have accurate information, or, indeed, any information, about the bearer: he has only to intend to refer to the same person or object as that referred to by the speaker from whom he learned the name, and his intention is automatically fulfilled.

This doctrine renders an unintended shift of reference in principle impossible. That unintended shifts of reference do in fact occur was illustrated by Gareth Evans with the excellent example of 'Madagascar', which now unquestionably denotes the island, but originally denoted part of the mainland. For Kripke, the connection between name and bearer is *maintained* by the continued intention to preserve the reference, but it is *made* only by the initial baptism. For him, therefore, our current use of the name 'Madagascar' has no power to establish any connection between it and the island. Kripke of course makes his theory appear more plausible by concentrating principally upon personal names of individuals now dead, instead of on names whose bearers, like the island of Madagascar, are still with us to be encountered.

Frege's entire theory of sense is a theory of an *idiolect*, that is, of a language considered as manifested by the utterances of a single speaker at a single time. One of the great merits of Kripke's work together with that of Putnam, is that it directs attention to one aspect of the social character of language. A language is not a set of overlapping idiolects, and the attempt so to

describe it can only misrepresent it: it is essentially a social institution, based on shared conventions, that can exist only in virtue of the common participation of many. A speaker always purports to be speaking a particular language, and holds himself responsible to the accepted meanings of his words in that language. But he can also exploit the existence of these accepted meanings, by using words of which he does not himself fully know the meaning, although he knows enough to judge that what he is saying is true according to those meanings: he can therefore transmit information of which he is not himself fully possessed. This is, in fact, a pervasive phenomenon; it is particularly frequent in our employment of technical terms and of proper names. It is this phenomenon to which Kripke's chain of communication theory relates; and the phenomenon requires mention in any adequate general description of our use of language. A use of a word by a speaker who is relying on others knowing its full meaning is, however, a secondary use: what the speaker says means what it does in virtue only of its primary use—its use by those who do fully understand it; to the extent that that primary use is indeterminate, so is its meaning. We therefore need, as our basic account of the use of a proper name, a description of its primary use. The primary use of a name is governed by its users' ability to determine its bearer, an ability that does not depend essentially upon knowledge possessed by others; it is the primary use of the name 'Madagascar', for instance, that determines that it stands for the island. Frege's notion of the sense of a proper name may be explained as comprising the principles governing its primary use.

From this it is apparent that Kripke did not discover an alternative to the Fregean notion of sense, but, rather, drew attention to the prevalence of secondary uses of names (as of other words); and his account requires supplementation by an adequate description, which would no doubt differ for different types of proper name, of their primary use. These observations require two qualifications. Hilary Putnam first introduced the valuable notion of 'the division of linguistic labour'; but this has not yet been fully exploited. It has been applied principally to cases in which we may say that some people—the experts—completely understand the given word, while others, having only partial knowledge of its sense, are ready to defer to those experts, and at the same time exploit their existence. There may, however, be words of which no-one can be said to have a complete knowledge of what goes to make up their use in the language, considered as a social practice: that use is constituted by the employment of the words by members of different groups of speakers. Place-names are highly plausible candidates for being exemplifications of this possibility. If so, this should not unduly trouble an advocate of Frege's notion of *Sinn*; it is merely another example of the need to transform his theory from the mode of one governing an idiolect to that of one describing a social practice.

The second qualification concerns the very special kind of case that

Kripke chooses as his favoured examples—proper names of objects no longer in existence or no longer accessible to us. For such names, there must *have been* a primary use; but the notion of a current primary use appears more questionable. Clearly, there can be no present speaker who can *identify* the bearer; but may there not be a current primary use in the sense of a principle, known to some present speakers, determining the identity of the bearer? There may indeed: but, far more often than not, the overriding principle is deference to past users of the name. In this case, the current primary use will be related to the use made by former speakers—in some cases, former speakers in general, in others, the authors of particular surviving documents—as a secondary use is related to a primary one; it is just this that gives Kripke's account its immediate plausibility. We must not be seduced, however, into forgetting that it is the *current* use of the word in the language that determines its reference as it is used by present speakers, nor that the current use need involve no essential dependence upon past speakers. Even a name of a person long dead may shift in reference, as a result of a misapprehension; Gareth Evans pointed out that some believe that the name 'Goliath' was by mistake later transferred from one Philistine giant to the one killed by David. If we become aware of the mistake, but choose to continue to apply the name to the man with whom its original bearer was confused, that is our right: the reference of a name, as *we* use it, is determined by what we elect to treat as decisive when any problem arises.

NOTES

[1] Compare his criticism of Kant in section 89, in which he says that numbers are objects that are not given to sense or to intuition, with his comment on Kant in section 12, in which he says that, in the sense of Kant's *Logic*, it might be possible to call the number 100,000 'an intuition' (not: 'an object given to intuition').

[2] The subtitle of *Begriffsschrift* is 'a formula language of pure thought', although Frege later came to regret this subtitle.

[3] It is difficult to resist quoting here Frege's abusive comment in *Grundgesetze*, Vol. II, section 149, on some remarks of Weierstrass: 'If somebody who had never reflected on the matter were woken from sleep with the question, "What is number?", he would in his first confusion come out with expressions similar to those of Weierstrass'.

[4] Actually Mill held that the name is a label for the *idea* of its bearer, obviously a very different thesis; but it is difficult to discover from his text whether he regarded this idea as one that could be shared by different subjects.