

1. PREAMBLE

We shall try, in this paper, to clarify for the social scientist who is not a linguist what the goals and methodologies of linguistics are. We shall pay particular attention to what, as members of the SSRC Panel for Research in Linguistics and the Social Sciences, we have learned to call 'core linguistics'. This term was provided for us in our original remit; and it is our assumption that the SSRC would wish us to interpret the term, by identifying within linguistics some particular area that all linguists would recognize as being central to their subject as it is currently taught and practiced, and then to show how core linguistics, thus defined, is related to the social sciences by virtue of its data, its aims and its modus operandi. We shall pay less attention to those areas of what, for present purposes, may be referred to as non-core linguistics in which the SSRC has a long-standing, and presumably enduring, interest (e.g., sociolinguistics and psycholinguistics), since the relationship between linguistics and the social sciences in these areas is clear enough. There are, however, other areas of non-core linguistics (e.g., historical dialectology) whose actual or potential relevance to the concerns of social scientists may be less obvious. We shall say something about one or two of these areas by way of illustration, but we shall make no attempt to be comprehensive in our coverage of non-core linguistics.

The paper will have achieved its first aim, if, after reading it, the social scientist experiences the ah-now-I-see-what-they-are-up-to-response. It will have achieved its second aim if this response leads to continuing and generous support from the SSRC for research in both core and non-core linguistics.

2. LINGUISTICS AND CORE LINGUISTICS

Linguistics as a whole may be conveniently divided in terms of three dichotomies: theoretical vs. applied, microlinguistics vs. macrolinguistics, and synchronic vs. diachronic.

The aim of theoretical linguistics is the development and validation of a general theory of the structure and functions of language (or, alternatively, the construction of some general framework of theoretical categories for the description of languages); the goal of applied linguistics is the application of the findings and techniques of linguistics (in all its branches) to such socially desirable, and often officially sponsored, tasks as the design and improvement of language-teaching courses and methods, the training of teachers of the deaf and speech therapists, the construction of more efficient information-processing and information-retrieval systems, and the provision of specialized advice in language-standardization and literacy projects.

By 'microlinguistics' is here meant the investigation of language without reference, or with only minimal reference, to the social contexts in which language is employed, to the way in which language is acquired by children, to the psychological and physiological mechanisms which underlie the production and reception of speech, to the literary and aesthetic aspects of the use of language, and so on.

In short, microlinguistics studies language for its own sake as an independently interesting, identifiable and isolable phenomenon. Macrolinguistics, by contrast, is linguistics conceived more broadly: it embraces in principle all aspects of the acquisition and use of language, as well as the links between language and other kinds of communicative behaviour and social institutions. Several areas within macrolinguistics have been given terminological recognition (psycholinguistics, sociolinguistics, dialectology, stylistics, etc.); and some of these will be mentioned later in this report.

In view of the widespread confusion that exists on this point, it should be emphasized that the distinction between microlinguistics and macrolinguistics (whether it is drawn in these terms or not) is independent of the distinction between theoretical and applied linguistics. There is, in principle, a theoretical aspect to every branch of macrolinguistics, no less than there is to microlinguistics; and any part of theoretical linguistics, including theoretical microlinguistics, may be drawn upon in one or other of the several areas of applied linguistics. So far, and this has implications for the topic with which we are concerned in this report, there is not, and it is not clear that there can be in the foreseeable future, an integrated theory of language which covers the whole of macrolinguistics. For this reason, if for none other, advances in theoretical linguistics have generally been held, since the publication of Saussure's seminal Cours de Linguistique Générale (1916), to require some restriction of coverage. Few linguists have been as puritanical in their conception of the scope of theoretical linguistics as Hjelmslev (1943) was. But few again have been as catholic as Roman Jakobson, whose famous emendation of Terence's affirmation of humanism summarizes both his faith and his practice: Linguista sum, nihil linguistici a me alienum puto ('I am a linguist, and there is nothing that has to do with language that I consider foreign to me'). The problem is (as we shall see later) that, in default of an all-embracing theory of language that would justify Jakobson's aphorism, there is no one branch of macrolinguistics (e.g., psycholinguistics or sociolinguistics) that is obviously of more central concern to the linguist than are all the others. It does not make sense, for example, to ask whether microlinguistics, as we have defined it, is closer to cognitive psychology than it is to sociology. But if the field of theoretical microlinguistics is extended in one direction rather than the other and if theoretical microlinguistics is taken to be the central area within linguistics, there will almost inevitably develop among linguists a division between those, like Chomsky (1965), who opt for the theoretical integration of linguistics and psychology and those, like Labov (1974) or Halliday (1974), who think that linguistics should look towards sociology. But one might equally well seek to integrate microlinguistics with social anthropology, as was once the dominant tendency in this country and in the United States, under the influence of such scholars as Malinowski and J. R. Firth, on the one hand, and Boas and Sapir, on the other; or with logic and epistemology, as philosophically-minded linguists have always been inclined to do and as some of them are now doing, more energetically than ever, within the framework of the vastly enriched and technically complex framework of modern formal logic.

Each of these extensions of the field of microlinguistics is, in our view, legitimate; and, independently of differences in the interests and attitudes of particular linguists, which might lead them to pursue one rather than the other, any one of these potential extensions might, at different times, seem more promising than the others for the development of linguistics as a whole. The fact remains that what is central in linguistics must be defined, as it has

been ever since our subject became worthy of recognition as an autonomous, or relatively autonomous, discipline with reference to the questions that arise within theoretical microlinguistics. The reasons why this is so and the implications that it has for the rather complex relations, actual and potential, that hold between linguistics and the social sciences will occupy us in the main body of the report.

The third of our dichotomies will be as familiar to social anthropologists, and possibly to all social scientists, as it is to linguists. Briefly, a synchronic account of a language describes the language as it is at a given point in time; a diachronic (or historical) account of a language describes the structural changes that have taken place in that language between successive points in time. Since one language does not change into another overnight and not even the smallest changes in the structure of a language are instantaneous events taking place in real time, it follows that the separation of diachronic and synchronic linguistics is based upon the same kind of idealization of the phenomena that a social or economic historian would practice in describing the social or economic institutions of a particular community.

Synchronic linguistics is generally held to be logically and methodologically prior to diachronic linguistics, in that giving a diachronic account of how a language has changed between times  $t_1$  and  $t_2$  presupposes the identification of two distinct synchronic states of the language at  $t_1$  and  $t_2$ , but giving a synchronic account of the structure of a language at either  $t_1$  or  $t_2$  does not commit one, in principle, to looking at any other state of the language before or after the time in question. But this point must not be pressed too hard. We now realize, more clearly perhaps than did Saussure, who drew the terminological distinction between the synchronic and diachronic, that time provides only one of the dimensions of the abstract space within which we find and can measure variation between different states of the same language. There may be more difference between two socially-determined or regionally-determined dialects at  $t_1$  or at  $t_2$  than there is between the dialects spoken by some supposedly representative speaker of the language at  $t_1$  and some supposedly representative speaker of the language at  $t_2$ . Furthermore, at least some of the global changes that take place in languages in real time are no more than the effect of the complex interplay of synchronic social and geographical differences. Indeed, it is probably impossible in the last resort to draw a sharp distinction between synchronic and diachronic variation. But this, once again, is a problem that is familiar enough to social scientists in other fields. What must be stressed, for the benefit of the non-linguist, is the fact that the whole business of identifying social and regional dialects as distinct dialects of the same language involves the linguist in exactly the same kind of idealization of the phenomena as does his recognition that diachronically different language-states are distinct states of the same language. Indeed, to say that any two people speak the same language, or even that the same person speaks the same language on different occasions or in different situations, necessarily involves us in some degree of idealization. We return to this question of idealization in the section on methodology.

Here one further point must be emphasized in connexion with the distinction between synchronic and diachronic linguistics. Synchronic linguistics may or may not be an explanatory science: opinions differ. Diachronic linguistics, however, has always been seen as its purpose that of determining the causes of change, rather than that of simply listing the changes that have taken place in the attested stages of various languages. Of the causal factors

to which scholars engaged in this branch of linguistics commonly appeal there are some that might be described as being purely microlinguistic, in the sense that they are internal to the language-system as such: i.e., they are independent of the use to which the language is put, of the physiology and psychology of language-production and language-reception, etc. These microlinguistic factors do not concern us here; and no linguist would claim that a comprehensive and satisfactory theory of language-change can be constructed that does not draw upon at least some areas of macrolinguistics. There is therefore an almost necessary connexion between diachronic linguistics and macrolinguistics, even though diachronic linguistics might be dealing with language-states whose synchronic description would not necessarily involve the linguist in macrolinguistic considerations. This paradox, if paradox it is, shows how complex the relations can be within the field of linguistics itself.

There is yet another paradox which we must take into account when we formulate our definition of core linguistics on the basis of the three dichotomies. It is this: although synchronic linguistics is logically and methodologically prior to diachronic linguistics, the findings of diachronic linguistics can make an essential contribution to theoretical synchronic microlinguistics. One of the problems that faces the linguist (and it is a problem that faces scholars in many disciplines) is that of justifying one kind of model rather than another, or one analysis of the data rather than another. There will be some discussion of this question in the section on the methodology of core linguistics. At this point, it should be emphasized that even Hjelmslev, whose conception of theoretical linguistics we described earlier as being extremely puritanical, recognized that arbitrariness must be tempered with appropriateness and that one of the criteria for the greater appropriateness of a particular analysis is that it should square with what we know of the historical development of language-systems. This criterion is probably applied more often unconsciously than consciously by most linguists, who, unless they have been trained as specialists in diachronic linguistics, might be unable to explain in detail why one way of looking at a language seems to be more appropriate than another. When it is consciously and sensitively applied by a master-craftsman like Benveniste ( ) or Kuryłowicz ( ), it can be a very powerful criterion indeed. The fact that we do not go into the methodology or aims of diachronic (or historical) linguistics in the main body of the report should not be held to imply that we consider this part of our subject to be irrelevant or of secondary importance.

So much then for the three dichotomies. Core linguistics, as we have interpreted the term that appears in our remit from the SSRC, may now be identified, succinctly, as theoretical synchronic microlinguistics. Research project applications that have come to the Panel as single-subject applications have been judged in the light of their potential contribution to core linguistics so defined. Cross-disciplinary applications, on the other hand, have been judged in terms of their potential contribution to one or other of the areas of macrolinguistics that comes under the aegis of the SSRC and, in so far as we have been able to do this, to disciplines other than linguistics. From what has been said in this section, it will be clear that our interpretation of the term 'core linguistics' has not been as narrow as its explicit definition might imply. The fact that the main thrust of a particular research proposal has been in macrolinguistics or in diachronic or applied linguistics has not of itself disqualified the proposal in our eyes. If it seemed to us that the expected results of the research were also of value for core linguistics and if the application in question could not be regarded as cross-disciplinary, we have in all cases treated the application as falling within

core linguistics.

### 3. GOALS AND SCOPE OF CORE LINGUISTICS

The criterial feature of core linguistics is not the fact that its practitioner studies language, but the particular ways in which he studies it. The particular ways in which he studies language are not easily encapsulable in a phrase, largely because what they are depends crucially on a notion of levels of analysis and a firm grasp of the concept of idealisation--a concept that is familiar enough in theory construction, but one whose application in linguistics may require some explanation.

Difficult or not, we shall try in this report to lay out a view of at least the major levels and the ways in which they may be studied. We shall then try to show that the relation of linguistics to the social sciences is most helpfully seen as a relation that, while it is closer at some levels and more distant at others, is ultimately an ineluctable one. Language-behaviour is a form of social interaction through words in structures.

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In seeking to establish this stance, the argument will move between two views that are sometimes held to be antithetical, but which, we shall argue, are necessarily complementary; namely, the view, on one hand, that linguistics is an autonomous and self-sufficient science, and, on the other hand, that it is a subject ancillary to sociology, psychology, anthropology and others. The view advanced here is that, paradoxical though this may appear, linguistics (and by 'linguistics' in this section of the report we mean core linguistics) is both an autonomous and a dependent discipline. Put succinctly, it will be argued that there is a central body of questions and knowledge which is sufficiently coherent and autonomous for linguists to study in isolation, but that achievement in this study requires an openness and flexibility to the research of adjacent fields. It will also be argued that what we are calling adjacent fields (i.e., disciplines which by virtue of their subject-matter have a natural affinity with linguistics) are in certain respects as dependent upon linguistics as linguistics is on them. Some of the adjacent fields are usually grouped as social sciences (psychology, sociology, social anthropology); some as humanities (philosophy and literary criticism); some are grouped as natural sciences (physics, neurophysiology, engineering); some are uneasily pigeon-holed (zoology and computer science). The richness of its relations is, at different points in a linguist's working life, a foul curse and a golden boon.

Openness and flexibility of approach are particular requirements of a linguist since his subject matter, language, is merely a sub-field of a wider, more embracing subject that urgently needs integrated research, namely communication. It is obvious that a great deal of communication that goes on between people is not through language at all. In any ordinary interaction, information about social relations and attitudes is conveyed, reasonably quickly and clearly, long before any language is used. We have our counterparts of the vertical silent-bared-teeth display versus the horizontal silent bared-teeth display of the chimpanzee, Pan troglodyte (Argyle 1972).

Looking at communication more broadly, we can readily distinguish, as such scholars as Brown (1958) have done, at least two kinds of communicative behaviour, the referential and the social: the former has as its function the transmission

of propositional information (i.e., information of which it makes sense to enquire whether it is true or false); the latter is directed towards the establishment and maintenance of social relations, the regulation of joint activity and the expression of the speaker's personality and will. It is not difficult to identify and label yet other communicative functions of language. One might split the social function, as did an earlier psychologist, Bühler (1934), and following him many linguists of the Prague School, into the expressive and the conative; and one might add to these, as did Jakobson (1960), responsive in his catholicity of outlook to the appeal, not only of psychology, but also of semiotics and aesthetics, the phatic, the metalinguistic and the poetic. Alternatively, one might draw the major distinction, as did Ogden & Richards (1923) or, for different reasons, the logical positivists, between the referential (or cognitive) and the expressive (or emotive)--a distinction which several linguists have also made use of (cf. Ullmann, 1962); or between the semantic (narrowly defined) and the pragmatic functions of language--a distinction which goes back ultimately, through Morris ( ), to Peirce ( ), but which has been radically reinterpreted by such philosophers as Carnap ( ) and Tarski ( ) and is now the foundation-stone of what has come to be called formal semantics, in which linguistics and logic are jointly involved. It suffices for the purpose of this report, having drawn attention to these various alternatives and refinements, that we should draw a broad distinction between the referential and the social and that we should operate with that.

It would be futile, in this context, to enquire which of these two functions, if either, is more basic than the other. The answer to this question would be very largely determined by the interpretation that is given to 'basic' and the metatheoretical prejudices of the person answering it. Someone whose leanings are towards reductionism, positivism and the unity of science might say that it is the social function of language that is more basic; someone else, more impressed with the distinctiveness of human nature than with the continuity of the morphological and functional relations between man and the other animals and seeing in language one of the most evident marks of this distinctiveness, might well say that the referential function is the more basic; and he would be all the more likely to take this view if he were a rationalist rather than an empiricist, or a mentalist rather than a physicalist, or an idealist rather than a realist, and if he had a particular interest in epistemology and logic or non-behaviouristic cognitive psychology, rather than in ethology, evolutionary biology or social psychology.

Neither of these two views is to be condemned outright. Each of them is defensible under a different and equally legitimate interpretation of 'basic'; and each of them has its proponents amongst linguists. That they appear to imply incompatible views of the relationship between linguistics and adjacent fields is perhaps no more than a consequence of the way boundaries are currently drawn between other disciplines, or between particular subfields within nominally unified disciplines (e.g., between cognitive and social psychology, or between the philosophy of mind and the philosophy of action). Linguistics reflects these divisions because its subject-matter, language, is of vital importance in so many areas of scientific or philosophical enquiry.

It is important, however, to emphasize the centripetal, as well as the centrifugal, forces within linguistics: to do otherwise would be to present a distorted picture of the subject itself and of its relations with adjacent fields. Many other disciplines including several of the social sciences have an interest in language; and the way they look at language will be determined

by what they take to be their own central defining questions and presuppositions. Only linguistics has language for the whole of its subject-matter. The central question for the linguist, then, is 'What is language?'; and it is one of the fundamental assumptions of linguistics, upon which the unity and coherence of the discipline depends, that the presuppositions implicit in this question are satisfied. We assume that there is something, within communicative behaviour in general, that is pre-theoretically isolable and identifiable as language-behaviour and that underlying language-behaviour, in whatsoever society it may be manifest, and in whatsoever situations or circumstances, there are certain structural principles in terms of which it makes sense to say that, despite their differences, English, Thai, Hindi, Malay, Yakut, Nahuatl or Twi are all languages.

That all languages are pre-theoretically identifiable as such and have certain features in common (other than that they are systems of communicative behaviour) is one of the assumptions or postulates upon which linguistics is founded. To determine what these features are and to establish the range of variation that is possible within the totality of communicative systems that share these common features (i.e., to answer the question 'What is language?' and to establish a typology within which every actual language can be placed) is the central purpose of what we defined in the previous section as theoretical synchronic microlinguistics. Less central, from the linguist's point of view, is the answering of questions that scholars in adjacent disciplines might regard as being, from their point of view, of central importance--questions that we defined in the previous section as being macro-linguistic.

To say that languages are pre-theoretically identifiable as such does not imply that the boundary between what is and what is not language is absolutely sharp. It is not. But this is no more troublesome for the linguist than it is troublesome for the biologist that there is no absolutely sharp distinction, pre-theoretically, between living organisms and inanimate matter; or for the physiologist and the doctor that there is no absolutely sharp distinction, prior to the authoritative selection of one criterion rather than another as definitive, between life and death. And the linguist is probably better off than most social scientists are in this respect. What counts as language and what is to be regarded as non-language, in the whole complex of normal communicative behaviour, is not open to serious dispute except in a relatively narrow area. Distinctions of grammar and vocabulary unquestionably belong to the language-system. So too do the phonetic distinctions, (including stress and intonation) that serve to maintain them. Other aspects of normal language-behaviour--posture, facial expression, gesture, eye-contact, on the one hand, and the various modulations of the vocal signal that are summarized in the non-technical term 'tone of voice', on the other--are generally classified as paralinguistic and held to be of peripheral, rather than central, concern to the linguist. It is with respect to the boundary between the linguistic and the paralinguistic that the distinction between language and non-language is, pre-theoretically, unclear; and there is no single, generally-accepted criterion that will serve to draw the distinction sharply in all cases. But the fact that one linguist will treat as paralinguistic certain features that another will classify as linguistic is not a serious problem, since the range of such features is quite narrow; and there is no disagreement as to what is more central and what is more peripheral.

Two points must be emphasized before we move on. The first is that, in classifying some feature of normal language-behaviour as peripheral, the linguist does not thereby imply that it is unimportant and plays no part in

the interpretation of utterances, but merely that, unless he is especially interested in the theoretical integration of language-behaviour with social interaction in general, he considers that he is entitled to disregard all but what he defines to be central. The second point to be emphasized here is that, although the communicative function of the paralinguistic components of language-behaviour is primarily, and perhaps exclusively, social (and expressive), the communicative function of the more central components is far from being exclusively, or even primarily, referential. There are correlates of such socially important categories as sex, occupation, status, age and class in every distinguishable component of language-behaviour. Furthermore, the interpenetration of the two communicative functions of language, even if they are distinguishable without difficulty at the extremes (scientific discourse at one extreme and what Malinowski called phatic communion at the other), is as subtle and as complex as the interpenetration of the structurally distinguishable components of language-behaviour. To analyse the subtlety and complexity of their interpenetration requires the co-operation of several disciplines in addition to linguistics. But linguistics has its own specialized role to play in this interdisciplinary endeavour; and a recurring sub-theme of this report will be the claim that a pre-requisite of research into language, for whatever purpose, is at least a proper competence in the central body of linguistic theory.

To sharpen the notion 'level of analysis', let us consider an ordinary utterance and, as a point of departure, a listener. The simplest act that a listener can perform is to listen to and to hear the utterance (in a rather special sense of the term 'hear' which further discussion will clarify). Even if the language is incomprehensible, the listener can still hear the utterance and respond to it in terms of some discriminative set (loud? fast? friendly? male? female? child? etc.).

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Given that an utterance is heard, the next level involves matching it as a pattern of sound familiar to the listener as a user of the language. The ability to match an input can be tested by psychologists by asking listeners to echo what they hear; a wide variety of experiments on perceptual confusion and rote memorisation can be summarised as tests of a person's ability to repeat the speech he hears under various conditions of audibility or delay.

Given that a listener can hear and match an utterance, a further question to ask is whether he will accept the utterance as a sentence of his language. At this level we encounter processes that are undoubtedly more difficult for the psychologist to study experimentally. But it is possible to measure the extent to which a listener's ability to accept the utterance facilitates his ability to hear, match and recall it; grammatical sentences are easier to hear, utter and remember than non-grammatical strings of words, and nonsense, such as the Carnapian Pirots karulize elatically, is easier to handle if it looks grammatical.

Given that a listener can hear, match and accept an utterance, another question is whether he can interpret it semantically. Crudely but crucially, interpretation involves two processes: (i) assigning meaning to the individual words of the utterance, and (ii) assigning meaning to the relations in which those words stand to one another. Max hates Alice, and Alice hates Max have the same words but manifestly different meanings. Revolutionary new ideas appear infrequently and Colourless green ideas sleep furiously appear to have the same structure, but pose very different problems of semantic interpretation.



Given that a listener can hear, match, accept and interpret an utterance, there is also the question of whether he understands it. By distinguishing understanding from interpreting, we want to point up the familiar observation that the response to an utterance invariably goes well beyond processing the information that is contained in the utterance itself. Many linguists, notably J. R. Firth and his followers in this country, have consistently emphasized the degree to which the full understanding of an utterance is dependent upon the situational and cultural context in which it occurs. Such contextual information lies well outside most linguists' models of the grammar or vocabulary of a language: it is worth noting, however, that some linguists at least have been arguing recently that no sentence can be said to be either grammatical or interpretable except in relation to a given context of utterance. Eric Berne's The Games People Play, exploits this context-dependence of ordinary language within a psychological and (as we understand it) basically Freudian framework. For the ethnomethodologists, on the other hand, the contextual, or indexical, information is not so much psychological as sociological—a matter of the creation of status or role in an interactional sequence. ('Status ... cannot be ascertained without reference to the interactional sequences of everyday life', and '... the critical feature of role ... lies in its construction by the actor over the course of interaction': Cicourel, 1973.)

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Given that a listener can hear, match, accept, interpret and understand an utterance, there is, perhaps finally, the question of the listener's attitude to the utterance: the perlocutionary effect that it has upon him (cf. Austin, 1962). If it is a statement, he may or may not believe it. (For example, if the utterance were There are three unicorns in the garden, the listener may hear it, match it, accept it, interpret it and understand it, but yet refuse to believe it.) Similarly, if it is a question rather than a statement, he may reject the presuppositions of the question (cf. Have you stopped beating your wife yet?); and, if it is a command, he may refuse to accept the authority of the person issuing the command and thus the validity of the command itself. Again, he may approve or disapprove of what is said (or of the way that it is said): i.e., he may evaluate the utterance, either morally or aesthetically. These, and other, reactions that a listener might have to an utterance we subsume under the term 'attitude'.

Out of these six possible approaches to an utterance (and we would emphasize, firstly, that they are not to be thought of as temporally successive stages in the process of speech-reception and, secondly, that the terms that we have used to refer to these analytically distinguishable aspects of what is a complex integrated process have been chosen ad hoc), the linguist would ordinarily select three as related to the central body of questions and knowledge that constitute the heart of his discipline: namely, matching, accepting and interpreting. The terms that he uses for the corresponding areas of study are phonology, syntax and semantics.

By phonology a linguist means the study of the systematic organization of sounds (including stress and intonation) in so far as they are invested with significance in particular languages. The analysis of speech-sounds in physiological and acoustic terms is called phonetics.

If the goal the phonetician sets himself is the analysis and synthesis of speech with the aid of electronic and other laboratory equipment, the most relevant adjacent fields would seem to be physics, engineering and computer science, rather than the social sciences. But what we have referred to

above as hearing obviously has (no less than matching does) a psychological dimension; and any research that has as its aim the better understanding of how utterances are heard (in so far as this can be separated from matching) will necessarily bring phoneticians into close collaboration with psychologists. The social relevance of research in this field is seen in the contribution that it can make to the training of speech-therapists and teachers of the deaf and to the design of computer-systems for printing what we say and saying what we print.

A sociologist or anthropologist whose work involves the recording of utterances needs to draw on that aspect of a phonetician's work concerned with conventional alphabets for transcribing utterances. Ordinarily, a phonetic transcription is held by non-linguists to be a theoretically-neutral description of the articulatory characteristics of the utterance. It is less misleadingly viewed, not as a description, but as an analysis of the sounds. It would be difficult to overstress the point for the non-linguist that the act of transcribing is not a simple act. The symbols used to record the sounds depend crucially on theories about sound patterning in language: more briefly, on phonological theories, theories about what is and what is not a significant sound, what are and what are not the distinctive sound features of a language. (The relationship between phonetics and phonology is more complex than our simplistic and ad hoc explanation of the difference between hearing and matching might suggest.) Research by a sociologist or social psychologist on conversational interaction, or by a developmental psycholinguist on child language acquisition could be vitiated by a lack of competence in phonetic and phonological theory.

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It would be seriously misleading to leave an account of phonology as simply the study of the sound systems of some languages. It would be seriously misleading because it would leave out the dual nature of the linguist's task. The linguist, as well as providing a local account of the sounds and sound system of some one language, is also seeking a general account of the classes of possible sounds and sound-systems that might occur in natural languages. The linguist is professionally strabismic; he invariably has one eye on the language under investigation, the other on a possible general theory of language that might account for what is found in particular languages. He draws a distinction between theories of language and the grammars of languages. But, according to one conception of the relationship between the general theory and the language-particular grammars, a particular grammar may be thought of as a theory about one specific natural language and the general theory may be conceived as a higher-level universal grammar which, by formally prescribing what is possible and proscribing what is impossible in languages, defines the nature of language; and, even if the linguist does not take this essentially Chomskyan view of the relationship between the general theory and language-particular grammars, he will nonetheless be concerned, as we saw earlier, to determine the range of variation that is possible across the languages of the world and to group actually attested languages as exemplars of variant language-types.

By syntax, a linguist means again both the study of the structures and their relations that the combinatorial processes of a particular language permit, and a study of the possibly universal constraints on combinatorial systems in language. The first task is analytical-descriptive. The infinite variety of sentences is to be reduced to a relatively few types of construction, each being represented in terms of a limited set of syntactic categories. The description should display the kind of hierarchical order of constituents, within constituents an order which is now generally referred to as 'phrase-

structure'. Further investigating the relationship between different sentential structures, the syntactician may seek to explain, for example, why in English a string of elements underlying an utterance such as Chomsky is eager to understand has the congener Chomsky's eagerness to understand, but an apparently similar string of elements underlying an utterance such as Chomsky is easy to understand has no such congener as Chomsky's easiness to understand. More generally, a syntactician seeks to explain such phenomena as the following: that in all natural languages it seems to be impossible to derive interrogative or relative clauses of certain kinds, though it is possible in all languages to derive interrogative or relative clauses of other kinds. For example, given the ambiguous sentence Max kept the car in the garage (which may be understood as implying that the place in which Max kept the car was the garage or that the car which Max kept was the one in the garage), then what calls to a syntactician for explanation is the observation that the related interrogative and relative constructions (Where did Max keep the car? and The garage that Max kept the car in was damp) have only one of the possible senses. A number of proposals have been made to account for related phenomena in English and other languages in terms of putative differences in underlying structures. While none of these proposals is wholly satisfactory, they do mark the desire of the linguist to find universal constraints on the form of grammars.

Intermediate between syntax and phonology (and sometimes assimilated to the one or the other) is morphology, which is concerned with the combinatorial processes occurring within words. As syntax might account for the fact that Chomsky's easiness to understand is not a grammatically acceptable English noun-phrase (despite its obvious interpretability) and phonology for the fact that bnik is not an acceptable word-form (despite its pronounceability), so morphology would account for the unacceptability, as English words, of such forms as badlier, amusingest, hens's or idealizement (instead of, or in addition to, worse, most amusing, hens' and idealization). All of these illustrative forms are phonologically acceptable in English; and there is no purely syntactic rule whereby their unacceptability might be explained. But each of them can be shown to violate some principle, of greater or less generality, which determines the formation of English words. In more traditional approaches to the analysis of language, and more particularly in the standard handbooks of the older Indo-European languages, morphology (or at least the part of it that is usually referred to as inflexion) is held to be complementary to, and co-ordinate with, syntax; and, in so far as languages were grouped into variant grammatical types by earlier generations of linguists, these typological classifications were based on morphological criteria. From this point of view Classical Chinese was seen as being radically different in its grammatical structure from Classical Latin, and the vast majority of the world's languages were held to fall at various points between these two extremes. Nowadays, differences of morphological structure are no longer seen as being the most important differences between languages. Indeed, it is arguable that there has been a tendency in much of the more recent work in theoretical linguistics to pay insufficient attention to morphology. However that may be, it is clearly up to the linguist to determine, if he can, the degree to which the range of morphological variation across the languages of the world is constrained (as it is hypothesized that both syntactic and phonological variation is constrained) by universal formal principles.

By semantics, a linguist means a study of the ways in which words are related to one another in terms of their meaning, both to other words and to the persons, things, events, etc. that they stand for; of the ways in which the

p. 6:

meaning of sentences is related to the meanings of the words they contain; of the ways in which sentential meanings are related to one another, as they are employed in discourse of various kinds and in social situations; of the ways propositions expressed by certain sentences entail the truth or falsity of the propositions expressed by other sentences; of the ways that sentences that are syntactically 'correct' may be semantically anomalous (e.g. contradictory or tautologous), or ambiguous or equivalent in meaning to other sentences.

In brief, the linguist studies both in a particular and in a universal sense, the system of sounds in natural languages (the phonology), the system of structures (the syntax), and the system of meanings (the semantics). But he does not ordinarily study all the variation of sound, structure and meaning that is observable in language-behaviour. He studies the phonology, the syntax and the semantics under a rather severe idealization. From ordinary everyday language-use, he abstracts for the purpose of research an idealized language-system. He does this for the same reason that any other scientist does, namely to isolate an entity that is sufficiently determinate to be analysable. Linguists vary widely in the degree to which they recognize and practise idealization of their subject-matter, but ordinarily they would agree that they are not in business to describe a single idiolect (i.e. the language-system underlying the language-behaviour of a single speaker) at a single point in time; and, however reluctant certain linguists might have been at times to face the consequences of this fact, there is no way of avoiding some degree of idealization. Indeed, the very notion of an idiolect (even if we grant that for some purposes it may be a useful notion) involves the linguist in essentially the same process of idealization as does the notion of a uniform language-community. There are both random and systematic variations in the language-behaviour of a single individual; and there is no guarantee that the individual's internalized grammar and dictionary of his native language is ever static. In short, the idiolect is as much a theoretical construct as is the idealized language-system postulated by Saussure or Chomsky as uniform throughout the whole language-community.

Idealization, as it is practiced by the linguist, may be split into three sub-processes (cf. Lyons, 1972): regularization, standardization and decontextualization.

By regularization we mean the deliberate discounting of those features of utterances--let us call them distortions--that can be attributed to such factors as distraction, intoxication, channel-noise, imperfect feedback, changes of communicative intention in the course of the utterance itself, and various kinds of physiological and psychological malfunctioning. There are of course methodological problems involved in regularizing the data; and there is the very real danger of over-regularization. One of the lessons that every linguist must learn as part of his training is the extent to which almost everyone's view of what he and his fellows would say when they are speaking normally is itself distorted, whether directly or indirectly, by the canons of correctness taught at school. But the slogan that was once in vogue in linguistics, 'Accept everything that the native speaker says in his language and nothing that he says about it', is simply unworkable, if it is held to imply that no regularization of the data at all is permissible. Nor should the linguist feel apologetic about regularizing his data, provided that the methodological controls upon a too ready and too convenient application of the process to theoretically recalcitrant data are as stringent as they are in other disciplines.

There are occasions, of course, when the distortions that the linguist would normally eliminate from his data are not only included in the data, but become the primary focus. The linguist might be collaborating with a psychologist or a neurophysiologist in the investigation of the mechanisms underlying language-behaviour; with a speech-therapist, in the design of a course of remedial treatment; with a psychiatrist or social psychologist, in the determination of the degree to which the incidence of distortions varies as a function of anxiety, etc. In all such cases, however, the distortions must be recognized as such if they are to be useful as data; and they cannot be recognized as such except in terms of what is regular and undistorted.

The process of standardization is more controversial. But, once again, it would seem to be both inevitable in practice and defensible in theory. Whenever we say that two different people are native speakers of the same language, or even that the same person is speaking the same language on one occasion as he is on another, we are abstracting from a variety of systematic differences and style. It is a truism that there is not, and to our knowledge never has been, a community of people, all of whose speech is identical in pronunciation, grammar and vocabulary on all occasions. The linguist is nonetheless justified in his counterfactual postulation of uniformity, provided that he can be reasonably sure: either (i) that he is dealing with phenomena with respect to which there is no systematic variation across independently identifiable styles and dialects, or (ii) that such variation as there is will not invalidate the theoretical generalizations that he makes on the basis of the data. Clearly, it is no simple matter to establish the reasonableness of assuming that either (i) or (ii) holds in any particular case. But the principle is sound enough; and, even if as sociolinguists or stylisticians, we are concerned with systematic variation as something which has its own communicative function, we still have to standardize the data to the extent that we discount any variation other than that which our model of an ideal non-uniform language-system can handle. It is pointless to argue, at a metatheoretical level, that a model which allows for variation is, by that token alone, a more realistic model of the language-system operative within a language-community than one that does not. Everything depends upon the theoretical questions that the model is designed to answer.

By decontextualization is meant the abstraction of utterances from the linguistic and non-linguistic contexts in which they occur. From what has been said earlier about the distinction between interpreting and understanding, it will be clear that our ability to draw and make use of this distinction depends upon the application of the principle of decontextualization. What may not be so clear to the non-linguist is the fact that the vast majority of the utterances that we produce, as we go about our normal everyday business, are not sentences. Nor are they sequences of sentences, as one might suppose from the conventions of punctuation and capitalization that have developed and been standardized by printers and editors of written texts over the centuries. Anyone who has faced the problem of transcribing relatively informal and unscripted passages of spoken language will know that, even after they have been regularized, they will be such that they cannot always be segmented non-arbitrarily and without residue into non-overlapping fragments, each of which has the grammatical properties that we associate with sentences. There is a gap to be bridged, therefore, between texts (or discourses) and sentences. Some linguists bridge this gap by

by extending the notion of grammar beyond its traditional limits and writing rules for the generation of well-formed (or cohesive) texts. Others take the view that the sentence is the maximal unit to which the notion of grammaticality is applicable. It remains to be seen which of these views will prevail. Under either view of the limits of grammaticality there will be some degree of decontextualization, since no text will contain all the information that is required for its complete understanding.

The idealized language-system that the linguist postulates as underlying the data is considered in abstraction from the social and psychological matrix in which language operates. This abstraction is at the root of the linguist's conception of language as a system of systems, each system (phonological, syntactic and semantic) having its own principles of well-formedness and each bearing an as yet poorly charted relation to what the linguist, for his purposes, treats as being outside the language-system. The central question that the non-linguist might ask of the linguist, 'What is language?' is now broken by the linguist into a series of discrete questions, 'What is a phonological system?'; 'What is a syntactic system?'; 'What is a semantic system?'; 'How do these systems interrelate?'. It is the tentative answers provided by theories concerned with these questions that constitute the body of knowledge that is essentially linguistic. The depth and complexity of these questions, allied with the considerable ignorance we have of the precise nature of the systems and their interactions undoubtedly make some linguists extremely cautious about broadening their domain of enquiry beyond what we defined in the previous section as the most narrowly microlinguistic conception of their subject-matter. This caution, at its best, is a linguistic counterpart of the natural scientist's concern to isolate for investigation a reasonably determinate entity. A linguist may understandably feel that to admit data from the sociological and psychological aspects of language-use is likely to make more, not less, difficult the systematic study of what are for him the central questions; and, as we pointed out above, in the current state of the adjacent disciplines it would seem to be impossible to integrate linguistics simultaneously with all of them.

Attractive as this retreat into an insulated self-sufficient discipline may seem at times, it is arguable that it is ultimately indefensible. Equidistant between several adjacent disciplines and unable to choose between them, linguistics is all too likely to suffer the fate that Buridan's ass did in similar circumstances. The fact that we have to idealize our data and, in doing so, to exercise the same kind of methodological controls that the psychologist, the sociologist or the anthropologist does, means that linguistics can benefit from the techniques that these disciplines have developed. It is impossible to carry out any kind of research into language (with the possible exception of certain kinds of phonetic research) without becoming involved in the problem of subjectivity. An indispensable pre-condition of linguistic research is that one assumes that the judgements of native speakers on the utterances they produce and accept are, within tolerable limits, trustworthy.

There was a time when some linguists (notably the so-called post-Bloomfieldians) tried to circumvent the necessity of relying, at some point, upon the subjective judgements of their informants by relying instead upon a sufficient body of material, preferably unsolicited and recorded in situations of actual use, and assuming that statistical extrapolation from this

data-base would determine whether non-attested potential utterances were acceptable or not. Apart from the problems attaching to the phase of idealization that we have called regularization, this methodological principle has the disadvantage that it simply does not work; and there is no reason to believe that it can be made to work (cf. Chomsky, 1957). This does not mean that there is no scope for the use of statistical techniques (controlled sampling, measurements of significant deviation, etc.) in linguistics. What it means is that the linguist has to be able to get judgements from native-speakers on sentences that neither they nor anyone else may have ever uttered - not only judgements of acceptability, but also judgements as to whether the truth of the proposition expressed by one sentence implies the truth of the proposition expressed by another. There is no point in making a fetish of objectivity if the data we have to work with is necessarily subjective.

D → But competent evidence for the judgements native speakers make, or are assumed to make, is often extremely difficult to find. It is certainly not found by merely introspecting one's own judgements or by investigating how one's own judgements are likely to have arisen. However, setting aside the problem of establishing judgement, it is the subjective nature of the data of linguistics that links the discipline unmistakably with the social sciences rather than the natural sciences. The methodology of the natural sciences assumes a process whereby inherently time-independent and person-independent judgements are formulated out of time-dependent and person-dependent judgements. It requires us to substitute temperature for judgements of hotness, weight for judgements of heaviness, wavelength for judgements of colour, seconds, minutes, hours for our judgements of the passage of time. The only judgements the natural sciences trust us to make are those that show no differences with respect to, say, a pointer on a meter calibration. Physicists, for example, never accept as evidence an observer's judgement of time, distance, temperature, colour and so on. This procedure of doubting and setting aside judgement is a crucial aspect of the methodology of the natural sciences. It amounts to a readiness to reject evidence that does not accord with a conception of uniformity established by mechanical or electronic devices. But linguistics cannot accept this principle without being condemned to futility. The subjective nature of the data poses a problem then for linguistics. It is important to realise, however, that it is a problem that faces the social sciences generally; and there is no reason to believe that the linguist's tests for acceptability and equivalence, provided that they are properly applied, are any the less reliable than are the methods used in the other social sciences. What the linguist does, in principle, in writing a grammar of a particular language is to construct a theory of well-formedness that holds minimally for the clear cases and to let the theory itself decide the unclear cases.

p. 8: It is not only the subjective nature of the data that links linguistics with the social sciences. So too does the necessity of relating the ideal systems (be they phonological, syntactic or semantic) to the actual use of language in everyday life. At this point the linguist is, admittedly, going beyond what some linguists would take to be their central concern. But even these linguists will agree that their discipline should at least cooperate with other disciplines in accounting for as much of actual language-behaviour as it is possible to account for scientifically. As soon as he becomes concerned with the correspondence between language-behaviour and what he postulates as the idealized underlying language-system, the linguist

becomes involved, whether he likes it or not, in social and psychological matrix that language is embedded in. One of the great founding fathers of modern linguistics, E. Sapir, wrote in 1929 "It is peculiarly important that linguists, who are often accused, and justly accused, of failure to look beyond the pretty patterns of their subject matter, should become aware of what their subject may mean for the interpretation of human conduct in general." Sapir went on: "Whether they like it or not, they must become increasingly concerned with the many anthropological, sociological and psychological problems which invade the field of language". The linguist's particular problem is to both study his 'pretty patterns' at all levels of analysis and still seek their relation to the wider problems of human conduct in general.

#### 4. THE METHODOLOGY OF CORE LINGUISTICS

Among the varied ways that linguists study language two approaches constantly recur in the literature as a matter of debate. This report will again suggest that the approaches are not antithetical but complementary. Thus, the role of a funding body is not that of preferring one to the other, but of seeking quality in either. One approach, sometimes referred to as the data-oriented inductive approach, is to consider language as an existent human phenomenon and study what occurs, with the help of various theoretical notions and partial theories, but without any explicit, comprehensive and integrated 'theory of language'. The other approach, sometimes known as the model-oriented deductive approach, is to construct models of possible language-systems and then test them for their adequacy in accounting in a simple and revealing way for the structure of natural languages. A great part of the considerable impact that Chomsky had on theoretical linguistics in the fifties and sixties arose from his advancing a persuasive form of the second approach.

A more reasonable view of scientific enquiry would not see these approaches as opposites, but rather as different stages in the process of enquiry. Long ago, F. S. C. Northrop ( ) delimited three stages of enquiry: (i) the analysis of the problem; (ii) the natural history stage (i.e., the stage characterized by Baconian, inductive methods of observation, description, and classification); and (iii) the stage of deductively formulated theory. Northrop insisted that there is not one method of scientific enquiry for all subject matters or for all the stages of enquiry of a single subject matter. A scientific method, he argued, is relative to the stage of enquiry as well as to the type of problem under analysis. In fact, Northrop warned that if one proceeds immediately to the deductively formulated type of scientific theory which is appropriate to the third stage of enquiry, before passing through the natural history stage, the result is inevitably 'immature, half-baked, dogmatic and for the most part worthless theory'. (He might presumably equally well have issued a warning against remaining inundated with data in the natural history stage).

Granting the reasonableness of this view of the many-sidedness of scientific enquiry, it is not difficult to see in current linguistics that both approaches and their attendant different methodologies are rife. But they are perhaps most sharply opposed in two of the currently fashionable research areas on the fringe of linguistics: formal semantics and ethno-methodology. (These areas it should be noted, represent extremes: the bulk of linguistic research lies between these poles.) David Lewis, among the most eminent of current formal semanticists, is clear as to the nature



of the problem. He writes (1972): "I distinguish two topics: first, the description of possible languages or grammars as abstract semantic systems whereby symbols are associated with aspects of the world, and second, the description of the psychological and sociological facts whereby a particular one of those abstract semantic systems is the one used by a person or population. Only confusion comes of mixing these two topics". Clearly the appropriate methodology for a formal semanticist is to devise artificial languages, which can be kept under strict control by means of the stipulative definitions with which they are introduced, and then seek to embody in such logical languages more and more of the features possessed by the natural languages we use in our everyday lives.

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Unlike the formal semanticists, ethnomethodologists start with some actual instance of conversational interaction (e.g. a telephone conversation) and analyse and classify the interaction with the help of various theoretical notions and partial theories, but without any explicit, comprehensive and integrated theory of language. Clearly the appropriate methodology here is less logical, more straightforwardly Baconian-inductive.

Linguists working in the more centrally linguistic areas of phonology, syntax and semantics vary widely as to whether they cast their research as testing more or less formal models of the components of language, or as investigating unanalysed or underanalysed languages in what is essentially the necessary natural history mode. It is doubtless truistic that both types of approach have their particular strengths and limitations. Inductive data-collection without theory is blind, deductive model-construction without an adequate data-base is empty.

There is another aspect of linguistic methodology which relates to the social sciences and distinguishes it from the natural sciences. We will try to clarify this aspect by attempting to answer a question that natural scientists raise from time to time, namely 'What is an experiment in linguistics?'

p. 10 :  
Linguists would probably generally acknowledge that there is nothing in linguistics quite like the almost complete unanimity commonly found among competent workers in the natural sciences as to what are matters of established fact, what are reasonably satisfactory explanations for the assumed established facts, and what are the valid procedures in a sound enquiry. Disagreements naturally exist in the natural sciences, but they are usually found at the frontiers, and except in those areas of research that impinge upon moral or religious commitments (genetic engineering to take a current example, or the relation between race and IQ) such disagreements are generally resolved with reasonable dispatch when additional evidence is forthcoming, or when more sophisticated techniques or analysis are devised. In contrast, linguistics often seems to be a battlefield of opposing schools with general agreement perhaps only on what constitutes an introduction to the subject. In short, linguistics and possibly the social sciences, possesses no wide-ranging systems of explanation judged as adequate by a majority of the professionally competent, and it is marked by serious disagreements in methodological as well as substantive questions.

A reason, possibly, for this comparatively unhappy state of affairs is the difficulty of controlled experiments in linguistic research. In the natural sciences, as is well-known, experimentation has two essential characteristics. First, the experimenter is able to manipulate certain variables (ideally just one), which are assumed to constitute the relevant conditions for the phenomenon under study. By such manipulation, the experimenter hopes to discover the constant relation of dependence between the phenomenon and the variables. Secondly, the investigation is carried out in such a way that it is reproducible over and over again by any competent worker in the field. Briefly, a controlled experiment consists of the overt manipulation of variables and is reproducible at will.

There is some scope for controlled experimentation in linguistics. For example, one can test whether speakers of a language consistently distinguish forms that they claim to distinguish or consistently identify what they claim to identify; one can systematically vary the acoustic parameters of synthesized speech to determine whether there is a single determinant of a particular phonological opposition; one can test, in various ways, the reliability and consistency of speakers' judgements of acceptability and equivalence; and so on. Although linguistics is at least as well off as most of the social sciences in respect of its ability to make use of controlled experimentation, it must be admitted that it is more restricted in this respect than are many of the natural sciences. However, while it is clear that physics and chemistry achieve the eminence they have, in part at least, through controlled experimentation, it is also clear that even among the natural sciences there are those that do not and cannot use this method and have nonetheless succeeded in formulating general laws that are sufficiently precise to make testable predictions. In astronomy, for example, the lack of opportunity for controlled experiment has not prevented astronomers or geologists from arriving at well-founded laws. It seems indisputable that many sciences have contributed, and continue to contribute, to diminishing our ignorance without relying on controlled experimentation.

In default of controlled experimentation some other procedure must be employed that has the function of a controlled experiment in the natural sciences. This procedure, let us call it controlled enquiry, while it does not require, as does controlled experimentation, the reproduction at will of the phenomenon under investigation, or the overt manipulation of variables, nevertheless closely resembles experimentation in other respects. In linguistics, controlled investigation resembles controlled experimentation in that it consists of a deliberate search for contrasting occurrences in which some phenomenon is either uniformly manifested or manifested in some cases but not in others. This search is followed by the examination of certain factors discriminated in these occurrences in order to find out whether variations in these factors are related to differences in the phenomenon.

Thus the p's in pit, spit and lipstick are phonetically distinct: technically, the p in pit is aspirated, the p in spit is unaspirated and the p in lipstick is unreleased. No one of those phonetic differences suffices of itself to distinguish words in English in all the positions in which these various p-sounds occur. Nor is the distinction between p and b in all positions of their occurrence simply (or even primarily) a matter of voicing. In word-initial position (cf. pit: bit) p is distinguished phonetically from b partly (and mainly) by aspiration and partly by the absence of voicing; between vowels (cf. sopping: sobbing) it is the presence or absence of voicing that is phonetically distinctive; after s (cf. spit) neither aspiration nor

voicing is distinctive (since there is no possibility of significant contrast in this position between p and b). What the operative phonetic distinctions are in these, and other, positions of occurrence can be determined by what we are calling controlled enquiry; and, in cases like this, they can be verified experimentally. Similarly, it can be discovered by controlled enquiry (and verified experimentally) that, whereas in English voicing and aspiration are never independently variable, in Hindi they are; that, whereas in word-initial position in English consonants are typically either voiceless and aspirated or voiced and unaspirated, in French they are either voiceless or voiced (aspiration being non-distinctive) and in Mandarin Chinese they are either aspirated or unaspirated (voicing being non-distinctive). Facts of this kind, then, are determinable by controlled enquiry; and they are only minimally dependent upon the subjective judgements of native speakers. How the phonetic distinctions are accounted for within a framework of universal phonological categories (on the assumption that it is reasonable to postulate such a framework) is a question of another order, and one that we need not go into here.

In some forms of syntactic and phonological research, the desideratum of controlled enquiry is met by adopting a fairly rigorous view of the notion 'rule of grammar'. It has been the aim of traditional grammar to describe the class of properly formed sentences and to ascribe to each sentence what we would now call its 'structural description'; that is an account of the units of which the sentence is composed, the way the units are combined, the formal relations of a sentence to other sentences, and so on. Ordinarily, traditional grammars, while often containing insightful observations about the structural descriptions required for sentences, invariably fail to give any precise account of the way in which structural descriptions are assigned to sentences. A major achievement of modern linguistics, for which Chomsky more than anyone else is responsible, has been to centre attention and research on the nature of the rules by which structural descriptions are generated and assigned to sentences. This research seeks to determine what are the kinds of permitted grammatical rules, what the exact specification of their form is, and how these rules impose a structural description on each of an infinite set of grammatical sentences. The task of the rules is to replace the traditional grammarians' intuitions about structure by an effective procedure, an algorithm. Controlled enquiry of this sort, conducted within the Chomskyan framework (which is one of several competing for general acceptance) relies on fairly rigorous definitions of phrase structure rules, a type of restricted rewriting system for assigning structural descriptions to sentences, and transformational rules, operations that map structures onto structures by reasonably limited processes. In this framework, a linguist's research is fairly tightly controlled by his view of a grammar of a language, L, as being a set of rules of specified types that provide at least for the generation of an infinite set of grammatical sentences of L and the specification of their structural descriptions. A grammar in this sense is essentially a theory of the sentences of a language, a theory of sentencehood. It is not a model of the speaker or hearer of the language. It neither synthesises particular utterances as a speaker does, nor does it recognise the structures of utterances presented to it as a hearer does. But it is clearly desirable to add requirements to such theories so that the grammars are constructed in a way that makes them plausible models for the production and recognition of sentences. Steps taken in this direction are steps obeying Sapir's injunction to look beyond the 'pretty patterns' to the problems of human conduct in general.

p. 12.

In brief, the response to the natural scientist's challenging question, 'What is experimentation in linguistics?', is to acknowledge that, while a controlled experiment is an appropriate form of controlled enquiry with great advantages for some subject matters, linguistics, has to rely in general on controlled enquiry; and in this respect it is like most of the social sciences.

This completes our account of the goals and methodology of core linguistics. Our conclusion is that, judged by its aims, the nature of its subject-matter and the methods of enquiry which it most typically employs, core linguistics, as we have identified this area of research, is most naturally classified with the social sciences. What we have not said, it should be noted, in that core linguistics is one of the social sciences. For there is no authoritative and universally accepted definition of social science known to us which we could apply in order to decide whether this is or is not the case. In particular, there is no such definition, whether explicit or implicit, in the Government Report whose recommendations led to the establishment of the S.S.R.C. (HEYWORTH REPORT )

Given that we must operate for administrative purposes with the tripartite classification of fields of study into the natural sciences, the social sciences and the humanities, it seems to us that core linguistics is more naturally grouped with the social sciences than it is with either the natural sciences or the humanities. Indeed, it has a closer affinity with several of what are universally recognized as social sciences than they have with one another. It is closer to both developmental psychology and non-cognitive sociology, for example, than these two fields of research are to one another; it may even be closer to both sociology and social anthropology than either of these disciplines (as they are taught and practised at present in this country) are to each other; and it is certainly closer to both of them than such fields of research as social history, archaeology, geography and environmental studies are. At the same time, it must be emphasized that a too rigid application of the tripartite classification of fields of research is perhaps more detrimental to linguistics than it is to, say, psychology or history.

As we have argued in earlier sections of this report, both the autonomy of linguistics and its interdependence with a wide range of disciplines are essential to it; and it may be added that core linguistics (i.e., that central part of our discipline for which we claim autonomy and which gives to the discipline as a whole its coherence and unity) has had an obvious impact upon psychology, social anthropology and sociology in recent years. One has only to think of the work of such scholars as Fodor or Bever in psychology, of Levi-Strauss in social anthropology, or Cicourel, Garfinkel or Sacks in sociology to appreciate the force of this assertion. The fact that the ideas put forward by these scholars have been, and still are, highly controversial, and may eventually be rejected or radically modified, is neither here nor there. The point is that the ideas are challenging and have had some influence in disciplines adjacent to linguistics: it is important that they should be evaluated and interpreted by linguists, acting in co-operation with (and on equal terms with) the representatives of these other disciplines. If linguistics is to serve the interests of adjacent disciplines among the social sciences in this way, within the framework of the S.S.R.C. committee-structure, it is essential that there should continue to be, as there has been during the experimental period, a separate committee whose remit includes a responsibility for what we have defined as core linguistics.

5. NON-CORE LINGUISTICS

The way in which we are interpreting the ad hoc term 'non-core linguistics' for the purposes of this report has already been explained. So too, in a general way, has the internal structure of the various sub-fields of macrolinguistics. It is our assumption that of these several sub-fields the following will be sufficiently familiar to the S.S.R.C. and that their claim on S.S.R.C. funds requires no justification from us: psycholinguistics, sociolinguistics and anthropological linguistics. (For some further brief discussion, reference may be made to pp.1010-1012 of the article on Linguistics in the current edition of the Encyclopaedia Britannica,

a For more extensive discussion and exemplification, cf. Slobin (1971) and Oldfield & Marshall (1968) for psycholinguistics; Trudgill (1973) and Pride & Holmes (1972) for sociolinguistics; and Ardener (~~1970~~) for anthropological linguistics.) (1971)

The only questions that would seem to arise with respect to these three sub-fields of macrolinguistics are: 'How are they related to one another and to psychology, sociology and social anthropology?' c.

According to Hymes, in his editorial introduction to the first volume of Language in Society (1972); "The term 'sociolinguistics' ... has come to the fore as one in a series of such terms, preceded in prominence by 'athnolinguistics' and 'psycholinguistics' particularly. The series reflects the impact of linguistics successively on anthropology (which had partly given it birth), psychology, and then sociology and political science in the mid-1940s, the 50s and the 60s, respectively, .... The sequence of impact reflects a decreasing degree of involvement with technical linguistics, from most and longest in anthropology to least and latest in sociology and political science, a difference which remains." He points out that there has been a considerable overlap in the range of topics covered by each of the three terms and comments that, although 'sociolinguistics' is commonly given a narrower interpretation, it should perhaps be understood to comprise "all aspects of language as part of social life". The implication of this terminological comment would seem to be that the scope of the component 'socio-' in 'sociolinguistics' is broader than it is in 'sociology' and transcends some of the differences that currently divide sociology from social anthropology, on the one hand, and from social psychology, on the other. If Hymes's assessment of the situation is correct, this can only mean that the typical sociolinguist is closer to the typical psycholinguist and the typical anthropological linguist than the typical sociologist is to the typical psychologist and the typical social anthropologist; and we believe this to be the case. Sociolinguistics, psycholinguistics and anthropological linguistics are the closer to one another, because they draw upon the same body of theory and address themselves to the same general question 'What is language?' as core linguistics does.

But each of them addresses itself to a characteristically different aspect of this question; and each of them draws, not only upon theoretical micro-linguistics, but also upon one or more of the disciplines adjacent to linguistics. Once again a quotation from Hymes is apposite: "The series of terms [i.e., 'sociolinguistics', 'psycholinguistics' and 'ethnolinguistics' or 'anthropological linguistics'] does betray a certain bias. In form, each term implies that the social science component modifies linguistics, which has the central role.... Some scholars would prefer to designate their work as 'sociology of language', or some other term, in order to make clear that their concern is with social science, not linguistics. There may be a feeling that technical linguistics is not really necessary, or at best quite subordinate, to the study of major social problems, such as those of language policy, the role of standard languages, and the like. There may be a reciprocal feeling on the part of others who cannot conceive of any worthwhile study of language that is not informed by present-day linguistics."

It is not for us to adjudicate between partisans of these two camps, but rather to stress the obvious fact that there cannot but be a continuum between a maximally linguistic sociolinguistics and a maximally sociological sociology of language, between a maximally linguistic psycholinguistics and a maximally psychological psychology of language, and so on.