

The case of Linguistics: a prognosis

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This paper presents a discussion of the role of linguistics in relation to the study and treatment of linguistic disorders. An empirical, a methodological, and a theoretical contribution are distinguished, and illustrated from recent research. Particular attention is paid to the complexity of sociolinguistic and psycholinguistic factors affecting language study, to the development of fresh techniques of analysis, and to the need to be aware of the kind of problems which impede the analysis and description of language structures and functions. There follows a review of the main limitations of linguistics in its relationship with speech therapy; and the paper concludes with a brief summary of the present state of the art from the viewpoint of the goals outlined at the beginning of the discussion. The main theme is that the primary relevance of linguistics is as an aid in the development of a more explicitly principled therapy.

It is sometimes possible to find speech therapists and linguists who are willing to speculate about what an ideal world of 'therapeutic linguistics' would look like. I have been collating these observations over the past year or so, for it seems to me only by being agreed about the hoped-for outcome of the encounter between the two fields can we realistically evaluate what progress has been made so far and lay down practicable guidelines for the future. From what I can gather, the ideal seems to consist of seven main goals. In any utopia, a therapist would have at her (or perhaps also even his, by then) disposal, at least the following information:

- i. Some kind of manual, describing all features of the normal development of language in children, both spoken and written, indicating the order and rate of development of sounds grammatical structures and vocabulary, and correlating these with such factors as age, sex, IQ, socio-economic back-ground, and dialect area.
- ii. Another manual, in which the language in its fully developed state is described.
- iii. A full description of the linguistic characteristics of the various categories of communicational disorder, including a means of assessing different kinds and degrees of divergence from the language's norms.
- iv. A set of techniques capable of describing all significant linguistic features in the study of a particular case.
- v. A scheme for evaluating language patterns in terms of relative complexity, and thus a set of recommendations concerning the order in which linguistic forms and structures could be presented in the treatment of a disorder.
- vi. A set of explanatory principles able to account for the specific acquisition and breakdown of language in relation to anatomical, physiological, neurological, psychological, and other states.
- vii. And, of course, an introductory exposition to the conceptual and terminological apparatus used, capable of being understood by people lacking a professional training in linguistics.

These aims are grand, but not grandiose. They are certainly no more ambitious than the goals of other disciplines. The question we have to ask, then, is how far along the road we are towards achieving any of them. A great deal has been claimed for linguistics over the past few years, by both therapists and pathologists, on the one hand, and linguists, on the

other; and it is essential that both sides see the proposed liaison in a realistic perspective. It comes as a shock to many therapists to realise that *none* of the above aims can be satisfactorily achieved by linguistics at the present time. Which is not to say that linguistics can do nothing (for otherwise this article would end here); but simply to underline the point that if the therapist is going to make best use of the subject, she must approach it without preconceptions, and be realistic in her demands. Paraphrasing the Editor's question last year when she was introducing volume six; what *can* linguistics do at its present stage of development that is directly applicable to the diagnosis and treatment of disorders of communication, and what can therapists do about it? For the fact of the matter is that while a marriage between the two subjects has been confidently predicted by many for some years, only in a few isolated cases have we got anywhere past the stage of calling the banns. As a specific indication of this, one might ask how many of the readers of this Journal have actually used, in their casework, any of the linguistic information accumulated in the articles in Volume 3, No. 1 (April 1968)? My guess is, very few. As a further indication, how many linguists have actually ever seen a linguistically disordered child, let alone worked with one? Also, very few. So what can be done?

My hope is that there will be a new phase in the relationship between linguistics and speech therapy, in which the relevance of linguistics will come to be viewed less idealistically and more practically than in the past. Instead of a view of the subject which amounted at times almost to seeing it as a panacea, a careful evaluation will take place of its various branches and techniques, and its potential contribution made clear. The development of new training programmes, providing an integrated view of the two fields, will be essential if this is to happen; and there are some promising signs. But meanwhile, it is important to develop a critical attitude towards the issue, and this article tries to present some of the factors which have to be appreciated in order to arrive at any evaluation.

In my view, linguistics is able to contribute to the understanding of linguistic disorders in three main ways - 'empirically', by providing new facts about the acquisition or loss of linguistic features; 'procedurally', by providing new techniques of analysis; and 'theoretically', by suggesting new explanations for the particular form linguistic events take. Of the three, probably the procedural aspect is the most well known (in suggesting methods of phonetic or syntactic analysis, for instance). More recently, there has been a trend in developmental linguistics to emphasise the need for the construction of theories, which will explain the underlying system in the mass of observations about language development accumulated over the past fifteen years or so. This theoretical emphasis in linguistic research has been particularly apparent since Chomsky, and it is true that in some areas of language large numbers of unrelated facts have been waiting for attempts to interpret them into a coherent pattern. But it would be wrong to assume that all the facts of development are known, and that the sole role of linguistics is to present them to the public in the most coherent way. What we know about development is still but the tip of the iceberg. The announcement for a recent book, *The ontogenesis of grammar* (Slobin, 1971), contained a subtitle, 'Some facts and several theories', though this was dropped from the final title. This is very much the situation at present. The theorising, I do not deny, is ultimately crucial, but the various theories of language acquisition available at present - whether, for instance, the child has an innate predisposition for language or not - are couched in such general terms that their explanatory power for people involved in casework is very limited indeed. What is needed, in my view, is a renewed, theoretically aware emphasis on the *facts* of language development and on the reliability of procedures for obtaining them. I shall begin by looking at some of these facts and procedures, therefore, and suggest what is involved in being 'theoretically aware'.

Consider, for example, some of the problems which face anyone attempting to ascertain norms of language development, and which linguistic expertise has gone some way towards solving. To begin with, there is the question of obtaining reliable and usable data. An accumulation of psycholinguistic and sociolinguistic experiments over the past few years has shown very clearly how complex are the factors which affect the language output of the child. The awareness of such complexity is novel. There was a time when researchers would use age as the sole criterion of development, comparing usages at given ages without regard for other criteria. Much of the impressionistic work carried out in the nineteenth century, and at the beginning of the twentieth, by such men as Charles Darwin and Hippolyte Taine, was along these lines (there is a good selection of this early work in Bar-Adon & Leopold, (1971). More recently, it has emerged that sex, birth-order, regional background, socio-economic background, and situation of recording, amongst other things, are all relevant in determining the range, quality, and quantity of a child's utterance. If these factors are not borne in mind, and controlled for, results will tend to be over-generally applied. For instance, most of the information obtained in the early period just mentioned was based on the utterances of the children of well-educated families, where the parents spent a great deal of time with the child; the time-scale of the utterances produced would hardly be applicable to the children of working-class families. And sometimes no information at all about a child's background was given. Or again, most of the recent normative work in linguistics has been based on American children, again of families with a higher education background: it would be wrong to assume that the norms of development are going to be the same for British children – there seem to be significant rate differences, for instance. Developing a comprehensive classification of relevant variables is a task which remains to be completed, and it is an urgent one; for unless the characteristics of any research sample are quite explicit, it is impossible to correlate results with those of other scholars. No matter how precise a description is, unless it is firmly grounded in facts about the extra-linguistic background of the users, one can never be confident about recommending therapeutic measures; and it is a particular task of the two recently developed branches of linguistics, socio- and psycho-linguistics, to do just this.¹

Let us assume, however, that a researcher has decided on the extra-linguistic characteristics of his sample, and has his children – or adults – ready for recording: how does he get his information? The children are the major problem, of course. It is now well recognised that one cannot use adults to obtain information about child language – even parents – as their impressionistic information about most aspects of pronunciation and syntax is either too general to be useful, or is wrong – that is, assuming they have any clear ideas about it at all, or have the ability to express what they know. Parental comment may provide clues about the existence of general developmental processes, but no more. So one goes direct to the child; but the optimum procedure is by no means obvious. Attempts to get everything a child says down on paper, as was common in the early days of research, are doomed to failure, even with modern recording equipment. The problem is not so much one of making the recording, in these days of mobile radio-microphones; it is one of getting the data analysed. It is sometimes forgotten that the basic task of transferring linguistic information from a tape onto a page is by no means an unskilled, easy one. During the crucial formative years (say, the first four), an analyst needs a great deal of practice before he can be sure that an accurate transcription has been made. There are the obvious difficulties, to begin with, which anyone knows about who has listened to a tape of children that someone else has recorded – the many partially unintelligible utterances due

¹ For a short introduction to sociolinguistics, see Fishman (1970); for a psychologist's approach to psycholinguistics, see Herriot (1970).

to lack of visual context. The use of video-recording will help to eliminate these difficulties of course, but this is expensive, and not much used. Most of the data that has been provided until now has come from audio-tapes alone, and there it is the transcription itself which is the major task. In the early period of development, when the focus is on pronunciation, one might listen for 15 minutes or more to a single loop of tape, to determine its segmental shape, its intonation pattern, and so on. And if one decides to use, say, a sound spectrograph to clarify some ambiguous sound, then this may add a further fifteen minutes. Even when the search is for the more obvious grammatical patterns, there is still the need to provide phonetic information (such as intonation) if the transcription is to be unambiguously interpretable; and again, the task emerges as quite a time-consuming one. In other words, stockpiling a vast quantity of data is of no value unless the resources are available to process it; and while some research surveys have worked quite well on this principle, it is unlikely to be a satisfactory way of working for most people.

An alternative way is to record a large quantity of material and then to listen to it picking out for detailed study only those features which are relevant to a particular hypothesis. One may be interested, for example, in tracing the development of the expression of negation in children, and only this would be processed. But even this takes a great deal of preliminary time, and for many types of structure the frequency of occurrence is such that it is tantamount to processing the whole data anyway. As another alternative, one might try to establish a situation which would force the child to use certain forms of language and not others, thus avoiding the problem of having to analyse masses of irrelevant data. This procedure is commonplace in psychological testing, and it may be found in phonetic tests too (particularly of articulation), and increasingly in syntactic studies. But here too one must be careful. Not all linguistic structures are equally readily elicitable in interview, and some seem impossible (e.g. sentences containing many clauses). Also, it is important to ensure that the interviewer does not prejudge the child's answers by putting his questions in ways which make the responses suspect - unreliable indications of the child's real command of the language. This point is well-recognised from studies of adult reactions to questions about usage or acceptability. To begin with, linguistic terminology must not be part of the question ('Can you give me a sentence with a preposition at the end?'): the informant may not know the terminology you use, and even if he is familiar with the terms, he may have a quite different idea about what they refer to. But more indirect methods may not work either, for instance presenting a speaker with a sentence and simply asking him to say whether he understands it, or accepts it. The speaker may not be the sort of person who is very good at thinking of language in this way; he may answer without having understood the question; he may answer trying to please, to give you the answer he thinks you want; and so on. Above all, asking a person directly about a sentence is a highly artificial procedure: he might respond quite differently if it were not presented to him in isolation - sentences often seem odder out of context. Devising reliable ways of getting information out of native speakers is something which has exercised the minds of a number of linguists, and fairly subtle techniques are now available (cf. the discussion and procedure in Quirk & Svartvik, 1966). One must be similarly cautious with work on children.

In other words, what the study of language acquisition needs are reliable and economical techniques for obtaining and processing data. Of all branches of linguistic analysis, phonetics has made most headway, because the data it aims to explain is far more finite, concrete and manageable than that of syntax or semantics. We now have a fairly reliable set of techniques for studying the articulation, transmission, and reception of sound. The traditional emphasis in therapy training has been on mastering some of these techniques (in particular, the use of phonetic transcription), applying them to the identification of disorders

and grading therapeutic materials, and so I shall not dwell on the familiar here. But there remain other phonetic techniques which are still not widely used in this field – for instance, the use of tape repeaters is by no means routine, and likewise the spectrograph. Moreover, new techniques and ways of looking at pronunciation are still evolving, which will undoubtedly be of relevance in due course. One instance is research into the perception of sounds and sound differences, which could lead to more precise means of evaluating articulatory gradations during routine testing.¹ Another is the increased awareness of the relevance of voice quality, the idiosyncratic, personal aspects of vocal behaviour. Traditional phonetic studies usually ignored this factor, assuming it was merely a background for the real study of language, not part of the communication as such. When someone talks, we listen to what he is saying, and disregard the permanently present voice characteristics, it would be argued. Recent work into the basis of voice quality, however, has suggested considerable relevance for this concept. Laver (1968), for example, shows how it can be an index to various characteristics of the speaker – to psychological and social traits in particular.² If the system of phonetic classification is refined enough, it may be possible to develop more precise descriptions of articulatory states than exist at present, and thus avoid some of the vagueness which it is so easy to find oneself using in talking about voice disorders.

Assuming that we have now selected our sample, and devised a means of eliciting relevant utterances and processing the data, it has next to be given a description and analysed. This is where the main role of linguistics lies, in providing descriptions of languages and analysing the properties of these descriptions. The aim is to try to establish the broad principles which underlie languages – principles which will establish what makes languages different, and which will identify what they have in common (the linguistic ‘universals’). Describing a language is by no means as straightforward a task as it is sometimes made out to be, one of the main reasons being that the descriptive apparatus which we may have been taught to use is often unsuitable for the job. It is not easy to describe a motor-car if all one is given is a set of labels which were originally devised for the description of an elephant; and in language, it is sometimes as bizarre as this. Much of our descriptive terminology has had to be renovated for the description of modern languages, and this process has to continue when we deal with the language of children. The weaknesses in such terms as the parts of speech, for instance, are probably familiar. Terms such as adverb or noun, it is now realised, have to be precisely defined if they are to be of value, for they can be given so many different senses. The adverb is the weirdest category: it contains such words as ‘slowly’, ‘soon’, ‘yes’, ‘however’, ‘very’, and ‘not’ – even ‘the’ is called an adverb (in such phrases as ‘the more the merrier’). Faced with such a mixture, it is not surprising that the term ‘adverb’ should be used in such a variety of senses by different authors. And in trying to avoid the confusion, new classificatory principles have to be established, and consistently maintained. The fundamental principle to remember is that all descriptive terms are artefacts: it is a human decision what kinds of words in utterances we are going to call ‘noun’ or ‘adverb’, or what have you. Grammarian A decides that he is going to call ‘noun’ all words in the language which have a certain set of attributes (e.g. ability to inflect for number and possession, capable of co-occurring with one of the articles). Grammarian B, on the other hand, may use the term ‘noun’ slightly differently, with reference to a different set of attributes. Some grammarians consider ‘proper names’ to be nouns, for instance; others see them as being really a separate ‘part’ of speech. The question is an interesting one.¹ The moral is plain: it is essential to understand how an author (or, indeed, oneself) is using a term before generalisations about usage or comparisons between usages can be safely made.

These are familiar problems, to anyone who has ever looked at language from a linguistic point of view; but to the student of child language they have unfamiliar and far-reaching implications. Let me take two examples, the first from vocabulary acquisition. Vocabulary achievement is often summarised by reference to the number of 'words' used at a certain age; but this achievement is uninterpretable unless some criteria are provided indicating how a given result was arrived at, and what is meant by the term 'word'. Here are some relevant questions. If we say, 'He has about 100 words', is this active or passive vocabulary? How often does a child have to have used a word before we can say he has 'acquired' it? Do word-counters count 'him' and 'he' as two words or one? Are 'go', 'going', 'went', 'gone' four words, or one, or two? Are idioms (e.g. 'spick and span') counted as single 'words' or as multiples? And is it assumed that each 'word' contains but one sense? A quick look at any dictionary shows that the majority of words in English (apart from scientific terms) have more than one sense - common verbs, such as 'take' and 'put' have several. A child may use a word like 'put' in a dozen of its senses. Is this then a dozen words? There are many such problems about which a policy decision has to be made. The issue is fundamental to any evaluation, for '100 words' may mean 100 concepts grasped, or less, or more. (Cf. the rather naive notion of 'sentence length' as an index of development: apart from the basic question as to how the length is to be measured (in words? morphemes? syllables? stressed syllables? phonemes? letters? . . .), there is a worrying disregard for the overriding criteria of sentence complexity.)

My second example is from syntax. There is a noticeable tendency, even in the linguistics literature, to use the term 'sentence' only when the child starts to 'put words together', usually around 18 months. But I do not think there is any justification for restricting the term in this way. If a sentence is defined in some such way as a meaningful, grammatically self-contained unit, then the point is that it is possible to trace the child's use of meaningful, grammatically independent units well before the time when he starts stringing words together. The 'first word', for instance, is surely more than a word; it is functionally a sentence. When a child says 'dada', he does not mean by this the dictionary definition of the word 'father', but something rather more diffuse. It means such things (depending on context) as 'There's daddy', 'I want daddy', and the like, the different senses depending for their clarity on intonation and gesture. But to the child, it is just as much a meaningful, grammatical utterance as the slightly later 'Want daddy', 'There daddy', etc. And why stop with the 'first word' in tracing the ontogenesis of the sentence? Why should not the rather indeterminate but consistently produced vocalizations of 8 or 9 months also be called sentences? When the parents start saying 'He always makes that noise when daddy walks into the room', this is recognition of sentence function, despite its formlessness. The child at this time uses his intonation to break his vocalization up into 'sentence-like chunks', as Ruth Weir put it (1966:153). There is a continuity of development here, then, which it is important to appreciate, and which is often missed. There has been a tendency to see the change from one-word to two-word utterances as being of major significance (the former even being labelled differently, as 'holophrases'); but attention to criteria of sentences indicates the far more significant possibility of linguistic continuity.¹

Another descriptive problem facing the student of child language is that the further his data is from the adult goal (i.e. the younger the child), the more difficult it becomes to find an accurate terminology for describing what he observes. Most grammatical terminology is geared to the description of adult language, and for young language states (or, for language states in an advanced stage of decay) it becomes highly unwieldy and distorting. For instance, the concept of 'noun' in an adult grammar of English is going to be defined partly by reference to its structural characteristics, as mentioned above - its position in the

sentence, its morphology, etc. The 'nouns' which a two-year-old uses, however, are not much like this: they have very few possible sentence-positions, and their form is rigid (they do not alter for possession or number, for instance). They will develop into the nouns of adult language, but they are not yet fully-fledged. It does not matter what we call them, whether 'nouns' or something else, as long as we realise that there are differences. The problem is with us in phonetics, too. To call the sounds of babbling 'vowels' and 'consonants' is rather misleading, if we then propose to use the same terms 'vowels' and 'consonants' to describe the emerging pronunciation system later. Not only are babbling sounds very different physically, as spectrograms clearly show, they are very different functionally – they do not provide meaning contrasts, as the later sounds do. It is well-known that in babbling will be heard sounds that the child does not develop an ability to use in speech until much later. There may be a frequently used [r] sound, for instance, and then it seems to disappear until it emerges contrastively a year or so afterwards. To say that a child had a [r] consonant, lost it, and then developed it, is odd. Likewise, it sounds odd to talk about the first vowel as being an [a] vowel (in words like 'dada') if one has previously been talking about the wide range of vowels that have occurred in babble. A language-independent terminology for talking about babbling has to be devised, if this kind of confusion is to be avoided, and a number of possibilities have been suggested (such as Pike's (1943) 'contoid' and 'vocoid'); but little agreement has been reached.

What all this amounts to is an attempt by the linguist to replace descriptive vagueness by precision, so that different descriptions of children may be compared. There is little to be gained by saying that child A uses more nouns than child B at a given age, if the investigator who looked at A used a definition of noun which allowed in more under that heading than in the case of B! One of the main aims of contemporary linguistics is to make study of language explicit, to ensure that methods, definitions, principles, reasons, aims are all clearly and consistently expressed. We may have a vast store of accumulated linguistic knowledge inside our heads arising out of our experience of normal and abnormal language; but unless this can be made public in an agreed way, it is of limited value.¹

But let us assume now that we have some descriptive apparatus available for use on our data; if so, the task of determining interesting patterns in this data may now begin. This analytic stage is of course what investigators most want to get to, as its results are much needed in many applications; but what must be noted is the amount of preliminary linguistic thinking, discussed in the above paragraphs, which has had to be gone through before we can begin to think of results at all. I cannot survey the whole field, naturally, but I can give some indication of the kinds of result that emerge. Perhaps the most important demonstration to date is that there are definite patterns of development underlying the apparent chaos of utterance. This was noticed very early on in phonological studies. As soon as it was realised that the 'laws' of phonetic development were to be found by showing how a child manipulates *contrasts* between sounds, and not the sounds themselves, thousands of previously unrelated observations fell into place.¹ Almost all of this work was on the development of segmental sounds (viz. vowels, consonants, and their combinations). More recently, work has begun to determine the extent to which the non-segmental side of pronunciation – the intonation, rhythm, and so on, of a language – also displays comparable standard development. The consensus of opinion is that language-specific intonational patterns develop out of the biologically-conditioned vocalization present since birth around the age of seven months. At about this age it seems possible to tell babies of different language backgrounds apart by their vocalizations. The application is clear: this is therefore the time when deaf children, for instance, would be likely to display differences in their vocalization, which previously has been the same as that of normal children, as Fry and other have

pointed out, Fry, (1966), Crystal (1970). If the appropriate linguistic features can be isolated and their limits of fluctuation in normal children defined, the possibilities of earlier diagnosis of deafness become real. And a similar argument might be made in relation to other categories of language disorder which might be identified by reference to non-segmental phenomena. So far, very little has been done, due to the very great difficulties in hearing, controlling and measuring non-segmental features – someone once called intonation the ‘greasy’ part of speech! But its potentiality as a factor in diagnosis and therapy must not be underestimated. The way intonation distributes emphasis in a sentence, for instance, is particularly important in promoting a successful dialogue with a child, or in indicating a level of organisation in aphasic speech which may not be present anywhere else. (But when did you last see an intonational transcription of aphasic speech?) In a different connection, the system developed at University College London for the direct visual representation of pitch contours on a screen has already led to the testing of pedagogical techniques and marked improvements in the intonational characteristics of the voices of deaf patients (see Fourcin & Abberton, 1971)*. The possibility of developing parts of a therapy programme on an intonational basis in children with severe communicational disorders is having some success, as reported by Hutchinson elsewhere in this volume. And there are good grounds for seeing intonation as a highly relevant factor in the assessment and therapy of dysarthria and stuttering – though little has been done.

The search for clear developmental tendencies in syntax has already produced some clear results, although in view of the restricted nature of the samples it is not safe to generalise. For instance, there is no doubt that questions develop in children through a number of distinct stages, with some overlapping. The first indication of question is a rising intonation on a vocalisation. The *Wh*- words then develop (‘why’, ‘where’, etc.), and these are used initially in a sentence (‘What daddy doing?’, ‘Where drink?’). After this, questions with verb-subject inversion begin to appear (‘Is daddy in car?’); then comes the inversion for *Wh*-questions (‘Why is daddy there?’); and finally we get the various combinations of auxiliaries for more complex questions (‘Will daddy be going?’, not ‘Will be daddy going?’, which occurs earlier). It should be possible to trace the development of all syntactic categories and structures in this way, and the linguistics literature contains a great deal along these lines, most of the information being presented using the framework of transformational grammar. Menyuk (1971) reviews a great deal of this, but for a general introduction to the transformationalist approach there is also McNeill (1970). Bloom (1970) covers early development well in her monograph, but here, as in most publications, the detailed facts have to be extracted from a fair amount of theoretical discussion. There are also a number of collections of papers which contain valuable data, in particular Bellugi & Brown (1964), Lenneberg (1964), and Smith & Miller (1966). For later development, there is Chomsky (1969). The Pelican, *New Horizons in Linguistics*, Lyons, (1970), has a useful chapter on language acquisition by Campbell & Wales, and also has up-to-date information about current trends in most branches of the subject. I cite this bibliography at length really by way of apology for being unable to do more in this article than pay lip-service to the importance and relevance of the field of developmental syntax. It is now the field in which most current research is being carried on, and it is likely to stay so for some years.

If, then, there are so many points of possible contact between linguistics and speech therapy, why, one might ask, has the proposed liaison between the two subjects not been more fruitful? For it is surely the case that *relatively* little has been done which reflects collaboration and mutual influence. In my view, I think that too much has been expected of the new subject, linguistics, and that any realistic appraisal of its relationship to speech therapy should take into account those aspects of linguistics which are unlikely to be

helpful, and the fundamental limitations of the subject. The first point I think is quickly discovered by those who have followed introductory courses in the subject: some parts of it are of only remote interest, while others have a long way to go before they become applicable. For an example of remoteness, consider all the work that goes on under the heading of historical linguistics – the study of change in languages over the centuries – which is of very limited relevance to the therapist. Another example would be all the work on languages other than the one that the therapist actually practices in. Linguistics has no special brief for English – although most linguistics research so far has been in and on this language. In textbooks and lectures, however, a considerable amount of the illustration of general theoretical principles and specific analytical techniques is made with reference to languages other than English – some of these being quite ‘esoteric’, to English ears. The student-linguist has to develop this language ‘sensitisation’, if he hopes to make headway in the subject. But an analysis of the morphology of the verb phrase in, say, Yoruba, is not something which is likely to be immediately attractive to the therapist. (It is of course indirectly useful, I would argue, insofar as it contributes to the formation of the student’s ability to handle all kinds of linguistic data, including the pathological – which sometimes involves forms and structures quite as esoteric as those found in Oriental or African languages – and can develop in him attitudes which can contribute to more objective forms of assessment.)

Even if the lecture or book is on English, there may still be problems. In a course on the structure of English, these days, the odds are that one will not be presented with a straightforward inventory of facts about the language. Instead, one will get a critical, discursive kind of course, with different interpretations of particular points of syntax being outlined and evaluated. In answer to the question, ‘What *is* the structure of English like?’, the answer might be, ‘Well it depends on which way you look at it’ – and the various ways of looking at it form the content of the course. To many linguists, this multiplicity of viewpoints is the central interest of their subject. To the therapist, however, this detailed evaluation of approaches may seem rather too academic. In the present state of her art, where descriptive information of a factual kind is urgently required, *any* information is better than none, and any approach will do, as long as it can be straightforwardly applied to the analysis of practical problems. The issues raised in theoretical syntax will naturally seem rather remote, not something to spend part of one’s meagre ration of spare time on. I remember giving a lecture once in which I outlined six different ways of analysing the English verb phrase. At the end of the lecture, a therapist in the audience asked me which was the best. My answer was that there was no single answer. Each of the analyses had good points, each had bad. Which would be the best analysis would depend on the purpose of the analyst – but relating my six approaches to the various purposes which the audience represented was not the aim of the lecture. After all, some were language teachers, some teachers of English literature, some were therapists . . . The analysis most suitable for speech therapy is unlikely to be the most suitable for foreign language teaching. This would be a question for applied linguistics to decide. ‘Then there should be a lecture given just on the way in which these analyses could be useful to the therapist’, it might be said. I quite agree. But the regrettable fact of the matter is that at the moment, in this country, there is no university lecture course or linguistics textbook which does precisely that; and applied linguistics is largely preoccupied with problems of foreign language teaching. This is undoubtedly a temporary state of affairs; but until things change, therapists who want to get involved with linguistics will find they have to do much of the evaluation and application to their subject for themselves.

From the linguist’s point of view, of course, the existence of this theoretical multiplicity

is an extremely healthy sign; it is a sign, moreover, of the youth of the subject. It must be remembered that linguistics, as the science of spoken language, has had little more than 50 years of development, and in the last 10 years it has undergone a revolution in its thinking (largely due to the work of Chomsky) which will take ages to sort out. Linguistics here is no different from other sciences, of course. The arguments that raged about psychology as a science in the early part of the century, and which still do rage about sociology, psychotherapy, cosmology, and even the more 'traditional' sciences, such as physics, indicate that periods of confusion are a perfectly normal development in any science. One must expect to find in linguistics that most of its theoretical terms have a variety of senses, that there are contradictory schools of thought, and procedures of analysis, and that the learned journals display a proportion of controversy, bias and polemic – just as in any other science! For instance, a speech therapist who learned her linguistics at, say, Reading, and who then moved to Indiana, would find that many parts of her training would have to be re-thought, if she wanted to talk the same language as her new colleagues. They would tend to be using a different phonetic transcription, for instance, and their ways of presenting grammatical facts would differ in many respects.¹ The danger – from the viewpoint of the future unity of the subject – is in learning a brand of linguistics without being aware that there are other schools of thought in other parts of the world which do things quite differently. This is often the fault of the linguist. Linguists who adopt a particular school of thought are often quite casual about their ignorance of other schools. Even S. P. Corder, in his valuable article on 'Linguistics and speech therapy' (Corder, 1966) falls into this habit, and it is quite misleading. Having introduced transformational linguistic theory, he says (p. 124): 'The fact that we recognize disordered speech exists at all is because its observable features differentiate it from normal speech. But to diagnose, classify and treat it, we must first describe in what way it differs. Only a linguistic theory of the sort described enables us to do this in an explicit fashion. A linguistic theory which starts from the proposition that only what is observable can be described is less likely to get to the root of the problem. But transformational grammar is not the only alternative to a traditional observational model. It is the one on which most work has been done so far, that is true; but there are all sorts of other possibilities available which should not be condemned without a hearing, and in some respects transformational grammar may not be the most useful alternative (cf. Haas' attitude (1968:20)). The nearest linguistics gets to a neat, well-organised, generally accepted body of knowledge is in phonetics: for the rest, therapists must expect to find controversy over the next few years, even on quite basic matters.

Linguistics in the science of language; and in this definition there is the basis of another restriction on the relevance of the subject. It is not the science of human communication (for which the term 'semiotics' is nowadays commonly used). The point is a familiar one to speech therapists, I am told, who have often considered that a different label – such as 'communication pathologist and therapist' – would more accurately reflect the realities of their practising situation. What I want to emphasise is that so many of the disorders that a therapist is presented with are not simply linguistic disorders – and accordingly the professional linguist's role diminishes. It is often forgotten that if there is no language for a linguist to work on, he can be of little practical assistance. I was once asked to advise on a child, but when I asked to hear a recording of some of his speech output that the therapist thought typical, I got a very odd look. 'He isn't saying anything yet', she said! Well, under such circumstances, I can make little direct contribution, apart from offering general advice about the kind of structures which might be used in the first therapy sessions – and this advice is sometimes so general as to be almost commonsense. The limiting case of the relevance of linguistics is silence. Or, putting this another way, a linguist is best used when

there is a tape-recording for him to get his teeth into.

'But can't linguistics help in the description of other forms of communication which a language-disordered child might use?', it might be asked. With some children, any communicative activity at all is something to be welcomed, even if it is not linguistic. Can linguistics help in the analysis of this? As it happens, much of the earliest work in semiotics was carried on by people trained in linguistics. Linguists participated in working out transcriptions for facial expressions and body movements ('kinesics'), spatial orientations 'proxemics', and so on. The terminology in use there is largely derived from that in general use in linguistics in the early fifties. But relatively little has been done, and non-vocal behaviour is considered by most linguists as very marginal to their discipline. 'We have enough to do coping with the structure of speech', it is sometimes said. Again, this is a view with which I have little sympathy. Full statements of an utterance's meaning will only be satisfactory, it seems to me, if the vocal component of an act of communication is studied carefully along with the information about the other components. But at the moment to be realistic, few linguists have a real interest in semiotics in Britain (there are rather more on the Continent and in the United States), and few practical analytic techniques have been isolated. Hence the therapist wishing to obtain assistance in analysing non-vocal communicative behaviour is unlikely to get much help from linguistics. Analysing non-vocal behaviour, and structuring situations in order to elicit it is more the province of psychology, and has been for some time. The historical division between disciplines readily distorts reality.

The same division, between psychology and linguistics, has affected the study of other, equally fundamental matters, too. While all linguists are in principle interested in the study of all aspects of the 'speech chain' – production, transmission, reception, and interpretation – in fact most research has gone on into the production and transmission of speech. Perceptual studies of speech are nowadays on the increase, it is true, but of all the branches of phonetics, auditory phonetics still remains the least well-developed (far more is known about articulation and acoustics), and the subject of 'comprehension' (either in a grammatical or a semantic sense) is one which few linguists have developed any competence in studying, and which most would consider to be more the province of psychology. What a sentence means is a legitimate question, it seems; whether it has been understood, is not. Once again, I must make it clear that I am not in favour of such a conceptual division; and I think that more and more linguists are coming to take this view, particularly those who are working within the area of psycholinguistics.¹ But at the moment most linguists would not know the principles and procedures of comprehension testing, and related matters. The point has to be recognised, albeit regretted.

The last factor which the therapist has to remember whenever she hopes to obtain assistance from a linguist is a rather brutal one: by no means all of them will be professionally interested in her problem. One trusts that they will be humanly sympathetic, naturally; but sympathy alone solves little. Willingness to give time, and awareness of the nature of the problem are the two attributes prerequisite for successful collaboration; and these are more difficult to find. It is the all-pervasive, multi-faceted nature of language which is the problem. Language is so complex, has so many distinct functions, and enters into so many complex relationships with other fields of study, that there are dozens of fascinating problems available to engage a linguist looking for a research field to work in. This is perhaps obvious. What is not so obvious is that, with one possible exception, all these other fields deal with linguistic normalcy. (The exception is literary language, which regularly deviates from linguistic norms, though in rather different ways than in the case of speech or language disorders.) Linguists are used to working with norms, and to looking

for norms. They are not used to looking for or at pathologies. And for those who do have a genuine interest in assisting the study of language pathology, it must be remembered that it takes a lot of time – both in terms of reading and clinical observation – to develop in the linguist the kind of intuitive understanding of syndromes of linguistic pathology which experienced speech therapists take quite for granted. The associated ‘rhetoric’ of speech therapy is something which his professional training may never have given him any acquaintance with: he may never have seen an audiogram; terms like ‘sigmatism’ will be quite new; the phrase ‘the Illinois’ will remind him of a river; and even quite basic terms, like ‘language’ and ‘voice’, he will have to learn a fresh use of if he hopes to be on the same wavelength. His extra reading will take him into fresh areas of anatomy, physiology, and neurology, on the one hand (in which he will have had next to no proper training), and into the equally novel detail of local authority policy, hospital administration, and the like, on the other. And even if he does quickly grasp the terminological distinctions, it takes many months to put flesh on the various pathological labels. I am a little better at it now, but at conferences I am still asked questions, to do with the relevance of linguistics, in which it is assumed that I am perfectly familiar with a particular disorder, when I have never in fact seen a case of it in my linguistic life.

The moral of all this, of course, is for the therapist not to expect too much of her potential linguistic colleague. The moral, however, is double-edged. The linguist must not expect too much either. Much of the terminology and conceptual apparatus of linguistics is by no means as self-evident as many linguists assume. I am not talking solely about the obvious complexities which are manifest in the various techniques of diagramming and transcription which abound, but about the deceptive complexities too – the new definitions given to familiar terms, such as ‘noun’ or ‘sentence’, which can cause just as much a problem for the unguarded reader. It is not easy to get a sufficient grasp of contemporary linguistics, sufficient to enable some practical work to get done. It does seem to be getting easier. Apart from any changes in training which may emerge over the next few years, such as the development of new degrees in language pathology, linguistics is doing a great deal at the moment setting its own house in order. More and more genuinely introductory books are appearing, which take little for granted, and, more important, are not too vast for consumption at weekends.¹ 1971 was also the year for two firsts in the study of normal language acquisition: the first real textbook on the subject appeared (Menyuk, 1971), and the first representative anthology of readings (Bar-Adon & Leopold, 1971). But there is no book, as yet, introducing the applicability of linguistics to speech therapy; and all the books on linguistics in general will contain a fair amount of only indirect relevance, as already mentioned. The same problem that kills suggestions for reading large introductory textbooks also kills suggestions for combined research enterprises too. Spare-time linguistics learning and practising is simply not feasible without spare time.

How does this rather scattered survey of some linguistic themes relate to the first paragraph of this paper, where I outlined seven ideal goals? I shall take each in turn, and suggest what has been achieved.

i. There is no manual as yet, but the normal development of segmental phonology is fairly thoroughly known, and a great deal of the syntax before age five. There is very partial knowledge of the various extra-linguistic factors. There has been little advance on traditional ideas about vocabulary, but some promising starts are being made, within the general context of semantics. Hardly anyone has worked on written language in the early years.

ii. A number of quite full grammars of English exist, of which the most recent is Quirk, *et al.* (1972). For phonology, there is Gimson (1970), which is factually much more reliable

than the older studies of Daniel Jones, now considerably dated. The most comprehensive dictionary is the Webster *'Third New International.'*

iii. A few disorders have been studied by linguists, in this journal and elsewhere, but there has been no comprehensive approach.

iv. Phonetic and syntactic techniques are extremely advanced, and alternatives are available. There is much interest at the moment in developing comparably powerful semantic techniques.

v. Most of this work continues in the psychologically-orientated journals, such as the *Journal of Verbal Learning and Verbal Behavior*. A few language patterns have been evaluated convincingly, but no overall approach has been developed.

vi. Many suggestions have been made, but most are extremely general. The best review of this field is Lenneberg (1967).

vii. Introductions to suit most tastes are now available.

In other words, the future is wide open, and the therapist must be cautious. The linguist cannot yet answer with any confidence the question 'What structure should I teach next?', but he can offer good advice about the range of structures available, and this in itself is useful, for one can make a wise choice only when one knows the alternatives. At the moment, linguistics for the therapist, in my view, can offer two things: tested analytic skills, and a state of mind – a conscious and critical awareness of the task which has to be undergone. It should be clear from the above that linguistics by no means knows all the answers about language development; but it does I think now know most of the important questions which have to be asked, and it has taught its practitioners the value of asking questions in the first place. If I had to sum it up in a phrase, I should say that the contemporary benefit that linguistics can provide is a more explicitly principled therapy. It is a good workman who knows his tools, the proverb nearly said, and (as my cautionary remarks about terminology will have indicated) who knows the limitations of his tools. I think the road the two subjects, linguistics and speech therapy, have to take is clearly sign-posted and worth taking; all we have to do now is devise schemes of training which will enable all of us who want to go to travel along it.

¹ Cf. the emphasis on 'qualitative' criteria in, for instance, Hutchesson (1968).

² Cf. the idea of 'articulatory setting', used by Honikman (1966).

³ It is further discussed in Crystal (1966). For a convenient account of the main criteria involved in noun classification, see Christopherson & Sandved (1969: 105, ff.).

⁴ A similar loosely used term is 'telegraphic', with its implication that the child's speech is simply adults, with things left out. That this is not so can be seen from such typical utterances as 'my that dolly', which can hardly be viewed as 'reduced adult speech'. 'Telegraphic' may be a useful mnemonic label, but it must not be taken too literally. The child has its own linguistic system, its own rules, which have to be ascertained for each period.

⁵ This concern is by no means the sole prerogative of linguists, of course. See, for instance, the valuable discussion in Roberts (1968).

⁶ The arguments are well presented in Jakobson (1968).

⁷ To get an idea of the difference, compare the approach of Fry (1968) with the non-phonemic, generative approach of Crocker (1969). Basically the difference is whether to recognise phonemic units such as /p/, /f/ and /e/, or to talk in terms of the distinctive features, such as voicing, openness, or frontness, which combine in specific ways to produce contrasts.

⁸ The convergence of traditional syntactic and semantic problems with those of comprehension is well illustrated in Chomsky (1969).

⁹ See, for instance, the first three volumes in the Pelican linguistics series, Crystal (1971), Palmer (1971) and O'Connor (1972); a fourth volume will appear later this year (Leech, forthcoming).

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