PART I

Introductory sections

# Introduction

Why should a book about individual differences choose to focus on auxiliary
verb learning?

When I was first attached to the Bristol Longitudinal Study of Language
Development in the autumn of 1983, I had no clear idea of the direction
in which an investigation into individual differences would take me. Neverthe-
less, a survey of the existing child language literature highlighted the auxiliary
system as a feature on which children varied in a number of ways which
might possibly be related.

The auxiliary seemed to be of particular interest in three ways. Firstly,
it appeared that a high frequency of auxiliaries at a certain stage might be
associated with a distinctive 'style' or 'route' of language development, or
with strategies to communicate at a level beyond the child's current stage
of linguistic competence. Secondly, Gordon Wells' paper 'Learning and using
the auxiliary verb in English' (Wells, 1979a) showed extensive variation in
the rate of emergence of auxiliaries which he interpreted as evidence of chil-
dren's differing analytical abilities in the development of form classes. Thirdly,
evidence from experimental and naturalistic studies suggested that the auxili-
ary and the structures in which it participated were particularly sensitive
to environmental influences. A statistical relationship between the frequency
of Yes/No questions (Y/Ns) heard by children and subsequent rate of auxiliary
verb growth emerged as the most stable finding from correlational studies
of the effects of input on rate of language development.

Since the publication of Newport, Gleitman and Gleitman's (1977) study
of 'motherese' effects, the view has gained currency that children learn auxi-
liaries via the analytic route of hearing noncontracted, stressed forms in initial
position in Y/N inversions but first using them in medial position in declara-
tives. This soon became the accepted wisdom among child language
researchers and theorists working from widely divergent perspectives. Yet
an examination of the fine details of the published research revealed a number
of discrepancies and gave rise to some puzzling questions. These were both

theoretical and methodological in nature, and raised issues which were equally relevant to studying variation in the sequence and style of auxiliary verb learning as to investigating predictors of accelerated development. How, for example, do we define the auxiliary? Is the set of verbs included in child language research compatible with accounts of the processes involved in their acquisition? How do we measure rate of development? Is a faster rate of auxiliary learning as measured in previous research truly indicative of rule-based performance – or are there other explanations? How do we know whether usage reflects linguistic competence? Is the concept of 'acquisition' at all appropriate in the context of the auxiliary and, if so, how do we define it? Above all, why had input studies which subdivided Y/Ns found that it was not inverted Y/Ns which predicted auxiliary gains, but a category which tended to drop the auxiliary altogether?

In the research reported below these questions were addressed by analysing data from three sources. The recordings and transcripts of thirty-three Bristol children in Wells' (1979a) study were reanalysed in order to test alternative explanations for the differences in rate of development and to assess the effect of varying the set of verbs classified as 'auxiliary'. Data from thirty-two Bristol children in Barnes, Gutfreund, Satterly and Wells' (1983) study of environmental influences were also analysed in greater depth to test specific hypotheses about the relationship between input and auxiliary learning. Finally, using a combination of an elicitation task and home recordings of spontaneous speech, seven children from South Wales were monitored over a period of nine months in a more fine-grained study of variation in style, sequence and rate of development.

# 1 *The auxiliary and the young language learner*

## 1.1 The importance of the auxiliary in the child's linguistic development

Auxiliary verbs are an essential component of most well-formed interrogatives, negation, ellipsis, positive emphasis, and the negative imperative. They convey temporal and aspectual meanings and, in the case of the modal verbs, meanings of possibility, ability, permission, volition, obligation and necessity. The modals also form the basis of hypothetical reference and, through variation on dimensions such as type of modality and tense, convey requests of differing degrees of politeness (Perkins, 1983a).

   In the sequence of child language learning, analysis of emergence data (Wells, 1985) shows the importance of auxiliaries and the meanings they express in successive levels of development. Elaboration of the verb phrase is particularly dependent on the inclusion, co-occurrence and manipulation of the auxiliary element (see Wells, 1985, p. 269). It is also evident that children in the early stages of language learning are able to realise certain of the meanings and functions associated with the auxiliary by other means. Yes/No questions (Y/Ns) marked by intonation, and continuous and perfect aspect, for example, generally appear before the co-occurrence of the appropriate auxiliary and a main verb. Despite the possibility of alternative strategies to express auxiliary meanings, however, an increasing mastery of the syntax, semantics and pragmatics of auxiliary usage is an inextricable part of language development from an early stage.

## 1.2 Auxiliary verb learning

### 1.2.1 Studies of the auxiliary verb in young children

Studies which concentrate exclusively on the full range of auxiliary verbs or even a significant subset are relatively few in number. Much of our knowledge of early auxiliary verb learning comes from investigations into general linguistic development or into areas in which the auxiliary was not usually

the primary focus of attention. These include studies of negation, types of question, ellipsis, and continuous and perfect aspect.

Modal verbs have frequently been treated separately from the rest of the auxiliary class. Subjects in these studies embrace a wider age range (up to 12 years) than those referred to above (usually 2–4 years). Modal verb studies tend to concentrate on either syntax or semantics. Major's (1974) cross-sectional study of children's syntactic competence with modals is an example of the former type. Highly complex combinations of modal and primary auxiliaries were elicited in sentences which varied according to mood, tense, and polarity. The development of modal meanings in English is investigated in naturalistic studies by Perkins (1983a) and Shields (1974), and in experimental work by Hirst and Weil (1982).

Three pieces of research set out to investigate the auxiliary class without omitting any subcategory. Kypriotaki (1974) used an imitation test with thirty children aged between 2;1 and 5;1. Grammatical competence with fifteen possible types of auxiliary verb string was tested in declarative sentences, and affirmative and negative questions. Items therefore vary in complexity from 'NP + can see me on the floor', to some of marginal acceptability such as 'The new supermarket should have been being built slowly' (Kypriotaki, 1974, p. 89). In observational studies, Park (1971) analysed the auxiliary verb development in two German speaking children from 2;1 and 2;4 to 3;2 and 3;5 respectively, and Wells (1979a) followed the progress of the sixty younger children in the Bristol study of language development between 1;6 and 3;6. In the most comprehensive investigation into early auxiliary development to date, Wells examined the emergence and rate of development of auxiliary forms and meanings. Distribution of forms in the language of the children and in the speech addressed to them was compared, and relationships between rate of development and demographic variables such as sex and social class were examined. This influential piece of research, which is supplemented by further analyses in Wells (1985) to include data from older children, provided the initial impetus for the work described below.

### 1.2.2  Key aspects of auxiliary verb development

The change in perspective on auxiliary verb development during the years spanned by the above research mirrors shifts in the interpretation of language development in general. Gradually we have seen a movement away from an emphasis on the apparent ease and rapidity of language learning, characterised by 'across the board' progress (Chomsky, 1964, p. 39). More finely-

grained analyses have given rise to a more gradual account of how specific knowledge and 'limited scope patterns' (Peters, 1986) become integrated as a more broadly based rule system, possibly after undergoing a series of minor, closely spaced reorganisations (Peters, 1986). If sampling is infrequent, however, these can be wrongly interpreted as sudden, major developmental shifts.

With regard to the auxiliary, an example of the former approach is provided by Ervin-Tripp:

> Complex patterns such as the auxiliary system in English . . . are acquired in a relatively short period of time, obviously on the basis of transfer of patterns between items which do not share semantic features. I think it will be very hard to find any semantic commonality between *can*, *will*, and *do*, which would be adequate to the rapid acquisition of the system by 2 year olds. (Ervin-Tripp, 1973, p. 282)

A more recent perspective on the auxiliary results from research which shows the gradual extension of highly specific knowledge of auxiliaries to a wider range of linguistic contexts and syntactic frames before the various auxiliaries and their subforms (or allomorphs) are related and integrated across the contexts in which they occur. Such processes have been identified in learning auxiliary HAVE[1] (Fletcher, 1982), copula and auxiliary BE (Kuczaj, 1981b), and auxiliary inversion in Wh-questions (Kuczaj and Brannick, 1979). One result can be the existence of intermediate stages during which the child has a mixture of general and specific knowledge of the system being acquired. This can be seen in Kuczaj and Maratsos' (1983) analysis of auxiliary usage in Y/Ns in sixteen children aged 1;11 to 5;6. Evidence from patterns in inverted and non-inverted questions suggested that while children had a general rule requiring an auxiliary in initial position in Y/Ns (as evidenced by the absence of non-inverted Y/Ns), it was only applied to specific auxiliaries, even though other auxiliaries occurred in declarative sentences. On the other hand, it is acknowledged that across-the-board developments can also take place (Kuczaj and Maratsos, 1983), though these are the exception rather than the rule (Kuczaj and Brannick, 1979). This is an area of individual differences which will be explored below.

There has also been a growing appreciation that the earliest auxiliary verb usage tends to be not just syntactically unanalysed (e.g. Ervin, 1964; Klima and Bellugi, 1966; Menyuk, 1971) but also highly restricted semantically. The modal auxiliaries, for example, tend to be used first as pure performatives (Fletcher, 1979) for which emergence is piecemeal (Stephany, 1986). The further development of modal and primary auxiliaries then unfolds in a

sequence which corresponds to a combination of grammatical and semantic complexity (Wells, 1979a, 1985).

## 1.3  Individual differences and auxiliary verb learning

Problems associated with learning auxiliaries lead one to suspect that this would be an area of pronounced variation. Difficulties come under two headings: the phonological and the syntactic/semantic. Phonologically, the difficulty is that, unless used for contrastive stress, as operators in main verb ellipsis, or possibly in initial position in subject-auxiliary inversion, auxiliaries are most commonly unstressed. Since lack of stress is also frequently accompanied by phonological reduction and contraction, most auxiliaries have weak forms which occur in unstressed positions (Palmer, 1965). These may be syllabic forms such as /kən/ or nonsyllabic /kn/, or contracted forms (e.g. 'he's'). In addition, Fletcher (1983) has shown that, even in the language addressed to young children, there is variation in the degree of reduction of auxiliary forms. With regard to contraction, the auxiliary is both reduced, and enclitic to the previous morpheme, usually a noun or pronoun. As a result, the child is faced with both a segmentation task, and the difficulty of attending to non-salient items in the incoming stream of speech.

In addition to the phonological features of auxiliaries, they belong to the closed classes of lexical items. In contrast with the open classes, such as nouns, lexical verbs, and adjectives, which have high semantic content and characterise Stage I telegraphic speech (Brown, 1973), auxiliaries comprise a small, closed set of grammatical words, or functors, which have low semantic content. By one analysis, auxiliaries are not part of the propositional content of a sentence, but may co-occur with any proposition as a means of modulating the meaning according to time, modality and aspect. As a small set of items with such extensive applications, their meanings will be broad and polysemous, and not easily interpretable from aspects of the situational context (Woisetschlaeger, 1985).

### 1.3.1  Rate of development

Given the features outlined above, it is not surprising that considerable differences are evident in normally developing children in both age of emergence and rate of development of auxiliaries. The period from first emergence among sixty children to a criterion of mastery can range from less than three months to more than twelve (Wells, 1979a). Variation in the rate of learning auxiliaries has been found to be related to the frequency of auxiliaries in input (K. E. Nelson[2], Denninger, Bonvillian, Kaplan and Baker, 1984) or more usually

to an interaction between the quality and frequency of auxiliaries. In particular, Y/Ns with certain functions or syntactic features predict rate of development (Barnes et al., 1983; Furrow, Nelson and Benedict, 1979; Gleitman, Newport and Gleitman, 1984; Hoff-Ginsberg, 1985, 1986; Yoder and Kaiser, 1989). Further evidence of the auxiliary's susceptibility to environmental effects is provided by the experimental studies of K. E. Nelson and colleagues (Baker and Nelson, 1984; Nelson, 1977; Nelson, Carskaddon and Bonvillian, 1973). This issue will be pursued in Chapter 10 where the role of Y/Ns in clarifying the auxiliary for the child will be explored in detail.

### 1.3.2  Children with language learning difficulties

It can also be predicted that, despite its indispensability in making the transition to a more adult linguistic style, some of the essential features of auxiliaries are hurdles which some children only overcome with difficulty, and results of several studies suggest that anomalies in auxiliary verb development result from more than just a general language delay. Blind children, for example, are delayed in auxiliary development while normal in other respects (Landau and Gleitman, 1985). One child, described as a bright, slow language learner (Weeks, 1974), shows a delay in using auxiliary DO which places it well outside the expected sequence of development. Teenage prelingually deaf children make a large number of errors in structures which would usually contain an auxiliary, including errors both of omission and anomalous usage (e.g. 'I have been take my friend to park', Dawson, 1981, p. 69). The status of 'deafisms' is controversial (see Dawson, 1981), but there is some consensus that the prelingually deaf make considerable use of stereotyped expressions (Dawson, 1981; Moores, 1970), and it seems likely that many such errors are the result of rote-learning strategies.

Language-impaired children have particular difficulty in dealing with the type of structure in which the auxiliary participates (Haber, 1981, 1982) and one particularly illuminating study is reported by Fletcher (1983) in which the syntax of normally developing 5-year-olds was compared with that of a language-impaired group. The interesting aspect of this research is not simply that the normal children used more auxiliaries, nor that the delayed group made more errors of auxiliary omission. What is particularly thought provoking is that while the frequency of *full* auxiliaries, modals, DO-support, and other auxiliaries discriminate significantly between the two groups, the frequency of *catenatives* and *contracted* auxiliaries do not. One explanation would be that the language-impaired group had not been able to relate the

contracted and noncontracted forms, but did have the capacity to learn Pronoun + Contracted Auxiliary as unanalysed, unsegmented single morphemes.

### 1.3.3  Variation in style[3] of development

Several studies suggest qualitative differences between normally developing children learning structures containing auxiliaries. It will be shown in Chapter 7, for example, that the literature on tag questions shows highly varied patterns relating to error and the stage and rate of development.

Kuczaj links differences in the age at which two children (Abe and Ben) acquire auxiliary forms in declaratives and Y/Ns (Kuczaj and Maratsos, 1983) and in the acquisition of auxiliary and copula BE (Kuczaj, 1981b) to differences in the children's language learning style. The children are characterised as follows: 'Abe was a much more reflective language learner than Ben and appeared to consolidate much of his linguistic knowledge prior to employing it in his spontaneous speech. . . On the other hand, Ben appeared to be a much more impulsive language learner, frequently using forms and structures on the basis of fragmentary (and sometimes incorrect) analyses' (Kuczaj and Maratsos, 1983, p. 442). When we look at Kuczaj and Maratsos' results (pp. 442 and 443) it appears that Ben is actually the faster developer. In nearly every case, Ben acquired the target forms in declarative and Y/N contexts at an earlier age than Abe. On the other hand, Kuczaj notes elsewhere that in the acquisition of BE forms, 'Ben exhibited a constant lack of integration of allomorphs' (Kuczaj, 1981b, p. 80). Abe, by contrast, showed greater evidence of simultaneous acquisitions, which Kuczaj takes as evidence of the existence of a more integrated system.

If Kuczaj's interpretation is correct, children differ on two, possibly correlated dimensions: firstly, a willingness to use, and develop piecemeal, parts of a system which is relatively poorly understood; secondly, 'how quickly and on what basis children attempt to generalize' (Kuczaj, 1981b, p. 82). Evidence from children learning auxiliaries to form the compound past tense in German also suggests differences in the extent to which children proceed by piecemeal learning or by making generalisations (Mills, 1985). Mills' analysis, however, does not tally perfectly with the data from Abe and Ben. Essentially, the difference is that for Mills, some children are learning, context by context, which of two auxiliaries co-occurs with certain lexical verbs. These children, therefore, make no errors in auxiliary verb choice. The children who make the errors will be those who overgeneralise on the basis of the form heard most frequently. Ben, on the other hand, learns forms piecemeal, but makes errors because he is prepared to attempt generalisations

from too little evidence. Abe's data contain fewer errors because his more
reflective approach allows more secure rules to be extracted from a wider
range of linguistic experience.

This contrast between data from two aspects of learning auxiliaries suggests
that the various continua on which children differ may at times appear to
be poorly correlated. A common approach to learning different areas of a
linguistic system, such as the development of the auxiliary class, as opposed
to learning to apply an auxiliary selection rule to existing form-classes, may
give rise to quite different features in children's utterances.

### 1.3.4 The analytic–holistic, referential–expressive, and nominal–pronominal dichotomies: relevance for the auxiliary

Since the early 1970s a body of research has emerged which suggests that
a number of variables on which children differ during early language develop-
ment are associated in such a way that two distinct styles of language learning
can be hypothesised. These variables, which have been reviewed in detail
by Bates, Bretherton and Snyder (1988), Bretherton, McNew, Snyder and
Bates (1983), Richards (1987a), Nelson (1985), Wells (1986) are summarised
in Table 1.1.

At one extreme, some children appear to emphasise learning and using
nouns and noun phrases, use language for representational rather than per-
sonal–social functions, articulate clearly, and apply an analytic or 'bottom-up'
(Peters, 1986) approach to processing language associated with a predictable
sequence of grammatical and phonological development. This style has
attracted the labels 'referential' (Nelson, 1973), 'nominal' (Bloom, Lightbown
and Hood, 1975), or 'analytic' (Peters, 1983).

By contrast, other children use a higher proportion of pronouns and other
function words, learn stereotyped phrases, and lengthy unanalysed units, dis-
play advanced intonation but speak less clearly, use language for personal–
social functions and use a 'top-down' (Peters, 1986) approach to language
learning. Such children have been referred to as 'expressive' (Nelson, 1973),
'pronominal' (Bloom et al., 1975), and 'gestalt' or 'holistic' (Peters, 1983).

Before discussing the relevance of these studies to the auxiliary, it is import-
ant to emphasise that the dichotomy which has been created is to be regarded
as a useful conceptual tool rather than two discrete categories to which all,
or even some, language learners can be unequivocally allocated (Barnes,
1984). Each 'style' is therefore a collection of variables, each of which has
been shown to be related to at least one other variable in the group, and