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NOTES AND DISCUSSION

Why education needs linguistics (and vice versa)[1]

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One of the fundamental questions on which we linguists disagree is whether or not our subject is useful for education. On one side is a long tradition, stretching back to the classical world, in which the practical benefits were clear and agreed – for example, the early Stoic grammarians aimed to improve literary style (Robins 1967: 16), and the Latin grammarians wrote pedagogical texts for use in school (ibid.: 54). In modern times this tradition is represented by leading linguists such as Tesnière (1959) and Halliday (1964), whose work has been motivated at least in part by the desire to improve language teaching at school. On the other hand is an equally long philosophical tradition of 'pure' scholarship for its own sake, in which the only motivation was a desire to understand language better. Recently this tradition is most clearly represented by two linguists who otherwise have little in common, Sampson (1980) and Chomsky (Olson, Faigley & Chomsky 1991), both of whom have denied that linguistics has, can have or indeed should have any relevance to language teaching.[2]

The aim of this paper is to defend the traditional idea that linguistics has an important contribution to make in language teaching, though I shall not of course suggest that every piece of academic research should have a clear pay-off in terms of practical benefits. 'Blue-skies' research is just as important in linguistics as in other disciplines. All I shall argue is that our discipline, seen as a whole, has an important interface with education, and that research whose results cross this interface is just as important as that which feeds into, say, neuroscience or child development. Indeed, I shall go further by arguing that academic linguistics is

[1] I should like to thank Bob Borsley for first suggesting this note and for comments on two earlier drafts, and Ron Carter, Shirley Reay, Rafael Salkie, Mike Stubbs, Mike Swan, John Walmsley, Catherine Walter and an anonymous *JL* referee for comments on more recent drafts. I also received helpful comments from participants when I presented some of the material in a discussion session at the September 2002 meeting of the Linguistics Association of Great Britain and in a paper in the same month to the Associação Portuguesa de Linguística.

[2] Sampson (1980: 10) writes: 'I do not believe that linguistics has any contribution to make to the teaching of English or the standard European languages'. Similarly for Chomsky, who claims that linguistics is useless not only in teaching but in any sphere of practical life: 'You're a human being, and your time as a human being should be socially useful. It doesn't mean that your choices about helping other people have to be within the context of your professional training as a linguist. Maybe that training just doesn't help you to be useful to other people. In fact, it doesn't.' (Olson et al. 1991: 30)

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weakened if we ignore the impact of education on language, so information must cross this interface in both directions. If the interface is important even for 'pure' research, it follows that we cannot simply name it 'applied linguistics' and leave it to those who call themselves applied linguists. My point is that the debate is relevant to all linguists, however 'pure', because if education has a profound impact on language, we should know rather better than we do at present exactly what that impact is.

1. The historical background

It is important to explain the immediate background of the following remarks because they are somewhat biased towards the UK, and especially England and Wales. The recent history of education here has offered linguists a rare window of opportunity to contribute to education, and I shall refer below to some of these openings. Education has welcomed linguistics in a way that many of us could only dream of forty years ago, and one reason for writing this article now is to alert colleagues in the UK to the new opportunities. I am aware (at second hand) that other countries have very different educational histories, so I don't assume that the same opportunities exist everywhere. On the other hand, the arguments that I shall present below do apply, by and large, to all education systems, and I shall try to abstract away from the UK specifics in order to present them at a universal level.

The crucial question about any educational system in relation to linguistics concerns explicitness: how much attention is given to the explicit study and understanding of language. There are two logical extremes:

A. explicit teaching, in which language is sometimes the focus of attention and discussion, which necessarily involves the use of some kind of metalanguage;
B. implicit teaching, in which this is never the case, and the school's contribution to language development is simply to provide a rich linguistic environment.

Clearly the second extreme makes no contact at all with linguistics, but the same can also be true of explicit teaching – after all, it is possible to talk explicitly about language without knowing any linguistics. The alternative to linguistics is often called 'traditional grammar', a term that I shall use but with the strong caveat that it applies only to the degenerate relics of the historical tradition referred to earlier. Traditional grammar (in this sense) is traditional because schools simply transmit it from generation to generation with very little debate or understanding, and because it has no roots in modern linguistics or indeed in the pre-modern linguistics of previous centuries. It is fragmentary, dogmatic and prescriptive – very different from modern linguistics, and very much harder to defend on educational grounds.

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The contrast between linguistics and traditional grammar provides a further split, so there are three possible approaches to language in any education system:[3]

A1. explicit teaching of traditional grammar;
A2. explicit teaching of linguistics;
B. implicit teaching.

This crude typology is helpful for describing the recent past. As a first approximation, we may say that the UK passed through a period of implicit language study during the 1960s, 1970s and 1980s, in which explicit study of language simply vanished from most schools. 'The overwhelming majority of teachers in the UK … concede that attention to grammar and to the forms of language has been neglected' (Carter 1996: 8). Australia seems to have passed through a similar period of rejection: '[In Australia] the language system has completely disappeared from view in schooling' (Rothery 1996: 86). The United States seems to be divided between traditional grammar (Battistella 1999) and the 'whole language' movement, which effectively excludes grammar teaching (and most other parts of linguistics) by requiring it to be used only when relevant (Weaver 1996).

In the UK, a series of government reports during the 1980s and the 1990s recommended more explicit teaching (Carter 1994), and combined with a new national curriculum and a 'national literacy strategy'[4] to produce a swing towards more explicit and structured teaching about language in the English class; and more recently there has been a similar shift in the teaching of foreign languages.[5] This left open the choice between traditional grammar and linguistics, but since traditional grammar had all but died out[6] in the UK's schools during the 'implicit' period, it was relatively easy to persuade the government agencies to accept linguistics. Indeed, the door was already wide open, as can be seen in official guidance materials such as *The grammar papers* (Anon. 1998). This happy situation contrasts with that in the United States, where traditional grammar seems to be much stronger and linguistics has to fight much harder for a place.

[3] Of course the reality is much more complex than this thumb-nail sketch suggests; teaching may be more or less explicit and more or less influenced by research-led linguistics.

[4] More information about the curriculum and the literacy strategy can be found, respectively, at http://www.nc.uk.net/home.html and at http://www.standards.dfee.gov.uk/literacy/.

[5] A new 'framework' for foreign-language teaching appeared in 2003 and can be found at http://www.standards.dfes.gov.uk/keystage3/strands/?strand=TLF (see also fn. 17 below).

[6] In fact, traditional grammar continued to be highly influential in UK schools, but only as a stereotype against which liberal English teachers rebelled. It was – and is – often referred to as 'the grammar grind' – a boring and pointless activity, consisting of parsing and analysis, which was inflicted on long-suffering students. It is interesting to notice that this phrase actually derives from Browning's poem 'A grammarian's funeral', in which it was the grammarian, not school pupils, who 'ground at grammar'.

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The recent history of the UK, Australia and (in some respects) the United States seems to contrast with most of the developed world (Hudson 1998). The difference is especially marked in grammar, which is an established part of the school curriculum at both primary and secondary levels in most countries of Europe and the Americas. The same is true if we consider earlier periods of history; ever since classical Greece, grammar has been a major component of school learning. (For example, it was one of the three subjects that comprised the Mediaeval *trivium*.) The 'implicit' period of language teaching stands out as a historical and geographical aberration; but it may have been helpful as a way of clearing the traditional ground for a fresh start.

In other respects, the UK has similar educational needs to most other developed countries so the following points should be easy to translate into terms which suit other countries. Most obviously, English is the national language here, so when I refer to English I mean the national language – French in France, German in Germany and so on. Like most other countries, the UK has an important new migrant population who speak community languages, so when I refer to community languages I mean Punjabi, Turkish and so on, spoken in the UK; but we also have the indigenous community languages of Welsh and (on a smaller scale) Gaelic. Like all other countries, we need to learn foreign languages, though (like most other English-speaking countries) we dislike these at school level and postpone enthusiasm for adult language courses (Kelly & Jones 2003). In short, the context of language teaching is much the same in the UK as in other countries. And of course, as in all other countries, language supports education in a very special way as the medium of instruction, the medium of testing, the medium of exercise and the medium of a great deal of thought.

This, then, is the historical background. The UK's language needs are similar to those of many other countries, but the recent history of language teaching in this country has been relatively encouraging. But as well as encouraging, it has been challenging because we have suddenly found ourselves in a new situation where doors that were previously closed are now open and we are invited to display our wares. This raises urgent questions: Which of our wares are relevant? What educational needs are relevant to us? And do we stand to gain from a closer relation to education? These are the questions that I shall try to answer below.

2. Which parts of linguistics does education need?

Linguistics offers broadly three kinds of knowledge: general ideas, theoretical models and analyses of language systems, which we can call, respectively, 'ideas', 'models' and 'descriptions'. Ideas are generally quite simple but they may conflict with received beliefs and attitudes so learners may need to be persuaded, whereas models and descriptions tend to strike learners as 'technical' and perhaps overwhelming in detail and complexity.

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The IDEA which is most obviously relevant to education is DESCRIPTIVISM. For example, since we linguists all agree in rejecting prescriptivism,[7] we can speak with one voice in favour of non-standard[8] dialects. This involves a direct conflict between linguistics and traditional grammar, which must be played out at different levels from public institutions (such as official syllabuses) through the media to individual teachers, parents and children.

In the area of English, linguistics has won this battle in the UK at least at the first level, so the official documents now use the term 'non-standard' where previously they used 'wrong' (or 'error'). For example, the National Curriculum for English in England (Anon. 1999: 23) notes: 'When teaching standard English it is helpful to bear in mind the most common non-standard usages in England.' This assumes that children need to be taught standard English explicitly, rather than to be exhorted to 'speak carefully'. So far as one can tell, prescriptivism is no longer a serious issue in education, either for school teachers or for their employers;[9] but such changes take time and prescriptivism is still common among the general population. It is difficult to know why attitudes have shifted, as they undoubtedly have. In part,

[7] It is important to be clear about what descriptivism means, given that languages are themselves normative systems which distinguish the in-group of experts (native speakers) from the rest of the world. Descriptivism tries to DISCOVER and analyse the normative system (regardless of its social status), whereas prescriptivism tries to CHANGE it. Thus, descriptivism allows us to discriminate between those who know the norm and those who don't (i.e. between mature native speakers and learners), and also between the norms (competence) and the behaviour (performance) which may or may not follow the norms; it does not mean that 'anything goes', nor that anything which any native speaker says or writes is equally valid evidence for the norm. This view is especially important for education in the more highly codified areas of language such as spelling; for instance, a purely descriptive linguist is entitled to say that ⟨grammar⟩ is the correct spelling and ⟨grammer⟩ is wrong.

[8] Our terminology may be more important here than we think. The term NON-STANDARD implies that the only basis for definition is negative, by contrast with STANDARD. That isn't our intention, of course, but the connotations are less important in academic research than in a class-room, where a term is needed for the language of some pupils. The choice of terminology is a linguistic matter so we ought to have something to contribute here. One promising proposal is to contrast 'normal' (for non-standard) with 'prestige' (Emonds 1986), which has the great attraction of treating non-standard as the default variety. We can accept the terminology without commitment to Emonds's theoretical claims about the 'prestige' variety also being unnatural; I comment critically on this assumption in section 5.

[9] Ironically, the end of prescriptivism has coincided with an upsurge of concern about standards of writing and speaking, which is not the same thing as prescriptivism. A descriptive linguist can legitimately describe and evaluate the quality of written or spoken language in terms of its effectiveness as well as in terms of its 'accuracy', meaning how far it conforms to the accepted norms. The whole point of language education is to improve this quality and, in principle, it is possible to measure it and to compare overall standards across groups or times. Chomsky expresses this view clearly when asked: 'For the last few years, the media and the political establishment have asserted that the U.S. is experiencing a literacy crisis. Do you agree?' His reply is: 'Sure. It's just a fact. I don't think it's even questioned. There's a big degree of illiteracy and functional illiteracy. It's remarkably high.' (Olson et al. 1991: 30)

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no doubt, it was because traditional grammar died during the implicit period, but linguists (e.g. Halliday, McIntosh & Strevens 1964; Trudgill 1975; Aitchison 1981) certainly played an important part as well in sowing the seeds and, more recently, some of us were able to intervene in early drafts of the latest official documents.

Another important (and related) idea is VARIATION. We all accept that languages vary across groups (geographical and social variation) and across time (developmental and historical variation) and that a given individual will speak or write differently in different social contexts; and indeed this is part of everyday experience. In education, however, it is tempting to simplify the object of learning to the point where it bears very little relation to any kind of reality. Every child is aware of variation in its mother-tongue, but may be presented with a picture of pure simplicity and uniformity when learning a foreign language. The idea of variation is now well entrenched in the English curriculum for England, where notions like 'context' and 'genre' are much in evidence alongside more everyday terms such as 'dialect' and 'language'. This change towards a more sophisticated view of linguistic variation can be traced directly to the work on variation of Halliday and his colleagues in Australia (Halliday 1978; Cope & Kalantzis 1993) so once again linguists have, in fact, had a considerable effect on at least one educational system.

Other ideas apply to the analysis of language systems and take us right into the heart of linguistic theory. For example, we all know how important it is to distinguish between 'form' and 'function' – word class is different from grammatical function, sentence-type is different from illocutionary force and so on. But although this distinction is equally important in school teaching, it cannot be taken for granted and novices are often convinced that *stone* is an adjective in *stone wall* simply because it is behaving like an adjective. Here are a few other examples of theoretical contrasts that we take for granted and which schools need:

- Diachronic and synchronic relations – e.g. in lexical relations etymology is different from productive patterns, so *science* is not 'derived from' Latin *scientia* in the same sense as *dancer* is derived from *dance*.
- Types and tokens – two essays may contain the same number of word tokens but very different numbers of word types; this contrast underlies the important notion (for education) of 'lexical density', which is one way of measuring vocabulary growth.
- Systems and texts, competence and performance – performance and its product (a text) is different from the system of rules (competence) which underlies it. For example, the fact that eighteenth-century novels used complex sentences does not mean that eighteenth-century grammar was complex. (I return to the contrast between systems and texts below.)

None of these ideas are either contentious among linguists or intellectually hard to grasp, and they should surely be part of the language education of

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any citizen. Even though educated adults may resist some of them, a generation raised on them from primary school should find them commonplace.

THEORETICAL MODELS define the structure of the language system – models of phonology, graphology, morphology, syntax, semantics and the lexicon, and of all these areas collectively. In addition, there are models of how we use the system – pragmatics, the psycholinguistics of language processing, sociolinguistic models of language behaviour. It is important for school teachers and pupils to have at least a rudimentary understanding of how all the parts of language relate to each other and to the rest of the world because the alternative is confusion and frustration. A case in point is the typical dictionary entry, which makes numerous assumptions about the architecture of language, and is very confusing and frustrating without some understanding of these assumptions.

Although we linguists still have no complete agreed model for any of these areas, we do agree on a number of basic points which are so obvious to us that we never even discuss them; for example:

- Sounds are different from letters. Even those who specialise in teaching young children are prone to confuse letters with sounds (to say nothing of the contrast between sounds and phonemes). The problem arises from the need to use the same alphabet to represent both, and is especially acute in written material produced for teachers; it is less important in the classroom situation where sounds are pronounced and letters written. Linguists solve the problem with different written conventions – e.g. the same word can be written as ⟨Ann⟩ for the written form or as /an/ or [an] for the spoken. School teachers would benefit enormously from some such convention.
- Words are different from their meanings. Even our convention of distinguishing meanings and words typographically would be a great innovation in schools, where it is possible to attribute both four legs and a grammatical number to the same entity 'dogs'.
- Lexemes are different from word-forms and inflections. If the only technical term available is 'word', it is impossible to decide whether the singular *dog* is the same as the plural *dogs*, or whether the latter is the same as the verb *dogs*.
- Sentences as defined by punctuation are different from those defined by grammatical structure. It is a waste of time, or worse, to exhort children to put full-stops at the end of their sentences before they have some understanding of grammatical sentence-hood.

Beyond these points of agreement we are in the territory of ongoing research where the scene changes every decade. In the long run, education will benefit enormously from the insights of a well-founded general model of language, but the choice must be based on research evidence rather than PR. A model which is demonstrably false can hardly help education, so the

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best way to help education is to improve our models with an eye on future benefits. Meanwhile it would be helpful for those in education at least to be aware that there is far more theoretical diversity in linguistics than is generally recognised. In the area of syntax, for example, Systemic Functional Grammar (Halliday 1978, 1985, 2002) has a far higher profile in education than in linguistics, and is often presented as the only alternative to Chomskyan 'generative grammar' (e.g. Anon. 1998).

For most areas of language we are actively building theoretical models, but one area has been badly neglected: writing – spelling, punctuation and the specifics of written grammar and discourse structure. Worse still, we have too often assumed that the differences between spoken and written language are mere trivialities of substance. This gap is obviously crucial for education:

> [L]inguistic theory has not made a clear distinction between written and spoken language. That is, linguistics has paid attention to the sound features of language, but has assumed that the grammar of speech and the grammar of writing are in all essentials the same. (Kress 1994: 6)

This complaint is hard to counter as it rings uncomfortably true, and it is easy to sympathise with the view that 'linguistic theories have, on the whole, not been conducive to enlightened and effective practice in [the teaching of] either reading or writing' (ibid.).

The relations between spoken and written language are important because educationalists have to take some position on how much new grammar children learn when they learn to write. One view which is influential in education (Kress 1994, 1997; Carter 1999) is that they are essentially starting from scratch and learning a radically different grammar. To the extent that they have considered the matter at all, linguists have tended to see written and spoken language as sharing a common core (Biber, Johansson, Leech, Conrad & Finegan 1999; Leech 2002). However, we are rather short of theoretical models of the relation between spoken and written language in general, and especially in relation to grammar. This is an area where future research will surely involve both linguists and applied linguists (as well as psychologists), to the great benefit of education.

As far as DESCRIPTIONS are concerned, we linguists are (by definition) the experts. We write books about the grammar or phonology of English, Polish, Swahili and so on, and we all accept that a language is a complex system which can be dissected and described. Many of us learned about language systems first by learning a foreign language in a systematic way at school, so we are very familiar with inflectional paradigms, rules, exceptions and so on. We know fairly precisely what kind of thing a language system is, but most other people have very little idea even that a language might have (or be) a system. What they feel much more comfortable with are texts – individual bits of speech or writing. They can focus on texts, discuss them and make judgements; in short, they can relate both intellectually and emotionally to

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texts but not to systems. For most of us linguists, I suspect, it is the other way round: give us a verb paradigm and we can say something sensible, but show us a paragraph and we don't know where to start.

Here too linguistics has something important to offer that education needs. When a non-linguist makes a judgement on a text, it is (typically) a global judgement in terms of what UK English teachers call its 'effect' – how interesting or compelling it is and so on. There are some arguments for taking this top–down approach in trying to understand a text (Kress 1997). Non-linguists' judgements may be penetrating and illuminating, and non-linguists may even be able to internalise the features of the text to the extent that they can imitate its style, so they must be analysing these features implicitly; but they cannot make the analysis explicit. (There are of course exceptional individuals who can verbalise their analysis; but the point of education is to bring everyone up to the level of the best.) What is needed here, quite clearly, is a linguist's ability to relate global properties to specific linguistic patterns.

For example, we are fortunate in the UK to have a very successful school subject called Advanced-level English Language (which can be taken in the last two years of secondary school, in Years 12 and 13). It has proved very popular, with about 14,000 candidates each year for language alone and 18,000 for language and literature combined,[10] and it has strong roots in linguistics – indeed, it inspires a lot of school-leavers to apply for places in linguistics departments. However, its focus is on texts rather than on the system, so even the most successful students are often surprised by the system-focussed linguistics that they meet – for the first time – at university. However, some teachers know enough linguistics to teach the IPA (the International Phonetic Alphabet) or some systematic grammar, and their pupils are already starting to think in terms of systems when they reach university.

This view of language as a system is perhaps the single most important idea that linguistics has to offer schools. This is an important part of what it means to 'understand how language works' and, arguably, this understanding is likely to bring benefits in other areas of education (as I shall argue below). The case for teaching children about language systems is very strong, but it is easy to imagine objections. Some people believe that a language system is too abstract and abstruse for any but the most academic to study; but this cannot be true, because grammar (one part of a language system) can be taught successfully across the academic range. To take an extreme case, Elley and colleagues taught transformational grammar to a mixed-ability group of teenagers in Auckland, New Zealand, and were so successful that almost all of them could produce a correct tree structure for test

[10] For the official figures, see http://www.qca.org.uk/nq/subjects/a_level_results.asp.

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sentences that they had not seen before (Elley, Barham, Lamb & Wyllie 1979; Elley 1994). Another objection is that, unlike texts, the system is inherently boring, but this presumably depends on how it is taught and the same objection could be raised against most areas of school teaching. In relation to language, there are examples of good practice where students have found the system interesting. For example, Wolfram teaches dialect systems through inductive exercises and concludes that 'the study of dialects can indeed become a vibrant, relevant topic of study for all learners on a formal and informal level' (Wolfram 1999: 62).

One measure of the gulf that still exists between linguistics and education, at least in the UK, is that those in education often have very little idea of the expertise that we have in the study of language systems, even though they may be aware of linguistics in general terms. For example, those who designed the UK's curriculum did not consult any linguists even for the relatively technical matter of grammatical terminology, and as a result got into serious difficulties. Once a group of us had offered our help, they were glad to accept it, and accepted that they should have consulted earlier. (Incidentally it is pleasing to report that, as a result, the UK now, for the first time ever, has a government-sponsored official glossary of linguistic terminology for use in schools in both first- and second-language teaching, and that this glossary is more or less compatible with modern linguistics.)[11] What this example illustrates is that we cannot assume that our expertise is as obvious to those in education as it is to us, so we may need to take energetic initiatives to advertise it.

What education needs from us, then, is ACCESSIBLE descriptions of RELEVANT language systems. Almost any part of language, from phonetics through morphology and the lexicon to semantics, is relevant to education in some way. Some languages are more relevant than others, and relevance will depend on geography. In the UK, English is relevant everywhere but so are the major taught European languages and, in some areas, community languages are too. Almost any academic linguist could probably provide something which is both relevant and accessible to school teachers. The essential requirement is a willingness to compromise – to sacrifice theoretical purity, ultimate truth and completeness in order to meet the needs of the user. This is not a trivial task; for example, it is a serious challenge to explain the contrast between finite and non-finite verbs in a way that novices can understand. As we all know, the problem with explaining a system (such as

[11] The glossary is part of the official framework for the National Literacy Strategy for primary skills, and is available at http://www.standards.dfee.gov.uk/literacy/publications/ (see 'Framework for teaching'). We linguists were allowed to change definitions but not the list of terms defined. Our definitions are a compromise between purity and comprehensibility. The revised glossary has also been incorporated into a slightly expanded glossary for foreign-language teaching – see http://www.standards.dfes.gov.uk/keystage3/strands/?strand=TLF.

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a language system) is precisely that it is a system where everything depends on everything else; converting a network of mutually defining concepts into a linear presentation is not easy.

Description of language necessarily involves some kind of analytical system which defines a standard TERMINOLOGY and NOTATION. To take an obvious example, a phonetic description of some dialect will need to use a phonetic notation and terminology for classifying sounds (and perhaps also a phonemic notation). The IPA is one of our most impressive achievements, and it is potentially of enormous importance in education – for example, a teacher could use it when planning phonics-based initial literacy, when helping intermediate pupils to understand the spelling system, when teaching foreign languages or when exploring accent variation. A language teacher without the IPA and some phonetic terminology is like a music teacher without musical notation or a geography teacher without maps. The same is true of sentence structure. Even traditional grammar offered notations for diagramming sentence structure (the most familiar of which in the anglophone world is the 'Reed and Kellogg' diagramming system – a version of dependency grammar), but we have a range of alternatives – trees, box diagrams, stemmas, arrows and so on – any one of which is better than the traditional systems, and infinitely better than no notation at all. As for terminology, we have more than enough for anyone's needs and the problem is selection.

This list of descriptions that we could provide for schools is not necessarily a plea for new research, as there is a vast amount of relevant research which is ready for use but not yet accessible. However, some of the descriptions that education needs are not yet ready and require new research which most of us might not otherwise consider 'respectable'. For example, it is only recently that linguists have started to take seriously the peculiarities of written language and punctuation (Huddleston & Pullum 2002: chapter 20). The list could be extended to include language development during the school years, how individuals develop vocabulary and many other topics of direct concern to education. Considering the vast amounts of research that have been lavished on English, it is astonishing how little is known about these things even in English, let alone other languages.

In summary, although education does not need our theoretical disputes and tentative research, it does need three of our 'finished products': general ideas about language, theoretical models of how it is organised and how it relates to other things, and specific and more or less technical descriptions. Persuading teachers that linguistics is useful is not the end but the beginning, because then the really hard work begins: delivering the models and detailed descriptions. But this is a challenge rather than a problem, because model-building and detailed description are (arguably) what we do best.

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3. Which parts of education need linguistics?

There are good reasons for starting with MOTHER-TONGUE ENGLISH teaching. Most obviously, this is the language which most children already know so this is where any explanation of 'how language works' should start.

No doubt most linguists would argue that a deeper understanding of language deserves a place in any liberal curriculum because of its long-term intellectual benefits; if it is important for children to understand their bodies and their social environment, it is at least as important for them to understand the faculty which makes social life possible. Unfortunately this argument puts language in competition with philosophy, economics, art, history and all the other undoubtedly important areas of life. We would also claim that language is inherently interesting, but this is ultimately a matter of taste. Consequently, it is important to look for more robust arguments.

Encouragingly, the UK National Curriculum for English shares our enthusiasm for understanding language: 'The study of English helps pupils understand how language works by looking at its patterns, structures and origins' (Anon. 1999: 14). However this search for understanding is immediately followed by a practical justification: 'Using this knowledge pupils can choose and adapt what they say and write in different situations' (ibid.). This may sound rather lame, but it summarises most of the English curriculum. In the context of a curriculum in which every component has to justify its place in competition with other components which cannot be fitted in, it is probably reasonable to look for tangible benefits, and it is encouraging that understanding of language survives the competition.

The main justification for linguistics in mother-tongue English teaching, therefore, is that it defines the knowledge that helps children to use English better. Using English better is clearly important because English is the medium of education so the better children use it, the better they will progress in other subjects. But in what sense can children learn to use English better? The recent history of linguistics makes this notion problematic so the question deserves a serious answer.

It is easy to misinterpret linguists as saying that mother-tongue English teaching is a waste of time. After all, if language is an 'organ' that grows unaided, regardless of instruction, teaching is as irrelevant to the growth of the mother-tongue as it would be to growing taller or reaching puberty. But this misses the point of mother-tongue teaching: society has decided that the outcome of 'natural' language acquisition is not enough. We also need to be able to read and write, abilities which very few people could acquire simply by exposure;[12] but even that isn't enough without the entire linguistic

[12] It could be objected that plenty of people have, in fact, become proficient and mature writers without much instruction except in the first year or so, but the problem is that about the same number of people fail to achieve an adequate level of literacy. In the UK, some seven million adults are classified as 'functionally illiterate', and the main argument for

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competence of a mature educated person – a range of grammar and vocabulary that goes well beyond what is needed in normal dealings with friends and family.

In short, mother-tongue teaching takes over where 'nature' stops. In the days of traditional grammar, it tried to 'improve' the natural product, but at least in the UK the sole aim is to enlarge it. If linguists find this goal praiseworthy, it is no coincidence, because the goal is, at least in part, the result of work by linguists since the 1970s. The principal exponent of this view is Halliday, whose ideas are summarised by Stubbs as follows:

> One of his [Halliday's] basic concerns in education is to extend the functional potential of the child's language. He sees the ability to control varieties of language as fundamental to education (1978: 28); teaching Standard English is teaching a new register in which the child can do new things (1978: 210, 234); and teaching literacy is also extending the functional potential of language (1978: 100). (Stubbs 1986: 3)

According to this view, schools should help children to learn new varieties of their mother-tongue, including the standard and written varieties. The notion 'variety of language' is notoriously hard to define (Hudson 1996: 22–24) but, at the very least, a variety includes both vocabulary and grammatical structures which are not found in other varieties.

How is this goal of increasing the child's language repertoire best achieved? In particular, what is the role of explicit instruction? This is a matter of pedagogy and psychology rather than linguistics, but we can at least identify the two extreme logical positions and their consequences. If instruction plays no part at all, the school's role is merely to provide structured experience of the relevant language varieties and to leave the children to learn as much from this experience as they can. At the other extreme, the school provides no 'raw' experience at all of the varieties concerned, but does provide structured accounts of the relevant facts. Neither of these extremes looks promising in itself, so no doubt the best answer lies somewhere in between – a combination of instruction and experience. The important feature of this conclusion is that teachers must be able to structure both the instruction and the experience, which means that they need to know how the varieties of language are themselves structured – hence the need for linguistics. Without a proper systematic description of the variety concerned, it is difficult to see how a teacher can teach it effectively. To take the case of standard English, teachers need a check-list of the differences between standard and non-standard dialects. This list would, in fact, be quite

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explicit instruction is that some people cannot manage without it. We return below to the question of whether explicit instruction in writing 'works'.

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short and eminently teachable by a combination of instruction and experience; but only a linguist can provide it.[13]

In short, mother-tongue teaching needs good descriptions in every area where children's competence is being developed, from spelling through vocabulary to syntax and word meaning. We already have good descriptions for some languages, but (as we all know) language is so rich that we can never claim to have finished. The descriptions required must be as sophisticated as we can make them because (by definition) the goal is to match the full extent of a mature native speaker's knowledge about the items in question, including all the 'messy' details about social significance, collocational preferences and meanings. It is true that most teachers already know most of these details implicitly, but analysis takes time and a linguist's skills, so it is unreasonable to expect a teacher to provide clear explanations at short notice. Dictionaries already provide some of the descriptions needed, but teachers could use many more kinds of descriptive material.

One issue which is particularly controversial in this area of teaching is the role of explicit grammar instruction in developing writing skills.[14] A number of research projects compared the writing of matched groups of children with and without formal grammar instruction, and found no positive correlation between grammar-knowledge and writing skills (O'Hare 1973; Elley et al. 1979).[15] These projects support the received wisdom, which is that grammar teaching has no beneficial effect on writing (Elley 1994), but this research evidence is actually much weaker than it appears at first. There are projects which have produced evidence of clear positive benefits either for highly structured grammar activities such as 'sentence combining' (combining two simple sentences into a single complex one) or for explicit grammatical instruction and analysis (e.g. Laurinen 1955; Hillocks & Mavrognes 1986; Klotz 1996). Moreover, instruction seems to be most effective when it is focused on specific writing targets; for example, Bryant and his colleagues found that instruction about how to use possessive apostrophes had a positive effect on children's use of them (Bryant, Devine, Ledward & Nunes 2002). The answer seems, therefore, to be that under the right circumstances explicit grammar teaching can be effective (in terms of writing skills). This is important for us as linguists because it is our responsibility to provide suitable descriptions of the patterns to be taught.

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[13] Hudson (1992: chapter 5) contains a long list of alternative non-standard forms, while Hudson & Holmes (1995) gives a short list of the most important standard forms and the contrasting non-standard forms.

[14] The same question arises for reading skills. There is also some research evidence that explicit attention to grammatical patterns can improve these (e.g. Chipere 2003).

[15] I ignore a number of projects in which the grammar instruction did not even improve the children's knowledge of grammar; although these are clearly irrelevant they are often quoted as evidence that grammar teaching has no effect on writing. See Hudson (2001) for a brief bibliographical survey of the literature on grammar teaching and writing.

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However, descriptions are not the only contribution we can make to mother-tongue education. This teaching should also use and impart all the general ideas that I mentioned earlier – descriptivism, variation, form/function and so on. These notions (and the relevant terminology) should all become part of the child's growing understanding of language, so that they eventually provide a conceptual framework within which all the descriptive details can be accommodated. None of this is completely new, of course; all school systems already teach general ideas about language and specific details. The difference is that these ideas and details are too often wrong and confused, so the role of linguistics is to replace them with better alternatives.

In the UK, mother-tongue English teaching is combined, especially at secondary level, with the teaching of LITERATURE. Linguistics can help here too by providing ideas and descriptions; for example, Stubbs shows the relevance of ideas such as presupposition, entailment and coreference to the way in which a range of people summarised the plot of a short story (Stubbs 1986: chapter 7). Any tools that linguistics can offer are clearly important. So long as language and literature are coupled administratively, it is obviously important for the relationship to be as productive as possible. However, this coupling has had the unfortunate effect of downgrading the language element, so it would be wrong to give the impression that linguistics can only justify itself by helping with literature.

Part of the problem is a question of semantics: What does the term 'English' mean, as part of the school curriculum? The answer is that it wobbles confusingly between 'the English language' and 'literature written in the English language'. (The same confusion bedevils modern languages as well.) It is the language element that earns the subject its place as one of the obligatory core subjects; but (at least in the UK) its teachers are mostly graduates of literature with very little academic training in language so it is in literature that school teaching is supported by academic study. This is basically a political problem, but the more content and training linguists can provide, the stronger the language element will be. At some time in the future, linguists may even decide to campaign for a total separation of the two elements.[16]

A different kind of English teaching in the UK is needed for pupils who have moved here from another country and don't yet speak English fluently, who are referred to here as learners of ENGLISH AS AN ADDITIONAL LANGUAGE (EAL), or English for Speakers of Other Languages (ESOL). This is a relatively new area of language education, whose parameters are still changing,

[16] The separation of language and literature (in 2002) is a major suggestion in the response of the Linguistics Association of Great Britain to a UK government discussion paper on the future of education; the LAGB response is available at http://www.phon.ucl.ac.uk/home/dick/ec/ectop.htm.

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but it seems clear that EAL teachers need even more linguistic expertise than mother-tongue teachers do, including (if possible) some understanding of the learners' first languages. Linguists have a clear part to play in providing the relevant descriptions.

However, whatever may be needed for EAL teaching, there is certainly a need for good descriptions of COMMUNITY LANGUAGES – the languages of linguistic minorities. In the UK, these include the ancient indigenous Celtic languages, Welsh and two smaller languages, Scottish and Irish Gaelic. Welsh is now taught as a compulsory subject to all pupils in Welsh schools, including those who do not speak it at home, but for all it is taught alongside English so it is important to ensure that the two languages are taught in ways that are at least compatible in terms of both general ideas and specific descriptive details such as terminology. This cannot be taken for granted, but linguists can help by checking their descriptions for compatibility. The same is true, of course, for the very much larger number of new community languages (of which London alone boasts no fewer than 300 by the latest count). Many of the larger communities provide ad hoc mother-tongue teaching out of regular school hours, and linguistic descriptions are just as necessary for these 'Saturday schools' as for other mother-tongue teaching.

So we arrive at mainstream FOREIGN LANGUAGES. The link via EAL and community languages helps to show that the division between mother-tongue English and foreign languages is less clear than it might seem. This is an important point because 'there is a great deal of fragmentation between the different branches of language teaching, and often a sharp opposition between mother-tongue and foreign-language teaching' (Stubbs 1986: 247). Once again, it is probably obvious that foreign-language teachers need linguistically sound descriptions at least as much as mother-tongue teachers do; but equally obviously, it is important for these descriptions to mesh not only with each other but also with the mother-tongue descriptions so that they all fit together into a coherent view of language. Work in English should support, and be supported by, work in the French lesson; but in the UK this has not generally been the case. At least in terminology, anarchy has reigned supreme for over a century. The only attempt to introduce order was early in the twentieth century, when Sonnenschein tried to introduce a unified and universal terminology for grammar, but he fell foul of Jespersen and the shortcomings of his own system (Walmsley 1989). Rather surprisingly, we now have a government syllabus for foreign-language teaching[17] which has a real chance of integrating the two branches of language teaching

[17] This is the 'framework' for teaching modern foreign languages in Years 7, 8 and 9 which was mentioned in fn. 5. It includes a glossary which is explicitly based on the one for first-language literacy at primary school, and also uses a general model of language organised at the three levels of word, sentence and text which is borrowed explicitly from the English literacy 'framework' (cf. fn. 11).

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both conceptually and in terms of terminology. This is precisely what linguists have been advocating to the government for some time, so it may not be too fanciful to believe that we had some influence on the decision.

Foreign-language teaching in most English-speaking countries faces the special problem that there is no obvious first foreign language as there is for the rest of the world, so there is no one language which is taught in all schools, and foreign-language teaching has tended to suffer from the resulting fragmentation. However, fragmentation is the reality of adult foreign-language teaching: as in other countries, adults are quite likely to need a foreign language for work or pleasure which they did not learn at school. This raises the question of why we learn any foreign language at school: in order to be able to use that particular language, or in order to be able to learn whatever other languages we may need later?

The second answer clearly makes better sense.[18] The assumption behind this answer is that it is easier for adults to learn a language if they already have some explicit understanding of language structure. The Nuffield Languages Inquiry, a semi-official inquiry in the UK, makes the case strongly:

> Too many pupils – including those achieving high grades – emerge from secondary education with limited practical competence, low levels of confidence and negative attitudes towards language learning. Many have a poor understanding of grammar, which makes future language learning difficult and limits their ability to use language flexibly. The Inquiry welcomes the vigorous initiatives to improve pupils' grammatical understanding within the government's literacy strategy. There is obvious scope here for making connections between English and other languages. (The Nuffield Languages Inquiry 2000: 45)

In other words, the Nuffield committee's view is that linguistics should provide pupils with conceptual underpinnings for a general 'theory of language'. This view was subsequently adopted in the official 'Framework for teaching modern foreign languages: Years 7, 8 and 9' (cf. fn. 5), which says (p. 13):

> In other words, the MFL Framework and its associated training programme are designed not merely to inform the teaching of languages but also to CREATE LANGUAGE LEARNERS. Pupils working to Framework

[18] An obvious objection is that learning (say) French is a very time-consuming way to prepare for learning (say) Arabic, given that very little of the detail of French will transfer to Arabic; and if a child learns French without also learning about language in general, school French probably won't help much with adult Arabic. This objection would favour teaching about language, as in Language Awareness (discussed below), without aiming at fluency in any language. On the other hand, one could argue that it is important emotionally for children to learn enough of a language to be able to use it, and that one of the skills needed in later life is to learn large amounts of vocabulary. The issues are clearly technical as well as political and need serious research.

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> objectives should develop an understanding of what it means to learn a foreign language and of the skills and conventions of language learning. They should thus be well placed to learn other languages later.

For a linguist, it is self-evident that all languages taught in a school are similar and should be included under a single coherent policy – in short, that there is really a single subject, called 'language', of which English, French and so on are particular manifestations. In this view, the insights learned initially in mother-tongue lessons are recycled in foreign-language lessons, which thereby reinforce the insights in much the same way that physics or geography use and strengthen the numeracy skills first developed in mathematics. This idea of a unified approach to language has been brewing for several decades under the title LANGUAGE AWARENESS, a UK movement among foreign-language teachers inspired by the linguist Eric Hawkins. Hawkins complained that

> teachers of these [different language] subjects never went into each other's classrooms to hear what their colleagues were saying about language. They had not even tried to agree a common vocabulary in which to talk about language. In the years that have elapsed, little has changed in this respect. (Hawkins 1999: 124)

The new framework for foreign languages discussed above addresses precisely this issue, and may well be credited at least in part to this movement (which now has an international dimension through a journal and an association).[19]

The term 'Language Awareness' deliberately implies explicit knowledge, tied to metalanguage – learners should be aware of how language works in general and also of the specific patterns that they are learning. This raises the same question as with first-language teaching: does explicit teaching improve performance? This has been a major preoccupation of applied linguistics over the last few decades, where the research evidence seems to have swung in favour of explicit teaching – what is sometimes called 'focus on forms' (Hawkins & Towell 1996; Norris & Ortega 2000). It is still a matter of debate why focussing on forms should help – for example, it may help the learner to benefit from experience (Renou 2001), and this may be especially true when a learner encounters a pattern for the first time (Ellis 2002). Whatever the explanation, the benefits of explicit attention to forms are clear, and they show how important it is for teaching to be underpinned by good linguistic descriptions.

Ranging more widely, there are yet more parts of education which need linguistics. Language is fundamental to EVERY SUBJECT, and not just to those

[19] The web site for the Association for Language Awareness is http://www.lexically.net/ala/. The journal is *Language Awareness*.

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subjects where it is the primary object of study. Every subject has its terminology and its presentation styles – a science report is linguistically different from a history essay – and pupils are expected to learn each of these registers. Arguably, explicit teaching is as helpful here as in mother-tongue teaching, and linguists should be able to describe the registers more efficiently than the non-linguist specialist teachers themselves can.

However, deeper issues arise as well. It is important for teachers to understand how the use of language helps children to learn; for example, how talking about new ideas from geography helps children to integrate them into their existing knowledge. One influential theory, called Language Across the Curriculum, considers 'students' language, especially their informal talk and writing, as the key learning resource in the classroom' (Corson 1994: 1932). Similarly, we can ask how the teacher's language use helps (or hinders) their learning; this question embraces all aspects of the teacher's language, from choice of vocabulary and grammar to discourse features such as the use of interrogatives (Stubbs 1986: chapter 3). These questions about the LANGUAGE OF THE CLASSROOM arise for every subject, and may require different answers for different subjects. Like most issues in education, they require cross-disciplinary research, but in this case the research team should definitely include a linguist (ibid.: chapter 13).

Finally, I should like to mention two recent additions to the UK curriculum: citizenship and thinking. CITIZENSHIP is a distinct element in the secondary curriculum[20] and covers three topics: Social and moral responsibility, Community involvement and Political literacy. It is easy to find links to linguistics in these themes. The following are some of the more obvious linguistic topics which could arise in citizenship classes: bias (e.g. sexism, racism) in language, linguistic markers of communities, bilingualism, language and ideology. These are all important and relevant topics and need the analysis and research evidence of linguistics.

THINKING SKILLS are not a separate subject but are part of what is called 'Learning across the curriculum',[21] a number of distinctive areas of cognitive and ethical development which are tracked across all the curriculum subjects. The particular skills that are recognised under 'thinking' are: Information processing, Reasoning, Enquiry, Creativity and Evaluation. Linguists have been arguing for some time that linguistics is particularly well suited as a vehicle for teaching thinking skills, and in particular scientific thinking (Honda & O'Neil 1993; Hudson 1999). One advantage of language as an area of inquiry is that vast amounts of data are easily available either by

[20] For citizenship see http://www.dfes.gov.uk/citizenship/, and for the broader context http://www.nc.uk.net/subject_key.html. Citizenship is mandatory in all secondary schools from 2002.

[21] For learning across the curriculum see http://www.nc.uk.net/learn.html, and for thinking skills http://www.nc.uk.net/LACcs_thinkskill.html.

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introspection or by observation, so children can easily formulate and test hypotheses about their language system. Another advantage is that language is such an important tool for thinking, so children can explore thought processes such as classification and reasoning via the language that they use for expressing the processes.

A number of small-scale projects have developed these ideas. For example, trial groups of mixed-ability seventh- and eleventh-graders were tested for their ability to reason scientifically both before and after a period spent exploring the grammar of their own language (English) by inducing rules from examples (Honda 1994). The results showed a significant improvement, which is all the more remarkable for the fact that their experience of linguistics lasted a mere two weeks. Even more encouragingly, the children enjoyed it and described it as fun.

All these suggestions about introducing linguistics into schools raise serious questions, of course, about TEACHER EDUCATION. In the UK at least, most teachers learned very little about language during their own education, either at school or at university, so it seems unrealistic to suggest that they should be teaching (and doing) linguistics in the classroom. How can they teach a subject that they don't know? The problem is obvious; whether we call this subject linguistics or language study, it is really a new subject in the curriculum and it is simply not possible for teachers to learn linguistics overnight.

Nevertheless, the fact is that teachers are learning on the job and becoming better informed every year. The government has produced a great deal of training material in topics such as grammar,[22] and the material generally includes quite concrete teaching suggestions, so teachers do not have the added problem of deciding how to apply their new knowledge. As a result, grammar is now taught regularly and systematically in all classes right through the primary school, including some of the very youngest age groups, and appears to be accepted and generally welcomed as a positive and helpful aid to literacy. (Rather illogically, primary schools started to teach grammar before secondary schools, but the latter are now starting to teach grammar as well.) The present cohort of teachers are having to learn from scratch, but the next generation will hopefully have learned enough at school to put them on the same footing as teachers in all the more established subjects, such as geography or mathematics.

My conclusion, therefore, is that education needs linguistics in several different curriculum subjects and even, arguably, in all curriculum subjects.

[22] The best example of training material is a 200-page book *Grammar for writing*, which includes two-page spreads on specific grammatical topics and how to teach them. It can be ordered via http://www.standards.dfee.gov.uk/literacy/publications/ (follow 'Sentence level'). There is a government-sponsored set of self-instruction materials, this time for English teachers at secondary school, at http://www.phon.ucl.ac.uk/home/dick/tta/KS3.htm.

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I don't believe that I am talking about some Utopia. I am not suggesting that linguistics should be added as a separate curriculum subject; that certainly would be unrealistic because the UK curriculum is already overfull and no doubt the same is true in other countries. Rather, what I am suggesting is that we can help to strengthen all the existing language subjects, and that one of the by-products of this strengthening will be a much more coherent approach to language throughout the school. I also believe that the teacher-training problem can be solved partly by in-service training and partly by waiting for the next generation of linguistically-informed teachers.

4. Why does linguistics need education?

It is important to recognise that linguistics also stands to gain from closer links to education. Historically, the scholarly study of language has often been tied to education (as I noted in the opening paragraph) – for example, grammar derives its name from its links with writing (in Greek, *gramma* meant 'letter of the alphabet') – and this still seems to be true in some countries. Of course the relation need not be a healthy one, and the problem with traditional grammar was precisely that it was traditional – it was transmitted via schools with very little critical attention or renewal at university level. This is hardly a danger for modern linguistics but, by achieving independence from the school tradition, we have lost some important benefits which the school link can bring.

The practical and institutional benefits for our discipline are obvious, and hardly need any discussion. If every school child studied language for eleven (or thirteen) years in a way that was informed by modern linguistics, then almost certainly more school-leavers would apply for linguistics courses at university. Moreover, school teaching would become a natural career for linguistics graduates who wished to stay 'in linguistics' as a career. It is easy to imagine a 'virtuous circle' in which schools fed good students to linguistics departments, which then fed many of them back into schools as enthusiastic and well-informed teachers. It is equally easy to imagine practical benefits at the research level as new research areas opened up and funds available for educational research were increasingly channelled towards linguistics.

However, these rather concrete benefits for our teaching are likely to be accompanied by two rather more abstract benefits for our research, with which I should like to end. First, linguistics needs education in the sense that we need a good theory of HOW EDUCATION AFFECTS LANGUAGE. This is important precisely because most of the languages that we study have been affected by formal education, so we should know whether these languages are typologically different from the rest. At present we have no proper theory about this, though the question has recently attracted some interest.

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For example, education seems to affect native speakers' judgements and interpretations. Most obviously, education presumably influences our linguistic competence directly by teaching us words and constructions that we would not otherwise know.[23] But more subtly it can influence our general orientation to language; for example, in a famous experiment, Ph.D. students and clerical workers were asked to interpret three-word sequences such as *bird house black*, and the experimenters reported a 'massive difference' between the two groups, which presumably reflected their experience of education (Gleitman & Gleitman 1979). The general conclusion that emerges from such studies (Schütze 1996) is that uneducated people find it easier to focus on meaning than on form, and that one effect of education is improved ability to focus on the detailed form of an utterance. If this is true, then we clearly need to be careful when interpreting grammaticality judgements, and especially so when studying non-standard dialects.

A theory of how education affects language would be helpful in another current area of controversy, where the uncertainty applies to the interpretation of data rather than to the data themselves. It has been suggested that some constructions are the result of a 'grammatical virus' which is spread via schools, and which stays separate from the 'natural' grammars that it contaminates (Emonds 1986; Sobin 1997, 1999; Lasnik & Sobin 2000). For example, in the pair in (1) the first example is said to be the 'natural' form from which the second is derived by a 'virus' rule taught at school:

(1) (a) Me and Mary left.
    (b) Mary and I left.

Chomsky takes the same view of the standard language in general, which he describes as:

> … not better, or more sensible. Much of it is a violation of natural law. In fact, a good deal of what's taught is taught because it's wrong. You don't have to teach people their native language because it grows in their minds, but if you want people to say, 'He and I were here' and not 'Him and me were here,' then you have to teach them because it's probably wrong. The nature of English probably is the other way, 'Him and me were here,' because the so-called nominative form is typically used only as the subject

[23] Two provocative sets of figures suggest that the impact of formal education on vocabulary may be colossal: 'American 1-year-olds learn about one new word per day, 2-year-olds learn about two new words per day, and 3-to-6-year-olds learn about three new words per day' (Tomasello & Bates 2001: 4). Therefore, a 5-year-old child entering school should know about 350 + 700 + 1,000 + 1,000 = 3,050 words. Notice that the rate of learning over the last pre-school years is constant, so by extrapolation we can predict a further 15,000 words by age twenty, giving a vocabulary of 18,000 words. However, university undergraduates probably know at least 50,000 words (Aitchison 1994: 7), more than twice the predicted number. It is at least possible that the extra 32,000 words can be credited to the effect of formal education and (of course) the reading that this makes possible.

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> of the tensed sentence; grammarians who misunderstood this fact then assumed that it ought to be, 'He and I were here,' but they're wrong. It should be 'Him and me were here' by that rule. (Olson et al. 1991: 32)

This claim rests on a number of questionable assumptions about the causal links between education and everyday language in general. Is the education process really that effective in terms of behaviour? Do its effects really remain compartmentalised like that throughout life? That is, is it really true that whenever I say *Mary and I*, I am really suppressing a 'natural' desire to say *me and Mary*? Why does education seem to have a completely different effect on my use of *Mary and I* (which I always prefer) compared with *It's I* (which I never do)? No doubt we all have views on these questions, but they should not be mere matters of opinion – they are important research questions where evidence can be mustered, and they should be embedded in a coherent theory of educated language. The debate raises fundamental questions about innateness and modularity, so it matters a great deal for our research.[24]

Finally, I should like to raise a rather fundamental question about PROGRESS IN LINGUISTICS. How can we guarantee that the achievements of one generation will survive the next generation? Consider the current situation in which (in countries like the UK) linguistics has tended to have very little influence on school-level education. In this situation, most linguistics undergraduates start the study of language more or less from scratch, so their only source of ideas and facts is us, their teachers, who also started from scratch at the same age – i.e. no more than forty years ago, and on average much more recently. As we all know, ideas and interests are driven at least to some extent by fashion, so we need some kind of control to prevent the subject from constantly changing its interest and assumptions without making any real progress, i.e. moving sideways rather than forwards.

Change without progress is not just a hypothetical possibility. For example, take the question of whether English has cases. According to the linguistics of the 1960s it did not, and any analysis that disagreed was ridiculed as merely imposing the grammar of Latin on a language of a very different type. In contrast, many modern analyses of English do recognise cases, but there is no more discussion of this claim than there used to be (before the 1960s) of latinate analyses. It would be all too easy to find other examples in which the findings of one generation are simply ignored by the next generation. No doubt the pendulum will eventually swing back, but we would all prefer progress to be cumulative rather than driven by fashion.

[24] A referee commented that the idea of grammatical viruses bolstered the case for teaching grammar if viruses really do mean that prestige forms can only be learned at school by explicit instruction. This is true, but in my opinion it would be a great mistake to let any part of the case for teaching grammar rest on such flimsy intellectual foundations.

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School-level education is highly relevant here because it is arguably the best guarantor of cumulative intellectual progress. Suppose we enjoyed the virtuous cycle that I outline above, in which there was a healthy flow of ideas from universities back into schools. In that situation, this year's research findings would feed into next year's undergraduate teaching and eventually into the school syllabus, so the next generation of school-leavers would take these findings for granted. This is surely the situation in most other subjects in the school curriculum: research which makes its way into the undergraduate curriculum may well reach schools, albeit after some delay. This 'feed-back loop' makes it relatively hard for those ideas which reach the schools to be forgotten, and it is precisely the delay between research symposium and school lesson that guarantees the time depth that is missing in linguistics. In short, the safest place to store a really important idea is in the mind of a child; but the bridge between our work and children's minds is still a-building.

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