Towards a pedagogical linguistics

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Pedagogical linguistics is a two-way bridge between linguistics and education, carrying information not only from linguistics to education, but also in the other direction, where linguistics needs to explore the impact of education on language. The paper reviews the history of this bridge, and especially in the 19th and 20th centuries, arguing that the bridge worked well in the 19th but that it disintegrated in the 20th with the rise of linguistics and education as distinct research fields. The challenge for the 21st century is to rebuild it in a sustainable way.

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1. What is pedagogical linguistics?

Why is 'pedagogical linguistics' such a good term, and such a powerful idea? One way to approach the question is to think of another academic subject, such as history, and imagine modifying it by the word *pedagogical*. What would 'pedagogical history' be? Or 'pedagogical chemistry'? No doubt there are concerns in both these subject areas about teaching – how to present the technicalities and facts to novices; and these concerns no doubt apply at all levels of education, from primary to undergraduate or even postgraduate. But in those subjects it's simply a matter of how to present the results of research, without any suggestion that the pedagogy might influence the object of research – for example that teaching about events in the past might affect these events.

Pedagogical linguistics is different precisely because pedagogy does impact on the object of research. Linguistics is the study of language, and the fact is that language is heavily influenced by education. In 2004 I argued

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, ... academic

linguistics is weakened if we ignore the impact of education on language, so information must cross this interface in both directions. (Hudson, 2004)

In 2019 I still believe this to be true, so this is the main conclusion which the present paper seeks to establish.

My background and expertise lie in linguistics, so I am at least as concerned to persuade my colleagues that they should pay attention to education and its effects, as I am to persuade teachers and others in education to pay attention to what we linguists say about education. My main point is that education affects language so if we want to understand language, the impact of education is a critical element in our explanations even if we're not particularly interested in education as such. It makes no difference to the argument whether the influence of education comes from initial literacy teaching, or from secondary first-language (i.e. English) teaching, or from the teaching of a modern or classical language – or indeed from the teaching of language in the science or maths lesson. A pupil's language is influenced by all these subjects, so for a linguistician (a term I prefer to the ambiguous *linguist*) they are all just part of education, in spite of the differences that are so important for teachers and which, I shall argue, threaten language teaching by fragmenting it.

One of the myths promoted by some linguisticians is the romantic idea of a 'natural language', in contrast with language that has been contaminated by interference from prescriptivists and education. For instance, Noam Chomsky is on record as claiming that Standard English is not a natural language:

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 of the tense 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. So they teach it because it's not natural. (Olson et al., 1991)

He accepts that children should learn Standard English but sees it as a 'cultural system' rather than a language; but for him, it's not a proper language because it's 'wrong'. I describe this as a myth because it seems to fly in the face of facts: some people learned the forms of Standard English in early childhood and have used them all their lives, without intervention from schools. I myself am one, and I suspect Noam Chomsky is another.

Like many other myths, this one has had a major impact on people's perceptions, beliefs and behaviour. For present purposes the most important outcome is the belief that linguistics should pursue natural languages, free from the unnatural effects of education. The trouble with this view is that, almost by definition, linguisticians are highly literate, with decades of education behind them; so how can they tell where their own 'natural' language ends and the traces of education begin?

Pedagogical linguistics offers a way round this difficulty. It accepts that a literate speaker has a language competence which is just as much an example of human language as that of an illiterate speaker. Education is one of the important influences on this competence, along with all sorts of other social influences ranging from parents through peers to social media, from various in-groups to a collection of out-groups, from written models to spoken, from literature and song to idle chitchat. But unlike these other influences, education is where society makes deliberate choices about the experiences it wants children to have. How should the next generation write and speak? What skills do they need for interacting as mature citizens? What should they know about language? What languages should they know? Society generally delegates these choices to responsible bodies such as politicians, local school boards or religious bodies, but ultimately they are sanctioned by the whole society. And for our purposes the main point is that they feed back into the language that linguisticians study.

What, then, is pedagogical linguistics? One reasonable view is that it is a branch of linguistics concerned with the interaction between language and schooling: how education affects language, and how language affects education. In this view, pedagogical linguistics sits alongside sociolinguistics, psycholinguistics, historical linguistics and so on. However, there is a danger of compartmentalisation in this view of the discipline of linguistics: some linguisticians pay attention to education, but others don't; this choice is an example of the specialisation that's so important in academic research. The same argument supports all the other specialisations: some linguisticians pay attention to X (where X is society or psychology or history or meaning or intonation or), while others can legitimately ignore X. This view encourages the romantic idea criticised above that there is some kind of 'natural' core of language which can be isolated by ignoring all these other things. A relevant joke is the one about the footballers who had lost their ball and decided, after searching for it, to forget it and get on with the game. What is most remarkable about language is its complexity, so any particular part of the complex whole is, as a matter of fact, intimately connected with all the other parts. Any part of the system is constantly in flux through changes in the fine detail; vocabulary is inseparable from grammar; different forms are used by different speakers and in different social situations; and so on. Even those specialising in core areas such as syntax meet this complexity through disputed and uncertain data, and it makes no more sense to ignore such things in order to focus on syntax than it does to ignore the absence of a ball so as to play football.

Another view of pedagogical linguistics is that it is simply linguistics as it ought to be conducted by every practitioner, a realistic version of linguistics which accepts the world as it actually is. We all reject prescriptivism, but it is surely just as prescriptive to reject 'educated' language as it was to reject everything else. On the other hand, it is also part of the descriptive manifesto to recognise variation, and if there is a difference between educated and uneducated language, we should acknowledge it as such.

Where does this leave the practising linguistician? I am not arguing that everybody should specialise in pedagogical linguistics – far from it. All I am proposing is that everyone should recognise the possible influences of education on language in just the same way that they already recognise the influence of diachronic change, dialect differences, memory limitations and all the other complicating factors. In other words, the conceptual framework for linguistics should be 'pedagogical' just as it ought also to be social and psychological and historical. Specialisation is still possible in this view, but it is open and outward-looking rather than closed – open to possible external effects rather than protected against such effects by the pretence that they do not exist, or by the claim that they aren't 'natural'. For most linguisticians, therefore, pedagogy is not their central concern, but it is recognised as something which may be relevant.

Within this broad view of linguistics, where pedagogy is constantly recognised as a possible influence, pedagogical linguistics is still available to specialists who choose to put pedagogy into the centre of their research. As with other branches of linguistics, the intellectual framework for pedagogical linguistics recognises influences in both directions: from pedagogy to language but also from language to pedagogy. How does pedagogy affect language? For instance, does it influence the size and nature of vocabulary and grammar? What is the role of pedagogy in the transmission of standard languages? And what is its role in developing language awareness, the ability to think and talk about language? And how does language affect pedagogy? Should every teacher take responsibility for developing children's language (under the slogan of 'language across the curriculum' – (Bullock 1975))? If so, how? How should pedagogy accommodate children whose language is limited, whether by age, by disability, or by migration? How should teachers of the mother tongue help children to develop their language? And what about teachers of foreign languages?

The remaining sections attempt to flesh out the suggestions above, looking at the past, present and future of linguistics.

A brief history of linguistics and pedagogy

One of the most striking features of linguistics, when viewed historically, is the dominant role played by pedagogy in general, and by literacy teaching in particular. From the earliest origins in Babylonia of the Western study of language, education was one of the principle forces driving it. Other forces were also at play, not least human curiosity; and it's important to remember that Panini (7th to 4th century BC), the founder of Indian linguistics and (arguably) the first true linguistician, does not seem to have been interested in education as such (though his texts became the staple of Sanskrit education for two thousand years). Blueskies, curiosity-driven research has an important place in the history of linguistics, but (as with Panini), this year's pure research occasionally turns into next year's school syllabus.

Perhaps the main motivation for studying language was the creation and dissemination of a writing system, which intimately connects linguistics to education. Linguistics is essential to the writing system because this requires some kind of analysis of the language, whether in terms of semantics, lexemes, phonemes or morphology. Indeed, any writing system is itself a framework for the linguistic analysis of texts, albeit a primitive system by modern standards. For example, every time I insert a word space I am recognising the boundary of a word, a fundamental unit of linguistic analysis; and by spelling homophones (such as *bare* and *bear*) differently I am recognising them as distinct lexemes. Even logographic systems require linguistic analysis even if the linguistic units are meanings rather than forms.

The role of linguistics in writing is obvious; but so is that of education, since any writing system has to be not only learned but also taught. It makes no difference whether the learners are a very small group of professional scribes or the entire population: in the early stages they need direct training in the principles and details of the system. If a community values writing, then it has to take steps to provide a supply of expert writers, and these steps are an important part of education. In short, while linguisticians (in all but name) invented and developed the writing system, teachers perpetuated it.

But once the writing system exists, it inevitably leads to further developments. For one thing, writing a word down freezes it and makes it much more easily accessible for study than a transient spoken word which a speaker may take for granted. Since words are tightly interconnected in the language's system, as soon as we pay attention to a word, we start seeing these connections and wondering about them: Why does *speak* look and sound so much like *speech*? What's the difference between these two words? How do their meanings connect? And so on. As we all know, our word *grammar* derives etymologically from the Greek word *grammatiké* which meant simply 'to do with writing', and reflects the expansion of linguistic analysis triggered by the written form (Robins, 1967:13).

Another important stimulus for linguistics was also based on writing. Writing leaves permanent records which outlive the effects of linguistic change, so written records can become increasingly hard to understand; and this is especially true when the records are in a language which is going out of use. This happened in Babylonia four thousand years ago, when Sumerian gave way to Akkadian, so that Akkadian-speaking scribes had to learn not only how to use the cuneiform script, but also how to translate Sumerian into Akkadian. This led to the first recorded lists (on clay tablets) of equivalent verb forms (Gragg, 2006) – the earliest recorded exercise in grammatical analysis. This too was driven by an educational need, but in this case it was the need for second-language teaching. The same pattern repeated itself but on a larger scale for various groups needing to learn Greek and then Latin, followed even later by Hebrew and Arabic.

More recently, the expansion of Europe since the sixteenth century produced a vast proliferation in linguistic activity as Europeans met more or less exotic languages which needed to be analysed (as best they could given the theoretical resources available), and once again one of the main incentives for this work was pedagogical, as administrators and missionaries needed to learn the local language and (sometimes) to set up schools for teaching literacy. In each case the need for teaching material stimulated linguistic analysis of the language concerned, and especially grammars, dictionaries and writing systems.

It's true that the analytical activity was much more intermittent than its pedagogical applications. There is a remarkable tendency for analyses to turn into dogma, where the details of the analysis, such as its terminology, are mistaken for facts about the language. For example, it is hard even for a linguistician not to think of Latin in terms of four conjugations for verbs and five declensions for nouns, but 'first conjugation' is simply the relatively arbitrary name which was eventually invented by Latin grammarians between Varro (116-27 BC) and Priscian (about 500 AD) (Taylor, 1991); so this analysis is still with us 1500 years later. Similarly, Priscian's grammar of Latin was used for teaching Latin for a thousand years. Almost equally remarkable, in 1542 King Henry VIII commissioned an introductory Latin grammar in English (which came to be called 'Lily's Grammar') and forbade all others, so this grammar had a monopoly in English schools for 350 years (and was therefore used in primary school by William Shakespeare and Isaac Newton, among many others) until it was replaced in the late 19th century by Kennedy's Latin Primer (which is still in use today) (Gwosdek, 2013). Meanwhile, Arabic grammars used in schools are still dominated by the grammar of Sibawayh, written in the eighth century; and as mentioned earlier, Sanskrit is still taught with the help of Panini's grammar, written about 2,500 years ago (Daniélou, 1993). Clearly pedagogy appreciates some of the output of linguistics, but has a built-in tendency to prefer continuity to change.

The point of these extreme examples is that each example started with a healthy interaction between linguistics and pedagogy, in which linguistic analysis provided the basis for a work that was used in teaching. It is all too easy nowadays to take these pedagogical tools for granted, or even to criticise them for being too dogmatic, but in their inception they were often brilliant innovations; and in most cases it was the pedagogy that motivated the analyses.

School grammar provides two other examples of this recurrent pattern: parsing and analysis. These two activities were still fundamental to the training in grammar that I received as a school-boy in a state-funded grammar school in England in the 1950s, but what I experienced had an extraordinarily long history.

Parsing (in its original sense) is a bottom-up study of individual words in a sentence; so the teacher would select a word and tell a pupil to parse it. This meant answering a standard list of questions about it, starting with its word class (known as its 'part of speech', in Latin its *pars orationis* – hence the term *parsing*). If it was a verb, the pupil supplied its mood, tense and agreement features, and if it was a noun the questions related instead to its number, gender and case; syntax just crept in via the explanation for the case (e.g. "It is nominative because it is the subject of the verb"). This is a really good test of whether the pupil understood the grammar of a novel sentence, and could not possibly be answered by rote memory. Remarkably, parsing seems to have been invented in the ninth century, but is already anticipated by Priscian in the sixth century (Luhtala, 1994); so this bit of pedagogy from the 1950s was already about a thousand years old. And of course the main point for present purposes was that parsing was only possible because of the rigorous analysis of previous linguisticians.

Analysis, in contrast, was invented in the 19th century, so it must wait till the next section. The main point to emerge from this brief review of the first few thousand years of linguistics is the prominent role played by pedagogy. On the one hand it occasionally stimulated progress in linguistics as researchers looked for better ways to sort and present the data of the language – a search which was strongly supported, of course, by curiosity and the desire to understand. And on the other hand, education was the vehicle for transmitting the resulting analyses to succeeding generations of school children. The reason for this close relation between linguistics and pedagogy was, of course, the importance of literacy. As long as society needed literate people, these people needed a special training, and the content of this training ultimately rested on linguistic expertise. Admittedly there were long periods where teachers passed on exactly what they themselves had been taught, but from time to time the content was renewed by fresh contact with linguistics.

3. The 19th century: Innovation and integration

The 19th century deserves a separate section because it seems, in retrospect, to have seen a particularly healthy relationship between linguistics and pedagogy. No doubt there were serious flaws which we would not want to repeat in the 21st century, but we have a great deal to learn from this period. It's popular to describe it as a time of pedagogically irrelevant historical linguistics dominated by very specialised philology, of poor teaching methods dominated by corporal punishment, large classes and rote learning of facts, and of very traditional grammar and literacy teaching. However, this view misses the two fundamental features of the 19th century: innovation and integration. Like many other areas of culture, education was bubbling with new ideas; and linguistics was closely integrated with pedagogy.

The linguistic innovations included

- analysis, the complement of parsing
- a unified system of syntactic analysis
- the use of diagrams in syntactic analysis
- the grammar-translation method and the direct method in language teaching
- phonetics.

The country that contributed most ideas was Germany (and especially Prussia), though other European countries also made contributions. So Germany was the driver of linguistics in the 19th century as the USA was in the 20th century.

3.1 Sentence analysis

Starting with analysis, this was an invention of the early 19th century, widely attributed to a German, Karl Ferdinand Becker (1775–1849) (see Becker 1829). His many interests included education and philology – a common combination, as we shall see. He may have been the first to use the term *Analyse* ('analysis') in relation to German grammar (though according to Google n-grams French grammarians had already been using the French equivalent (*analyse de phrase*) for some decades).

What Becker offered was a top-down approach, taking the sentence as a whole and breaking it into smaller parts. This analysis did for syntax what parsing did for morphology, and between them they managed to cover the whole of grammar. His approach clearly resonated with the mood of the time, because his "analysis of syntactic relations rapidly gained influence outside Germany, thanks largely to an enthusiastic reception from language teachers" (Linn, 2006: 76). This success may have been due in part to the fact that one of his books – a grammar of German for English learners – was written in English. Whatever the reason, there is no

doubt of his influence; for example, two grammars of English by English speakers explicitly mention him as a model (Arnold, 1848; Morell, 1855).

3.2 Towards a unified syntax

All this work took place against the backdrop of a major theoretical issue which confronted both linguisticians and pedagogues: how to reconcile analyses based on dependency (aka subordination) with the logical subject-predicate analyses inherited from Aristotle. For example, in (1) the relations between *small* and *babies* and between *babies* and *cry* were treated quite differently: subordination for *small*, but the equal relation of subject to predicate for *babies* and *cry*. (At this time nobody considered the possibility that *small babies* might be the subject.)

(1) Small babies cry.

Moreover, whereas (2) contained an adjective as its predicate, with a supporting copula verb, (3) contained an object which was subordinate to its governing verb.

- (2) Small babies are sweet.
- (3) Small babies drink milk.

This hybrid approach to syntax, combining equal and unequal relations, must have struck many school teachers as unnecessarily complicated and unsatisfying, but it was hard to argue with Aristotle (the originator of the subject-predicate analysis).

By this time, dependency analysis was quite sophisticated, with intellectual high points in the Arabic grammars of the 9th to 11th centuries (Owens, 1988), the Speculative grammars of the European Middle Ages (Law, 2003), and the Encyclopédiste grammars of 18th century France (Kahane, forthcoming), so it was clear that some word combinations were asymmetrical, with a subordinate and (what we would call) a head. But the subject-predicate relation was different, because (so Aristotle claimed) both parts were essential; so syntax, both theoretical and practical, had a problem: how to find a unified analysis for the entire sentence.

The late 19th century produced a solution. Interestingly, and surprisingly, three different people, each in a different country, seem to have arrived at the same solution independently and at about the same time: Samuel Brassai (1873 in Hungary; (Imrényi & Vladár, forthcoming)); Aleksej Dmitrievskij (1877 in Russia; (Seriot, 2004)); and Franz Kern (1884 in Germany; (Kern, 1884)). The most striking feature of all these suggestions is the close link between grammatical

theory (even then a major branch of linguistics) and pedagogy, since all three were school teachers and saw their innovations as a contribution to pedagogy.

What, though, was their solution? It was quite simply a major intellectual revolution in linguistics: the rejection of Aristotle and his logic. The new proposal was that the verb's subject was just one dependent among others. In contrast with the logical subject-predicate pairing of equals, they suggested that the sentence had just one main part: the verb (or, in Russian, the predicate which might be a noun or adjective without a verb). With this innovation, grammatical theory moved a step nearer to a unified analysis based on dependency. To us in the 21st century the solution is obvious and almost beyond debate, but in the 19th it was anything but obvious; indeed, the most popular alternative to the mixed theory was the theory that the main sentence element was the subject - to us an absurd analysis, but one which attracted significant support, not least from Otto Jespersen. The verb-headed solution was a major breakthrough for grammatical analysis, and made grammar appreciably simpler and easier to teach in schools; there is of course room for debate about whether grammar should be taught at all, but it is surely beyond dispute that if it is to be taught, then the content should be as simple and coherent as possible. Unfortunately, it was not the end of the debate because these analyses still didn't accommodate what we now call 'function words' - little words such as prepositions, auxiliary verbs and determiners. These had to wait another century, but one of the things on which many syntacticians now agree is that these little words tend to function as heads. But this step would have been impossible without the breakthrough of the three pedagogues in the 19th century.

3.3 Syntactic tables and diagrams

Another major innovation both in linguistics and in pedagogy was the use of layout devices for visualising syntactic structure – a move which is really obvious to us in the 21st century, but which was, again, revolutionary in the 19th. (Apparently, mathematics developed its first visualisation systems at about the same time – (Kahane, forthcoming).) Two systems were introduced: tables and diagrams. Both were invented by Germans, and both at about the same time; and both had major uptake internationally.

Tables, like the idea of sentence analysis, were invented by Becker. His idea was that a good way to present the functional parts of a sentence would be to use columns to distinguish them. One of his tables is the one in Table 1 (Becker, 1829: 381). This table actually follows the word order of German rather than the traditional subject-predicate distinction, with the finite verb in the second position, and the rest of the sentence taking position round it. (The ditto marks show the default position of the item in the first column.) However, the labels are still

those of Aristotle's analysis, with the subject and predicate linked by a 'copula' (a term which is stretched here to breaking point).

Table 1.	Becker's	table for	German	sentence	structure
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	Copula	Subject	Predicate
Ernst (serious)	ist (is)	das Leben (life)	«
Sterben (die)	müssen (must)	Alle (all)	ш
Die sprache (the language)	Redet (speaks)	Englands Feind (England's enemy)	ш
	Willst (want)	Du (you)	Ernst machen? (be serious)

The most important feature of this table is the very fact that it is a table, a visual device for showing structural similarities. This idea resonated with contemporary grammarians, and by the end of the century British school children were learning to emulate Table 2 in their sentence analysis (Nesfield, 1898: 5). Indeed, this is what I learned in the 1950s. Here the old Aristotelian analysis is very clear.

Table 2. Nesfield's table for English sentence structure

I. Subject		II. Predicate				
Nominative or	Enlargement of	Finite verb	Completion of finite verb		Extension of	
equivalent	nominative		Object	Complement	finite verb	
master	(1) The (2) new	put	the class	into good order	soon.	
bird	(1) A (2) in the hand	is		worth two in the bush.		
communications	Evil	corrupt	good manners			
Не		asked	(1) me (2) a rude question			

I have no evidence for the popularity of syntactic tables in Germany or elsewhere in Europe, but although they were popular in the UK they don't seem to have had any uptake at all in the USA; nor, as far as I know, were they ever used in academic grammar (apart from the completely different tables of Optimality Theory). Tables, therefore, were invented by a pedagogue and adopted by other pedagogues, but didn't impact on linguistics.

Meanwhile, and simultaneously, we see the development of the modern 'tree' – a network of lines where each line represents a grammatical relationship. The first ever 'diagrammarian' (a nice term due to Richard Brittain (Brittain,

1973)) seems to have been another German, Hans Billroth, working at about the same time as Becker. In 1832 he published a school book about Latin grammar (Billroth, 1832) containing a discussion of the Latin sentence in (4). (In the glosses, the abbreviations stand for Nominative, Genitive, Accusative, Dative and Ablative.)

(4) Miltiades dux Atheniensium reddidit libertatem paene oppressam Miltiades.N leader.N Athenians.G returned freedom.AC almost oppressed.AC toti Graeciae in pugna apud Marathonem. all.D Greece.D in battle.AB at Marathon.AC 'Miltiades the leader of the Athenians returned liberty that had been almost oppressed to all Greece in a battle at Marathon'

As an aid to understanding this rather complicated sentence he offered the diagram in Figure 1, which illustrates very clearly the hybrid analyses with a horizontal line connecting the subject (*Miltiades*) and predicate (*reddidit*), in contrast with the vertical or sloping lines linking the various dependents to their heads.

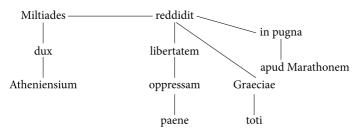


Figure 1. The first sentence diagram

In 1847 the USA saw a different system which may have been developed independently of Billroth's, but which once again was invented by a pedagogue: Stephen Watkins Clark (Clark, 1847). In this system, links were shown by overlapping bubbles containing the related words, but the underlying analysis was the same mixture of Aristotelian logic and dependency grammar. By 1877 Clark's system was converted into a more convenient format which looked remarkably like Billroth's, but was apparently independent of it (Mazziotta, 2016): the famous Reed-Kellogg diagrams (invented and patented by two Americans in 1877). Alonzo Reed and Brainerd Kellogg were pedagogues, and their method was a wild success in schools in the USA where it came to be known simply as 'sentence diagramming', or even 'diagramming'. In spite of the strong reaction against grammar, including diagramming, in the late 20th century, individual colleagues report that it is still used in some schools, and a detailed guide to diagramming was published as recently as 2008 (Hefty et al., 2008). Figure 2 is the diagram given in the 1890 edition of the book for the sentence in (5) (Reed & Kellogg, 1877: 37).

(5) The pitch of the musical note depends upon the rapidity of vibration.

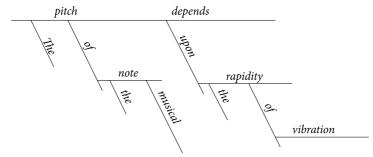


Figure 2. A Reed-Kellogg diagram

A noteworthy feature of this diagram is the continuing unquestioned acceptance of the subject-predicate distinction as the basis for the analysis, with other words treated as dependents. In other respects it anticipates modern analyses, including the treatment of prepositions as linking words.

Meanwhile, however, European diagrams were developing in a different direction by building on the new unified view of sentence structure. Unlike the other systems such as Reed-Kellogg diagrams, the diagram published in 1873 by the Hungarian Brassai had a single point showing the head of the entire sentence, the verb, with the vertical dimension consistently showing dependency relations. Figure 3, from (Imrényi & Vladár, forthcoming), is probably the first ever sentence diagram which treats subjects as dependents. In this respect it is unified, although it still fails to extend this treatment to the ablative absolute *imbre cadente* ('with the shower falling'). As with Billroth's example forty years earlier, sentence (6) is in Latin, and is sufficiently complex to benefit pedagogically from a visual display.

(6) Uxor amans flentem flens acrius ipsa tenebat, wife.N loving.N crying.AC crying.N more.bitterly herself.N was.hugging, imbre per indignas usque cadente genas. shower.AB on unbecoming.AC continuously falling.AB cheek.AC 'The wife, herself even more bitterly crying, was hugging the crying one, while a shower [of tears] was falling on her unbecoming cheeks [i.e. cheeks to which tears are unbecoming]'.

In this diagram, the abbreviated Hungarian words in brackets are grammatical category labels; for instance, *uralk. ige.* means 'governing verb'. Since it is embedded in an article written in Hungarian it may not be surprising that the rest of the world did not notice, but eleven years later Franz Kern offered a very similar diagram for a German sentence in a German textbook which was published in at least four editions, suggesting widespread use in Germany; and given the dominant position of Germany in language study, this meant that the idea was part of international scholarship.

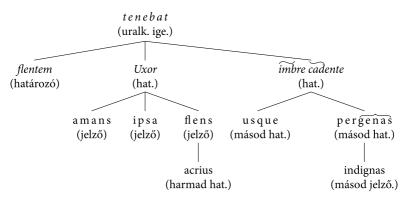


Figure 3. The first dependency diagram, by Brassai (1873)

Once again, the main point for present purposes is that these important innovations in syntactic study were driven by pedagogical imperatives – in this case, the need for a convenient visual representation of complex syntactic structures.

3.4 Language teaching methods

Another relevant area of innovation lies within pedagogy itself: how best to teach a foreign language. The 19th century produced both the main approaches which are still pivotal in language teaching in the 21st century: the Grammar-translation method and the Direct method; and as with so many other innovations, their roots lay in Germany.

The background to these innovations was a school system in transition. Until the 17th century, the main goal was to teach fluency in Latin, which was achieved partly by explicit instruction in grammar, but partly too by immersion in a Latin-speaking world; for example, Shakespeare would have been introduced to Latin in primary school by an elementary grammar written in English, but would then have moved on to a more advanced one written entirely in Latin (Gwosdek, 2013); and in 1687 Isaac Newton used Latin rather than English in his *Philosophiæ Naturalis Principia Mathematica* ("Mathematical Principles of Natural Philosophy"). For at least some, the immersion was total:

English was a penal offence; the Grammar School statutes of the 16th and 17th centuries provided as a rule not only that the master should speak Latin to the scholars, but that the scholars should speak Latin to each other both within the school and without.

(Board of Education, 1921: 37)

When in the 18th century modern foreign languages appeared in schools, immersion was not possible so teachers needed a different method, and according to one source at least some children were required to learn words, phrases and whole sentences by heart "pretty much after the same manner as parrots are instructed"

(Chambaud, 1750: xviii; Mclelland, 2017: 95). Moreover, teachers tried to imitate immersion by using nothing but the target language, in spite of the children's inability to understand it. This situation (all too familiar in the 21st century) clearly requires a better method.

The first answer was to teach them in the same way as Latin, by explicit instruction in grammar combined with translation practice; but whereas Latin grammars were basically reference grammars, the new grammar books were geared to teaching. Whereas a reference grammar brings together everything to do with (say) nouns into a single chapter, a teaching grammar breaks this information down into much smaller chunks, with each chapter dedicated to a single point of grammar and provided with exercises relevant to this point. This is what we now call the Grammar-translation method, but it should be seen as a reaction against parrot-like learning without grammatical understanding. Some authorities date it from the middle of the 19th century (Johnson & Johnson, 1998: 153), but others put its origin a century earlier, with a teaching grammar of French written in 1750 by a Frenchman living and teaching in London, Louis Chambaud. The main impetus to the spread of this method, however, is generally attributed to a German who wrote a French grammar for German learners in 1783, Johann Valentin Meidinger, and this in turn is linked to the establishment of modern foreign languages in German state schools (Mclelland, 2017: 95).

The second answer was a reaction against the first, and could be seen as a swing of the pendulum of fashion back to the earlier method with its emphasis on using the target language in class. It was triggered by a pamphlet published in 1882 by another German language teacher, Wilhelm Viëtor, who pointed out how unsuccessful the Grammar-translation method was, and recommended instead much more focus on spoken language and on the use of the target language in the classroom. This approach, which came to be called the Reform Movement or the Direct Method, was supported not only by a lot of language teachers but also by academic linguisticians such as Henry Sweet (Mclelland, 2017: 105–107) and led eventually to the communicative language teaching of the next century.

These fluctuating fashions are not merely matters of pedagogy, because they raise serious issues for linguistics about how people learn languages: about the relations between explicit and implicit knowledge, about the role of feedback, social embedding and experience in learning a language, about the balance in language between the specific (vocabulary) and the general (grammar). The interplay and interdependence of pedagogy and linguistics are obvious.

3.5 Organisations

Another important innovation of the 19th century was the creation of a number of organisations for those interested in language. In the UK, the most important example was the Philological Society, founded in London in 1842. It is true that pedagogy had no formal place either in its constitution or in its proceedings, but its membership included school teachers (who often doubled as historical linguisticians) and its discussions ranged over issues that would arise in teaching, with arguments from evidence rather than from dogma. Another was the International Phonetic Association, which was founded in 1886 by the French linguistician Paul Passy (on the suggestion of Otto Jespersen), and included Henry Sweet and Daniel Jones among its members. Most of its members were French and British language teachers who had been inspired by the Reform Movement to teach students not only to write the target language but also to speak it. Then there were two Modern Language Associations, one American, founded in 1883 and still going strong (with 25,000 members in 100 countries),1 and the other British, founded a few years later in 1892 and wound up when it was incorporated in 1990 into the Association for Language Learning (Anderson, 1912; Atkins & Hutton, 1920; Page, 1996). The term modern language is important because in the 19th century it was a rallying cry for the alternatives to the classical languages, so it included English as well as modern foreign languages. The most striking thing about all these organisations, from the perspective of the 21st century, is their unifying effect on the study of language as they brought together, on the one hand, students of English and foreign languages, and, on the other hand, academics and school teachers.

In conclusion, the 19th century showed a healthy respect for innovation combined with a healthy integration of the various groups involved in language education. In particular, it brought together research and school teaching (often in a single person) and it also sought connections between English and modern foreign languages.

4. The 20th century: Disintegration

The healthy legacy of the 19th century provided a strong foundation for the advances of the next century; and no doubt some countries built on this foundation in a way that will be revealed in future articles of this journal; my impression, sitting in London, is that the story has a relatively happy ending in all the nordic

^{1. &}lt;a href="https://en.wikipedia.org/wiki/Modern_Language_Association">https://en.wikipedia.org/wiki/Modern_Language_Association

countries – at least Norway, Sweden, Denmark, Finland, Estonia. Unfortunately, I can only speak for the anglophone countries, and in particular for Britain, where, for a pedagogical linguist, the story is disappointing.

The 20th century history of linguistics in these countries is dominated by a number of major trends, not least the geographical move of the centre of gravity from Germany and Europe to the USA. Most of these trends are the unintended negative consequences of otherwise positive developments, so the story is complex. The trends involve the following:

- People
- Institutions
- Values
- Research

4.1 People

Starting with the leading figures, the two most prominent examples are probably Leonard Bloomfield and Noam Chomsky. Bloomfield started his career with a visit to Germany, where he might have come across the syntactic ideas of Franz Kern, but instead fell for those of the psychologist Wilhelm Wundt. Both sources offered a solution to the problem of reconciling dependency analysis with Aristotle's subject-predicate analysis, but whereas Kern generalised the dependency analysis (to treat the subject as one dependent among many), Wundt generalised the subject-predicate analysis. For him, the proposition, consisting of a subject and a predicate, was the essential building block for all thought, and therefore for all syntax including all dependencies (Percival, 1976). The result was Bloomfield's Immediate Constituent Analysis, the precursor of Chomsky's Phrase Structure.

Furthermore, Bloomfield was educated in the USA where many schools were teaching the Reed-Kellogg diagramming system, so it is reasonable to assume that he too learned to diagram sentences in this way; and the same is true of Noam Chomsky. And yet neither of them seems to have made any link from their theories of syntax back to this method for displaying syntactic structure, and indeed Bloomfield hardly included any structure diagrams at all in his 1933 book. Modern tree structures didn't appear until the 1950s (Gleason, 1965: Chapter 7), when such systems were published almost simultaneously for phrase structure (Chomsky, 1957) and for dependency structure (Tesnière, 1959) – 80 years after those by Brassai and Kern. It is worth noting, however, that Tesnière's aim was pedagogic – improving the teaching of grammar in school – whereas Chomsky's trees were just a matter of research and theory.

4.2 Institutions

The most obvious change in the anglophone world between the 19th and 20th centuries was the recognition of linguistics as a separate university discipline with its own institutional presence – typically a department of linguistics (or 'general linguistics') – and its own name, *linguistics*; no doubt linguistics shared this development with many other subjects. This change is easy to track via Google ngrams, which shows a sharp surge in the use of *linguistics* starting in the 1940s (combined with a gradual decline in *philology* since its peak around 1900). As we saw in the discussion of the 19th century, there had been linguistics, synchronic as well as diachronic, but it was dispersed and disorganised; so research articles often came from clergymen and school teachers as well as from professors or lecturers. Moreover, university structures were themselves less clear than nowadays, organised round individual chairs rather than in departments. It was in the 20th century that we start to see linguistics departments.

University structures are critical because they influence not only how scholars relate to one another, but also how research relates to teaching. A linguistics department provides not only academic respectability, but also a home for scholars with shared interests and expertise who (by and large) benefit from being together. Equally importantly, it provides a home for students who want to study linguistics, and who therefore benefit from being in contact with these scholars. This is clearly a better arrangement than the alternative, in which both academics and students are dispersed across fields as diverse as anthropology, German and philosophy. Strong internal links among researchers and students bring very obvious benefits.

However, these internal links come at a cost: weak external links. The more linguisticians congregate in the linguistics department, the fewer are left in other departments. This is a particularly serious problem for pedagogical linguistics given its interest in teaching across the curriculum. How can a future teacher of (say) French learn the linguistics needed by a French teacher if all the linguisticians are in the linguistics department? Moreover, even if the French degree does include courses provided by staff from linguistics, this gives undergraduates the clear message that linguistics is not a proper part of the main subject (in this case, French).

This separation of linguistics from the so-called language departments (English and foreign languages) has reinforced a tendency in these departments to ignore the study of language, both in research and in teaching. A 2011 survey of English departments in the top 20 universities of the UK found that only 20% of their research staff had any research interest in the language, while the figure

for the French departments in the same universities was only 10%.² This antipathy to language work naturally feeds back into schools, so "freshmen come up ... after two or three years in a literature-orientated sixth-form – rather thoroughly predisposed to disfavour language study of any kind" (Quirk, 1964: 8).

These institutional changes have put linguistics in a strong position as a vibrant and important academic discipline; but at the same time they have had the unintended consequence of reducing the subject's impact on pedagogy. Meanwhile, of course, pedagogical linguistics has also been recognised as a distinct branch of linguistics, albeit under the name of educational linguistics, first proposed in detail by Spolsky in 1978 (Spolsky, 1978). However even this welcome event had its complexities because of the ambiguous relation between educational linguistics and its parent subject of applied linguistic: is educational linguistics the very heart of applied linguistics, or just one sub-field among many? (Hult, 2008) Moreover, is applied linguistics a sub-field of linguistics, or a separate discipline? These uncertainties have not helped pedagogical/educational linguistics to establish its rightful place as a central pillar of linguistics. The legacy of the 20th century would have puzzled the linguists of the preceding century, many of whom saw their work as a contribution to pedagogy, so in a sense they were doing pedagogical linguistics at the same time as working on historical or theoretical problems.

4.3 Values

One of the components of any discipline is the set of values that it promotes, and in linguistics a very clear example is our commitment to descriptivism, contrasting with prescriptivism. Modern linguistics rightly rejects prescriptivism; so when alternative forms exist, we describe both (while noting any social differences) rather than prescribing one and proscribing the other. But prescriptivism has strong roots in pedagogy, where one of the goals is to teach the standard language, and (not surprisingly) some of those who are confident in the standard enjoy decrying the alternatives as 'wrong'. Linguisticians in turn enjoy decrying this view as both misguided and morally indefensible. So while prescriptivists criticise *I didn't do nothing* as illogical, descriptive linguisticians accept it as the normal form for most English speakers, and criticise the critics for their bad logic. This is an easy battle for linguisticians, though the issues are actually quite complex.

One complexity is the argument that if non-standard forms are just as good as standard, there's no need to teach the latter: the mother tongue will develop under

^{2. &}lt;a href="https://dickhudson.com/language-research-in-uk-he/">he/>

its own steam, so there's no need to teach it. A logical extension of this attitude is the romantic view (discussed at the start of this article) that standard forms are in fact 'wrong' because they aren't natural. Clearly this isn't the only possible view of pedagogy: another is that both standard and non-standard forms are normal language, but that for many people standard forms are especially associated with education (and the world of work and public engagement). This would be a much more defensible position, and it would maintain a strong link between linguistics and pedagogy.

Another source of complexity is the status of standard language (in our case, standard English) in education. Since standard English is the native language of a small sector (perhaps 10%) of the population, requiring school children to know it clearly gives this minority an unfair advantage because they already know and use the standard forms whereas others have to learn them - for example, nonstandard users have to learn to use those books in school while continuing to use them books at home. Moreover, research in sociolinguistics reveals a great deal of prejudice in favour of standard English and against speakers of non-standard, which can easily be presented as a form of linguistic discrimination. As a result, some have argued that schools should not require standard English in classrooms or in writing, and should not try to teach it, because this discriminates against local non-standard dialects (Honey, 1997). This policy of non-intervention by schools is based on well-meaning research in linguistics, and undermines an important bridge between linguistics and pedagogy. Of course, there is a much better alternative: to promote the study of non-standard dialects alongside that of standard English; but meanwhile it is reasonable for school teachers to wonder whether they really should be teaching standard English at all.

Prescriptivism tends to view the standard written language as the model for correctness, so inevitably any speech is seen as more or less deviant (and therefore 'wrong'). In contrast, an important part of the descriptive stance is respect for spoken language. This thoroughly positive development in linguistics is tied to the fact that, both in history and in personal development, written language is secondary to spoken. Once again, we find unintended consequences, which include a general lack of interest among linguisticians in written language (as such) and in how it differs from spoken; for example, when linguisticians describe the 'architecture' of language, they always recognise a level of phonology, but rarely find a place for its written equivalent, graphology. This in turn weakens the link between linguistics and pedagogy, which traditionally has always been focused on literacy in all its forms; so if English teachers look to linguistics for guidance on how a child's spoken and written language develop, they find very little and the locus classicus for English is still a book published in the 1980s, and now out of print (Perera, 1984).

Finally, it is possible that the rejection of prescription is responsible for a blanket rejection of earlier work triggered by a stereotype of 'traditional grammar' as inherently prescriptive. "What is generally referred to as 'traditional grammar' [...] is much richer and more diversified than is often suggested in the cursory references made to it by many modern handbooks of linguistics." (Lyons, 1968: 3) This may indeed explain why both Bloomfield and Chomsky ignored their own school experience and the pedagogically inspired work of scholars like Kern.

4.4 Research

Another related development is the enormously productive interest in how children learn their first language. This rich research area has thrown a great deal of light on how children learn to speak, but in this case the unintended casualty has been writing. Most such research stops at the point when children start formal education – precisely the point where it would become relevant to pedagogy. Since children typically don't learn to write or read before they start school, this means that linguistics has very little to say about these processes (though there is a large educational literature on writing and an even larger literature on reading).

Worse still, there are some areas of research in linguistics which have had a largely negative impact on education. This is the case with so-called communicative language teaching, the continuation of the Direct Method of the 19th century. Two areas of research have contributed here. From language acquisition comes the rather obvious observation that children learn their first language without instruction – they just pick it up. And from sociolinguistics and pragmatics comes the equally obvious claim that there's more to language than grammar and vocabulary: we also have to learn to communicate successfully. For instance, it's not enough to know how to form questions and commands, because we also need to know when to use them (e.g. in issuing an invitation). This kind of information is hard to learn from a grammar book, and is much better learned from practical experience of the language in real situations. Putting these two research-based ideas together, some experts on foreign-language teaching came to the conclusion that children should learn foreign languages in the same way as they learned their first language, by direct exposure to examples in realistic contexts, and without any explicit instruction (Krashen, 1982). This claim is now generally discredited (Macaro, 2014) but still has a great deal of influence on foreign-language teaching.

The case of communicative teaching of foreign languages illustrates a more general issue for research in linguistics: there is no strong tradition of researching pedagogically relevant problems. Of course there is an impressive research tradition in applied linguistics, especially in relation to TEFL (the teaching of English as a foreign language), but by and large this doesn't build on research in linguis-

tics, so it is strong in pedagogy but weak in linguistics. A major exception to this claim is the development of 'blockbuster' grammars of English starting in 1972 (Quirk et al., 1972) and apparently ending in 2002 (Huddleston & Pullum, 2002); these were all heavily funded by publishers aiming at the TEFL market, but none of them explicitly addressed the needs of these users, in contrast with reference books for TEFL teachers (such as Swan, 1995).

4.5 Disintegration

In conclusion, therefore, the 20th century saw an enormous expansion of linguistics in every sense, but also a disintegration of the links between linguistics and pedagogy. The strong links between linguistics and education that we saw in the 19th century were possible because linguistics was a relatively small subject without a strong institutional basis, so it was often carried out in informal ways by school teachers dabbling in linguistics, and many linguisticians with university appointments were keen to improve schooling (Henry Sweet being a prime example; Sweet, 1891). Unfortunately, these links did not survive the growth of the 20th century: growth in the size of the university sector, growth in the number of departments of linguistics, growth in the formal training of linguists, and growth in the research output and the knowledge base of linguistics. The amateur linguistician disappeared, and academics were under pressure to concentrate on 'proper' research, rather than work with schools. And meanwhile, of course, the same pressures were affecting the new subject of educational research, so education and linguistics drifted apart during the 20th century.

As for pedagogical linguistics, this is one of the achievements of the 20th century, but its history is complex and illustrates the same general disintegration. As explained earlier, it grew out of applied linguistics, which in turn grew out of linguistics. But this is problematic if applied linguistics simply applies linguistics without contributing to its knowledge base. My argument is that linguistics urgently needs to know more about how education affects language, but as a part of applied linguistics, pedagogical linguistics can study the impact of language on education, but not that of education on language.

5. The 21st century: Reintegration

This situation is clearly unsatisfactory for pedagogical linguistics, so what is to be done? The main goal is to restore the bridge between linguistics and pedagogy which existed in the 19th century, for which three kinds of activity suggest themselves: listening, research and campaigning.

By 'listening' I mean building intellectual bridges of understanding between linguistics and pedagogy, which I believe can best be achieved by the two sides coming together and listening carefully to each other. One immediate problem is to decide who the 'pedagogues' are: school teachers, teacher trainers, school managers or policy makers? The answer is probably that they're all relevant, though in different ways, so it would be reasonable to leave this question unanswered. Linguisticians need to hear from pedagogues how much they already know about language and what else they would like to know; and pedagogues should get a clearer understanding of research in linguistics, and especially in the areas that are most directly relevant to pedagogy. Of course, one of the conclusions that will emerge from such dialogues is that both linguisticians and pedagogues hold a wild diversity of views and have a similar diversity of areas in which they are expert. This diversity is a fact of academic life, and it's to be celebrated because it offers many more opportunities for the two sides to find common ground. Ultimately, communication is between individuals, not groups, so progress will consist in individual linguisticians making contact with individual pedagogues, and listening to them.

Research is a much more familiar concept for academics. Here progress leads through research projects on topics that concern pedagogues. Such projects already exist (in large numbers) in some areas, but there are yawning gaps. Where, for example, is the research on spelling and how best to teach it? And punctuation? And where are the research-based reference grammars or vocabulary lists for foreign languages for use in schools? The opening pages of this article mentioned another vital research topic for pedagogical linguistics: the effect of literacy and education on the language, and language awareness, of linguisticians themselves.

Campaigning is much less familiar to academics, though its meaning is obvious. The changes indicated by listening and research have to be sold to significant people on both sides. Linguisticians may have to persuade their senior management to accept pedagogical research, just as school teachers may have to sell their linguistics-based innovations to their senior management; and linguisticians and teachers certainly have to persuade policy makers and (ultimately) the public. All these things take time and commitment, but they are worthwhile. And what better vehicle for discussing the issues than a new journal of pedagogical linguistics?

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