语言教育中的应用语言学

Section 1
What is applied linguistics?

The first section consists of only two chapters: together they present a view of what applied linguistics is about, what applied linguists do, how applied linguistics constructs its theories and understandings, and how the academic subject relates to professional questions in language education. The subject may be traced back many years (for example, to the nineteenth-century language teaching innovators Vietor in Germany and Gouin in France) but an obvious recent point for purposes of comparison through time is the 1969 Congress of the International Association for Applied Linguistics (AILA), which followed the formation of the Association earlier in the 1960s, and the creation of the 40 or so national affiliate bodies including the British Association for Applied Linguistics. The early history of these movements in Britain and Europe is detailed in the papers by Trim and van Els in Grunwell (1988). The huge expansion in numbers attending and the great evolution of topics and subtopics represented at the successive meetings of AILA, comparing, for example, AILA Cambridge 1969 (14 sections, 340 papers with AILA 1996 at Jyväskylä, Finland (160 Symposia, 900–1000 papers and poster presentations) testify to the sustained international interest in the subject. Similar histories of expansion could be told for the national organizations which invite international attendance at their conferences, for example TESOL (Teaching English to Speakers of Other Languages) in the US and IATEFL (International Association of Teachers of English as a Foreign Language) in the UK. However, attendance at such events implies some obvious restrictions: registration and travel do not come cheap, so participation is less easy for those at the lower-paid end of the profession. Nevertheless, this book intends to demonstrate that the developments are available and interesting to all practitioners and students in the language professions (teaching, research, testing, evaluation, administration).

This expansion has been driven by a variety of factors, of which the most obvious have been:

- the rise of the (mainly, but not solely, English) language teaching industry, lucrative in terms of employment for many teachers in many national contexts and many expatriate teachers in different parts of the world, and valuable in terms of consumption of publishing, and exporting education, to national budgets of several countries;
- the explosion of research in second language learning and acquisition, motivated by some of the same factors, and by theoretical interest;

- the incorporation of more and different areas of research with relevance to language over the years;
- the ever-changing array of language problems in our societies:
  - majority and minority languages;
  - prestige and low-valued dialects;
  - multi-language institutions;
  - employment patterns and migration of workers and their families;
  - students going abroad for study;
  - multinational companies operating in foreign language environments;
  - legal rights;
  - bilingual education, mother-tongue education;
  - access to markets;
  - access to the Internet.

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Applied linguistics and language education: how the one affects the other

Some questions from practice

First of all, we will look at three examples from language education. The first refers to a highly respected piece of teaching material, first published in 1987 and subsequently in two further editions, 1993 and 1996 – *Focus on First Certificate* (O'Connell 1996). The second is an extract from a real English class, given as part of a course for intending students of a variety of subjects at a British university EFL unit. The third is a stream-of-consciousness record of a learner of Greek practising a writing assignment. In each case, the commentary highlights some of the intriguing questions that each extract suggests about the language teaching/learning process, which applied linguistics has either researched or might be expected to come up with some answers for.

Teaching material

Focus on First Certificate

First Certificate in English (FCE) is a language qualification which is offered by the University of Cambridge Local Examinations Syndicate and taken worldwide by some hundreds of thousands of learners every year. This preparatory material is divided into a number of teaching units, which provide material for a number of actual lessons. Each teaching unit, which gives material for the teacher to use in several actual lessons, has a similar overall structure:

lead-in
text and exercises
communication activity
focus on writing
focus on grammar
text and exercises
focus on listening
focus on grammar

communication activity
focus on listening
focus on writing
language review.

This material shows up a number of assumptions which it is worth spelling out, since they have been the subject of some controversy over the years.

Language exposure is centre stage. Thus, it is assumed to be part of the materials' job to contain appropriate examples of the language. These materials actually go a little further than that fairly innocuous assumption – they assume that the examples of the language should be genuine, from the culture in which the language is spoken. There is in fact a considerable amount of debate about this issue of authenticity, exactly what it means, and how important it is. Many people argue that it is easier to learn from real examples of the language, because learners can relate to that; others argue that authentic language is often too difficult, and specially written language teaching material is more suitable.

Related to this issue is that of correctness of the language itself. To what extent can the language contained within a 270-page book be a true reflection of the language 'as she is spoken'? The selection of texts has to be monitored therefore by some kind of editing process which is aware of modern descriptions of up-to-date language, so there is a role here for linguistic description.

Another issue here, but which is not so evident from the first unit, concerns the cultural embeddedness of the language. Many learners do not share the cultural assumptions underlying the examples of the new language they are exposed to, and there is a host of issues here from hindrances to comprehension to cross-cultural offence which need to be addressed. The first unit is built around the idea of young people being able to contemplate exotic holidays as pictured, and this is very foreign in many of the countries in which there are candidates for First Certificate. One might assume that language proficiency is independent both of the topics people wish to use the language for, and the cultural assumptions of the people(s) who speak it as a first language. But can there really be culture-free or culture-fair language teaching materials?

These materials also isolate language features such as grammar rules and vocabulary in language analysis boxes. There is evidently an assumption that isolation of such features enables the learner to concentrate on them and improve their understanding and control of them in their own linguistic repertoire. As such, these materials subscribe to canons of good practice in the profession that have been hallowed for many years. However, research on language learning has been hard put to it to find objective justification for the success of this kind of language teaching. After all, the best language learners of all, children acquiring their first language, get by happily without it. Indeed, it is only relatively recently that researchers have returned to the idea of what is nowadays called consciousness-raising or even more recently focus on form

or input enhancement. In Chapter 5, we will trace some of the history of the research involvement with second language acquisition (SLA).

The materials also specify when and how and to whom the learners should talk. Once upon a time, materials presented dialogues for learners to repeat and perhaps learn by rote, assuming that learners should only be allowed to produce correct utterances. These materials, however, in common with many of the period, give guidelines for paired conversations and other kinds of group work, in which the learners are free to invent their own expression in the foreign language. This assumption, that language is learnt by using it, or 'learning to talk by talking to learn', is very important to a communicative approach to language learning, as is the use of authentic material; but many people sense there is a contradiction between exposing the learner to only authentic materials while expecting the learner to invent their own language for use with other learners.

Note also that the language examples are embedded in a large amount of language addressed directly to the learner – procedural language. In some kinds of materials, procedural language is often in the language of the learner, to avoid misunderstanding. Here, it is expected that this kind of direct communication with the learner will be in the target language, although the learner may not be expected to respond in it about the procedures or the language, rather, just carry out the instructions. This reveals an assumption here that learners also learn through comprehension and appropriate action. In fact some authorities have argued that it is in these elements of the lesson that true communication occurs and is available to drive the learning process forward, rather than in the pseudo-communication characteristic of doing paired conversations under guidance.

Lastly, it is worth speculating what model of language the textbook assumes: what it is in fact trying to teach. Put simply, a successful learner will be able to control the language they produce, understand written and spoken texts, and command a range of written styles. In the next chapter we shall see that specifying what 'knowing a foreign language' actually means is in fact a rather complicated thing to do.

Lesson transcript extract

Teacher: J; Course: August 97 pre-sessional, Essex University
This is a reading lesson, and the teacher has divided the time up between whole-class activities and silent reading for individuals and pairs for various goals. The first activity is scanning for a particular group of words. The second activity involves vocabulary attack strategies, the third, consideration of a whole reading passage about biological effects of stress (conducted in pairs, looking for unknown words), and the last involves working through a test for stress which is ancillary to the reading passage. In between the teacher leads whole-class activities concerned with monitoring their understanding of

individual words and other features of the reading. This extract follows the last but one activity in the lesson, in which she checks the students' understanding of a number of words in the passage prior to having them perform the stress test.

1	T	OK stop there. Let's look through them because Albert's desperate to do the stress test so let's see if we've got time to do the stress test. Let's just go through the words
	T	A urbanized Yoshio
5	Y	from a town
	T	good exactly well done – B eliminate eliminate Hitoshi
	H	get rid of
	T	yes exactly (writes on whiteboard) – modify
	?	make changes
10	T	yes make changes, alter – indicators
	X	things that show you something
	T	things that show you something so for example on a car the little lights that show if you're turning left – and nutrition, Chen-wei
15	C-W	food, for health
	T	good, well done, and evaluate we did – and highlight Miyuki
	M	focus on
	T	forecast? oh focus yes well done, even better because you
20		gave me focus on which is the right preposition
	T	OK What I'd like you to do next then is not to do this for yourself I'd like you to interview your partner, first of all, and what you have to do when you do the stress test is
		1 is almost never [obviously a misreading of always]
25		2 is frequently
		3 is occasionally
		4 is almost never
		5 is never
		So, interview your partner and go through these questions
30		with your partner. So you'll need to sit next to the same person tomorrow

This example of interaction between teacher (T) and students (M, C-W, X, Y, H – together, S) forms a very small part of this one and a half hour lesson. In this teacher's style, such sequences are inserted for particular purposes. However, it exhibits some features of structure which are relatively common in EFL classes, but which give rise to a number of interesting questions. It is, once again, the concern of applied linguistics to make sense of, and find answers to, those questions.

This activity is bounded very clearly by boundary markers – OK (lines 1, 18). These separate off different sections of the lesson and are often accompanied, as here with the teacher returning to her chair, by rather definite actions. Of course, the teacher's division of the lesson time may not coincide with the learners' perceptions, and it is not infrequent to find that students, especially weaker ones, still believe they are in a previous section with different procedures and demands long after the teacher has moved on. There is no evidence, however, of that happening here.

There is considerably more teacher talk than student talk, and the talk emanating from both parties clearly differs in several ways. To start with, T speaks mostly in syntactically complete sentences, (except, however, in a particular form of interaction, T abandons full sentences and speaks in noun phrases (113–14)), whereas Ss respond in noun and verb phrases, and do not volunteer anything more. In other parts of the lesson, they do: neither side seems to consider that they need to in this section. T talk seems to have at least four different functions here:

Display questions, in which the meaning (in the form of a synonym or two) of a phrase or word in the text is required as the answer. Note the form of the question is in fact a single word announcement, and clearly understood as such (L 4, 6, 8, 10, 14, 16). This section of the extract is a good example of an *Initiation/Response/Feedback* exchange.

Procedural instructions (lines 21–31) are given to move the lesson along and to make sure that all the participants know what they are supposed to be doing.

Explanations (lines 9, 11) augment the information already elicited from the students about the words, but for some reason the teacher is selective about what is expanded in this way.

Feedback (lines 6, 8, 16, 18) in this case mostly congratulatory, is given to the students for answering the questions correctly.

By contrast, the range of functions of S talk is highly constrained – responses to T's questions. The most notable feature of the S talk is that it is by invitation from nominated students, by the teacher, not initiated by the students themselves. This example of imbalance between teacher and students can be seen as a reflection of the distribution of power, authority, and responsibility across the participants – but it is also notable that there is no evidence of the students objecting to the existing distribution.

Learning opportunities in the lesson may be assumed to exist in the silent reading opportunities, the strategic practice, interaction between students, and interaction with the teacher. While the opportunities may be obvious, the take-up of those opportunities in learning itself is difficult to observe and attest, and may only be inferred.

T is very much in control, in this section, the Ss compliant; there is no obvious release of control of topic or procedure to the students. This is a

widespread feature of many kinds of teaching, and this teacher has clearly chosen to conduct this part of the lesson using such ground rules. This situation is often contrasted with teaching based on one principle of the communicative approach, in which the motivational element of students formulating what and when they want to say something is believed to contribute to learning. However, the extract here is more akin to a test situation than a communicative one. On the other hand, the participants might have argued, if we had been able to ask them, that they were communicating directly about a topic of great concern to them: the language itself.

T gives some attention to Ss' language, but mainly in a congratulatory way rather than critically. There is only implied criticism of the pronunciation of focus because of an apparently genuine misunderstanding. Error correction is a controversial topic in language teaching theory, and has been the subject of many pieces of research. How sure can T be that production of synonyms means the words have been understood in the context of the reading passage? Comprehension of the passage as a whole is not monitored here, but was in individual work with the students working in pairs: large sections of the lesson time are devoted to the teacher going round the working groups listening and intervening, in fact much more time than T devotes to whole-class T/S interaction, clearly a deliberate choice in the plan.

The teacher also echoes what the student says by way of response in several cases (lines 10, 12, 19). Try this in ordinary conversation to see how different it sounds there compared to the classroom!

Finally, S/S interaction is given a lot of time in other sections of the lesson, presumably on the assumption that learning occurs when using the new language to communicate with another learner. It is a feature of several approaches to language teaching, but particularly of the communicative approach, that the other learners are seen as an important learning resource.

These and other issues have been hotly debated in language teaching methodology and particularly in classroom process research, in which actual practice in authentic classrooms has been analysed, using a variety of methods. This fascinating work is described in Chapter 10 and is referred to often elsewhere.

A learner's protocol

The third example is of a verbal report of a learner of Greek, who is a language teacher herself and an experienced language learner, performing a language task, writing a short composition in practice for a GCSE examination. She speaks into a tape-recorder at the same time as writing the piece. The protocol begins:

8th May

This is the practice paper for the Greek GCSE writing at higher level and I'm going to try to do one of the questions on the paper. This – I need a piece of rough paper – I've done question 1, now questions 2 and 3. Do one 2 out of 3. Question 3 – 'something with your parents.' Oh I don't want to do anything that assumes you're a teenager, so let's try the second one – 'Write an account of how you went to dinner with your friends to a Greek restaurant.' Right, let's try that. Get a piece of rough paper. I might have a problem here because although I can use the dictionary I can't look up Penny's [the teacher] list of past tenses of verbs. About the time. I guess that now I've done one there's maximum half an hour. That means I'm going to have to use all the verbs that I know in the past tense. The trouble is, because this is only a practice, I can look up Penny's list but perhaps I ought to try to do this one under exam conditions. Let's have a look at the instructions in Greek and see if there are any tips. [reads the rubric in Greek aloud] Why *-ta*? I'm going to have to look up *-ta* on Penny's list because I do not understand either the ending or the form of the verb.

Let's say *sto Londino* let's pretend this Greek restaurant's in England – *sto Londino* there are many restaurants *estiatorio is* restaurant so *polla estiatorio* let's just check whether that's right or not – um OK *polla estiatorio* foreign restaurants I wanted to say anyway one can eat food from many different countries *kai* one can it is possible to I can we can he/she/it can I don't know *borome na* fame *fagito* how do you spell it *apo oles* the countries of the world *chores chora chores chora choro omega* of the world in all countries world I don't know what the world is can't be *cosmos* because *cosmos* means people, better try *chora* let's check it *o cosmos tou cosmou.*

From this short extract, we can see a number of interesting points. This is a piece of evidence about a learner, but we can ask how we can believe what the learner says about herself – the problem of validity. We can also ask how deep into the process of language use or indeed of language learning an individual's conscious attention can probe, and therefore what might be going on below what some psychologists have called the threshold of consciousness. However, even at face value, the extract raises important questions.

The learner is very concerned to choose the appropriate ground for the practice: out of the three questions on the paper, one is a repeat, one assumes the learners are teenagers, which this learner is not, and one asks about something she can more obviously relate to. Choice of subject therefore matters, not just because it is easier to relate to something more adult, though 'plausibility' is an important criterion, perhaps more so than authenticity, but because she wishes to find a vehicle for her language that will give her the best chance in the examination. Choice of subject is connected therefore to motivation, in this instance through what is usually called level of aspiration. This learner has in fact chosen to go for the higher level of examination, but selects the most suitable title within that more difficult level of test.

The learner is very concerned about the external constraints on the performance – time, rough paper, language reference materials like dictionaries and grammars, some of which are allowed in the exam and some not. In fact, a large proportion of the verbal report is taken up with dictionary look-up, because this learner is highly concerned with accuracy, and one of the immediate problems she has is in getting the form of the past tense of verbs right, and another is the confusion caused by the several ways of spelling 'i:' in Greek. Because it is a practice for an exam, and there is credit to be gained for accuracy, this learner uses every piece of evidence to hand to get it right (dictionary, the exam paper itself) but recognizes the constraints imposed by the examination conditions: using grammatical reference material in the form of a list of verb forms prepared for revision by the teacher could lead to further learning, or at least re-learning, but would not practise reliance on stored knowledge as required in the examination.

Translation from the mother tongue is very evident in this protocol, and should surprise no one. There have been many methodological attitudes to both overt and covert use of translation in language learning, but it is a strategy which learners use quite independently of their teachers' exhortations. Noteworthy here is not only the extent of the translation – there are only a few stretches of Greek which are uninterrupted by planning in English – but the frequent changes of plan to accommodate what the learner believes she can actually put into Greek. Looking for a way of saying 'There are many foreign restaurants in London' the learner finds different ways of saying the same kind of thing – a strategy of circumlocution: 'In London there are many restaurants where one can eat food from many countries of the world'. However, the strategies employed are highly active and involve considerable transformation of the original sentence plan, as well as many diversions due to uncertainty about individual words and their correct shapes in context. Later, we shall look at the distinction which has been drawn between strategies of learning and of performance. This kind of incremental sentence composition incidentally demonstrates how different sentence construction is from the grammatical analysis of the sentence, which may be used by this learner as a component of her checks and revisions, but is not reported aloud.

The content of the composition is not particularly important to this learner except she is concerned to avoid answering a question for teenagers. A little further on, she remarks 'better put something in about food', not inappropriately. The role of content in language learning is in fact a highly intricate topic, with whole language teaching systems based on contradictory positions, from grammar translation to content based-language teaching.

Evidence about learning processes comes from a variety of sources, some direct and some indirect. In this instance, it is clear that the stream-of-consciousness 'verbal protocol' manifests comments about a whole range of issues, including comments on the language, the planning, the editing and revision (NB the insistence on copying out, distinguished later from reading through rather crucially), the nature of the performance and the strategies for

coping with time pressure, and the unusual situation of speaking a commentary for research purposes anyway. Later we shall discuss the advantages and disadvantages of various kinds of research evidence.

The nature of applied linguistics

These examples have shown that many questions arise which need explanation. In some cases, explanations have already been suggested and accepted; these tend to form the educated assumptions of materials writers and teachers and help shape the action they take. In many other cases, there are explanations which are controversial and provoke further research of various kinds; and in some cases, the questions may be obvious but there are no explanations which command widespread support.

Of course, applied linguistics is not solely about language classrooms, as we shall shortly see, but the examples above serve to show how immediately one can move from real world events to speculation about explanations, and how quickly what appears straightforward can, on reflection, turn out to be difficult to understand. Applied linguistics itself may be seen as an autonomous, problem-solving discipline, concerned broadly with language (mainly, but not exclusively second language) education and language problems in society. This practical involvement with society and the aspirations of its members as language learners and language users contrasts, of course, with the concerns of linguistics 'proper', which is no less strongly committed to a different goal, the explanation of the nature of language itself and understanding of human psychology through understanding the most important biological feature of our species, namely natural language.

There are many traditions, largely depending on the professional's original intellectual home (English, modern languages, linguistics, sociology, education, biology, experimental science) or on the nature of the problems, but two broad and complementary approaches may be distinguished, which balance each other. The first, and perhaps older one, is the pursuit of interpretation and explanation, bringing to bear the theory, methods, and research results of other disciplines on the problems that present themselves; and the other is the collection of the results of direct research on the problems and the subsequent construction of theories around them. Davies (1995) has dubbed these two broad approaches 'speculation' and 'empiricism', and has argued strongly that both have their place. The history of ideas about how second languages are learnt (discussed in detail in Section 3) shows influences from both approaches:

- the extension of behaviourist ideas of habit formation, reward, and reinforcement to selected phenomena;
- direct investigation of errors and explanation along lines borrowed from memory studies (e.g. negative and positive transfer);

- combination of ideas of feedback – less learning derived from first language acquisition studies and formal learning;
- speculative use of powerful linguistic conceptions of universal grammar to attempt to explain patterns of acquisition and non-occurrence of certain errors predicted by earlier models;
- the reinstatement of conscious and deliberate mental activity as an important component of explanation.

Davies outlines several other topic histories to illustrate his thesis in the paper. The first without the second can lead to a prescriptive approach, using theory validated in one field to determine action in another where it is untested, and to a belief that practice (for example, in language teaching) is intellectually subservient to 'grand theories'. This is sometimes called a 'technical rationality' or 'applied science' approach (Wallace 1991). The second without the first can lead to the accumulation of research results without a clear idea of what they mean, and no link to the wider relevant issues of the day, whether political or academic.

Widdowson (1990: 85) condemns the faults of such an approach:

> The value of empirical research ultimately depends on the quality of conceptual analysis that defines the objects of enquiry.

However, one is entitled to ask 'whose problems?', since if Widdowson's 'conceptual analysis' is interpreted as meaning the theories of professional linguists, educationists, sociologists, and so on (which would be an over-restrictive and incorrect view of his statement) the intriguing questions thrown up in real classrooms by practical teaching situations like

> what to teach exactly?
> how to introduce new vocabulary?
> why the students make these kinds of errors and not those?
> how does reading fluency develop?

and so on, would not get a chance to be asked nor answered. Development of challenging questions like these as it were 'bottom up', from the grassroots, has always been a feature of applied linguistics, though somewhat underrated, and has relatively recently found expression in the activities of teachers doing research themselves (see Edge and Richards 1993; Crookes 1993; McDonough and McDonough 1997) which we shall look at in some more detail in Chapter 10.

Another way to view the diversity of applied linguistics is to chronicle the contributors and consumers: the stakeholders. These include linguists of various kinds, for techniques of describing language and languages (called by Corder 'primary applications of linguistics'), and for conceptions of the place of language and second languages in social life; teachers, for action and reflection on instruction, learning, materials, and organizations; educationists, for theories of instruction and teacher training; psychologists, for theories of

individual and social learning, individual differences, and affective states such as motivation; second language acquisition theorists, for theories of how second languages develop; testers and educational measurement experts, for theory and technology of assessing achievement and levels of linguistic skill; evaluators, for developing models of evaluation of instructional programmes, and many others.

It follows that with such a diverse and rich background, the field is unlikely to have a single agreed theoretical persuasion, nor a single agreed body of research techniques, such as might be felt to be the case for older disciplines like chemistry, history, or linguistics itself. This is true, although recently there have been moves to rally around the 'best theory' in the major sub-field of second language acquisition (discussed in the next chapter, documented in a special issue of the journal *Applied Linguistics* (1994). These moves have been highly controversial and have not attracted wide support even within the active sub-field they originated from. Furthermore, it is a misreading of the other disciplines mentioned that they have had a monolithic single body of theory and research methodology to which all members subscribe. What each has, and this is also true of applied linguistics, is a conception of good practice as codified in, for example their professional organizations, journals, and in what kinds of work are accepted in the peer review process for those journals, and in the criteria for the award of qualifications and research degrees in the fields.

Major focuses

Historically, language education has always been the main area of concern, and this book will confine itself to the important issues and developments relevant to that. However, this is a large field, and applied linguists have been active in it in a variety of roles in at least the following areas:

- teacher training and education:

  for teaching English to speakers of other languages (TESOL), in a variety of contexts, for example within an English speaking community, outside such a community (English as Foreign Language (EFL), for long term residents of such a community like different ethnic groups (English as a Second language (ESL)), for fixed term residents like visiting learners, guest workers, students of other subjects, etc. Clegg (1995) usefully disentangles just how many different kinds of language teaching situation are present in just one country (UK) for teaching foreign languages in the public education system and elsewhere.

- developments in training and supervision methods, developments in training structures;
- materials development, trialling, and evaluation;
- teaching methods and techniques:

the concept of method and methodology, approach, procedure, research on methods and innovation in method, maintenance of innovation, cultural appropriateness and methods development.

- testing and assessment, proficiency description and the recognition of achievement, training for testers;
- research on second/foreign language use and users:

  the definition of what it means to know, and be able to speak or use a second language.

- research on second/foreign language development:

  how do we learn other languages, whether naturally, self-taught, through immersion, or instructed in classrooms?

- first language education, the language of school, the development of primary literacy and oracy, language awareness;
- description of language itself, in general as grammars and dictionaries, and in particular as 'needs analysis', and the specific descriptions of the way language works in the situations facing the learner, discourse and genre analysis, pragmatics;
- educational evaluation;
- language education policy, language planning in multilingual societies;
- language and culture – cultural hindrances in understanding, cultural barriers to language, linguistic barriers to intercultural understanding, language in multicultural settings.

Secondary focuses

Applied linguists also work in a number of other fields which are no less important in their own sphere of operation but do not, at the moment, have such universal appeal or worldwide financial implications as language education. Some examples are:

Clinical applications

Linguistics in speech therapy, language and psychological disturbance, language impairment, the assessment of children's language disorders (Crystal, Fletcher and Garman 1976; Grunwell 1988).

Forensic applications

Linguists have been professionally involved with the law in various ways: for example, in establishing the rights of minority language speakers in the face of

legal proceedings initiated and conducted in the language of the majority, or the national language; and in using discourse analysis to examine statements for inconsistencies and possible illegal alteration (Coulthard in Cook and Seidlhofer 1995)

Neuro-linguistics

Representation of language in the brain has been an abiding interest of many linguists who are concerned with the neurophysiology of language, both for linguistic and medical reasons. There have also been many studies of second language performance and some of second language loss following brain damage, looking at issues such as:

- hemisphere laterality (which side of the brain is involved in what linguistic activities);
- language learning following brain damage;
- the 'critical period hypothesis' (the theoretical time during which the brain can support or is specially suited to language acquisition, like from birth to puberty, which would imply that acquiring a second language after the 'critical period' is impossible, or at least that it can only be done by utilizing different mental equipment).

Spolsky concluded (in 1989):

> To sum up, the body of hard data on the neurolinguistics of second language learning comes nowhere near the enormous amount of speculation or the large number of studies. (Spolsky 1989: 87)

Computational linguistics

Whether nowadays computational linguists would want to call themselves applied linguists is a moot point, since computer analysis of language is a highly technical sub-field of theoretical linguistics with its own methodology, theories, and outcomes, but this area (as 'computer analysis of text') formed part of the 1969 AILA congress mentioned above. Computer technology has advanced so rapidly in the last 25 years that it would be strange if linguistic applications had not spun off. Machine translation and concordancing (cross-referencing of occurrences of word-tokens within a text or a corpus) are still big research areas, the latter very much with application to language education. The possibility of storing and processing huge amounts of textual data electronically has brought 'corpus' based linguistics (as opposed to appealing to linguists' intuitions or single attested instances) into practical possibility, with dictionaries and grammars being based on computer analysis of such huge banks of stored contemporary language (e.g. the COBUILD series). At the other extreme of size, battery driven pocket calculators can now contain

foreign language dictionaries and grammars, revolutionizing dictionary look-up and opportunity for dictionary use for a generation of harassed second language speakers in foreign countries. Research is also being conducted into the use of word-processing, spelling checkers and grammar checkers, e-mail, concordances, and the Internet for everyday language learning in classroom and self-study situations.

Translation theory

This was another topic from the 1969 congress which has exercised applied linguists ever since, with work on technical and literary translation and the theory of translation, and individual studies of operating in two languages at once (see for example the papers by Hölscher and Möhle, Gerloff, and Krings in Faerch and Kasper 1987). Translation theory is constructed to answer such questions as:

- how faithful to the meaning of the original can a translation into another language be;
- what is acceptable not only in the case of propositional meaning, but also in the case of metaphor and idiomatic language;
- how culture-based meanings may be represented in the other language
- how translation may be evaluated;
- how translators may be trained;
- how the process of translating as a mental activity develops.

Several of these topics have direct implications for questions in other areas of applied linguistics, for instance in the area of translation as a language learning task; the advocacy and use of translation as a 'natural' language learning strategy; and the place of translation in second language competence, that is, as a skill to be expected of all speakers of two languages or as a rather special skill only to be expected of specialists.

What applied linguistics is not but may be expected to contribute towards

Finally there is a group of topics which would not normally want to claim residence in the house of applied linguistics, belonging to other professional spheres, but which in many cases developments in applied linguistics can contribute to. Typically, they would occur on teacher education courses in (E)LT. From the realm of professional language teaching, the following suggest themselves:

- principles and practice in the design of language teaching projects;