Edited on behalf of the Nottingham Linguistic Circle

by

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* based on meetings of the Nottingham Linguistic Circle

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EDITORIAL

We are glad to be able to report, after two years of publication, that NLC is thriving and is beginning to establish a creditable position for itself in the market of linguistic bulletins and broadsheets. This issue presents a range of contributions on aspects of descriptive and applied linguistics. One interesting and encouraging feature of these contributions is their general emphasis on field work and empirical studies. Another, no less engaging, is the fact that three substantial articles have been contributed by women, one of them a student, one the principal of a boys' preparatory school, and one a scholar in computational linguistics. We are accordingly tempted to name this our 'Women's Lib' issue, and to dedicate it to Ms Fletcher, Wilding, and Berry-Rogghe.

We are not able to report quite so cheerfully on linguistic developments in the university. The lecturers at present concerned with the teaching of the subject had drawn up and submitted proposals for appointments to be made within the current quinquennium; appointments which, we hoped, would help to establish linguistics as a recognized academic discipline at Nottingham. Lack of money, however, has forced the shelving of these plans, at least for a year.

Notwithstanding the uncertainty of its official status the subject can be said to enjoy a vigorous extra-curricular life. The transactions of the Nottingham Linguistic Circle provide a constant stimulus; some of our most notable contributions, indeed, result from meetings held by this group. There are also encouraging signs that Linguistics is beginning to appeal to interdisciplinary interests. The strength of these interests is reflected in the unusual length of the present issue; a healthy symptom, for which we are duly grateful, though we regret that we are thereby obliged to withhold papers we had hoped to include in this number. We look forward to presenting these and other contributions in Vol. III next Autumn.

R. Hartmann   W. Nash

How to obtain your copies of the NLC:

(a) Members of the Nottingham Linguistic Circle (subscription £1.00) receive their copies free of charge.

(b) Single issues are 25 p, two issues per volume are 50 p, including postage.

For an index to past issues, see p.40.

Send cheque or postal order to 'Nottingham Linguistic Circle' c/o Language Centre, University of Nottingham, NG7 2RD.

NOTICES AND PROSPECTS

Forthcoming meetings:

York 26-29 March	Conference on Logic and Semantics. c/o M. Bell, Department of Philosophy, University of York, Heslington YO1 5DD.
Hull 28-30 March	Spring Meeting of Linguistics Association of Great Britain. c/o P. Werth, Department of English, University of Hull HU6 7RX.
Bloomington, Ind. 29-31 March	3rd Annual Linguistic Symposium on Romance Linguistics. c/o Department of Spanish and Portuguese, Indiana University, Bloomington USA 47401.
Lancaster 30 March-1 April	AILA/BAAL Seminar on Communicative Teaching of English. c/o C. Candlin, Department of English, University of Lancaster, Bailrigg, Lancs.
Bangor 3-5 April	Colloquium of British Academic Phoneticians. c/o R.A.W. Bladon, Department of Linguistics, University College of North Wales, Bangor, Caern. LL57 2HP.
Edinburgh 6-9 April	Conference on the Linguistic Study of Lowland Scots. c/o The Director, Department of Educational Studies, University of Edinburgh EH8 9JT.
Cambridge 9-12 April	Colloquium on Formal Semantics of Natural Language. c/o E.L. Keenan, Department of Linguistics, University of Cambridge CB3 9DA.
Sheffield 14 April	Seminar on Child Language. c/o F.C. Stork, Language Centre, University of Sheffield S10 2TN.
Nottingham 10 May	Nottingham Linguistic Circle lecture by F.C. Stork (Sheffield) on "Linguistics and Speech Therapy". A/V. Room, 7.30 p.m.
Vienna End of May	Symposium on Rule Ordering. c/o T.A. Perry, Institut für Sprachwissenschaft, Universität Wien, Liechtensteinstr. 46A. A - 1090.
Ann Arbor, Mich. 5 July- 28 August	Linguistic Institute of the Linguistic Society of America. c/o Department of Linguistics, University of Michigan, Ann Arbor, USA 48104.
Pisa 27 August-1 September	International Conference on Computational Linguistics. c/o A. Zampolli, CNUCE, Via S. Maria 36, Pisa I-56100.
Moscow August-September	International Congress of Sociolinguistics. c/o J.D. Desherijev, Research Institute of Linguistics, Ul. Marksa-Engelsa d. 1/14, Moscow G-19 USSR.
Edinburgh 3-7 September	1st International Conference on Historical Linguistics. c/o C. Jones, Department of English Language, University of Edinburgh EH8 9JX.
Nottingham 20-21 September	BAAL Seminar on Recent Descriptions of English. c/o P. Strevens, Language Centre, University of Essex, Colchester.
Nottingham 21-23 September	Annual General Meeting of BAAL. c/o W.A. Bennett, Department of Linguistics, University of Cambridge CB3 9DA.

PHONETIC TRAINING FOR MODERN LANGUAGE STUDENTS

Let me begin by defining and delimiting my subject and say that for me 'students' implies some form of higher education and I shall not therefore be dealing with language learners generally; that 'modern language students' can be taken to include students of the mother tongue, i.e. English, but I recognise that the term as commonly used excludes English. (Though 'phonetic training' would indeed be relevant to mother tongue students, the actual learning of one's first foreign language (L2) is a very different matter from the learning of one's mother tongue (L1).) 'Phonetic training' for modern language students I shall take to include some phonetics (i.e. a branch of linguistics) studied in its own right, with its theoretical framework of classifications and definitions - and important because of the great and growing importance of spoken language as a subject of study -, and some auditory and articulatory training, i.e. some practice in the skills, drills and techniques generally that are necessary for the efficient study of language or of any language. And let us not lose sight of the general educational value and the psychological importance to the individual in developing and integrating his personality, of efficiency in whatever he does, because of its leading him to a sense of personal adequacy and self-fulfilment.

I need not now labour those areas of the subject so defined that are on the whole covered satisfactorily in most places where phonetic work is done at all: rather I will seek to emphasise where I feel that something important is lacking almost universally. It is the basic groundwork of preparation for language work of any kind that is lacking, or skimped, or taken for granted. It is for instance wholly mistaken to imagine that foreign residence as such (after some years of conventional class instruction) will undo all the acquired faulty speech habits and put others in their place, i.e. give the student a good pronunciation. Phonetic instruction - much more basic than is usually attempted -, designed a) to present clearly and simply the relevant facts and b) to decondition the learner (to some extent) from the shackles of his mother tongue by preparing him to be ready for all sorts of linguistic phenomena; all this should precede any foreign residence - or indeed any work on language - because otherwise a gross wastage of time, effort and money is inevitable for all concerned. As things are, the student is effectually denied the chance of making anything like full use of the many opportunities offered to him (this includes language laboratories, tape recorders and so forth), simply because he has not previously been taught to listen. After learning one's mother tongue, one has in effect learnt how not to listen, i.e. to all that is irrelevant to the overall meaning being communicated, and the brain supplies copious information from its store of knowledge (of a language already known), to add to the near-minimum of auditory cues to which the hearer really needs to pay attention. Hence the essential need for 'deconditioning', for training every learner, preferably before or as he comes to his first foreign language, to notice auditorily much more than he otherwise would, to respond accurately and reliably to all the parameters of speech (duration, pitch, vowel quality and so forth) first separately and then when combined, as in normal speech.

Once a measure of deconditioning has been achieved, the way is open for improved standards in all existing techniques and procedures - as well as in methods not as yet devised, which will otherwise be doomed to comparative futility. If this could be achieved earlier in the educational process, i.e. at school, that would of course be the best time. But until it is, the work must be largely remedial, during higher education.

Auditory and articulatory training, though two different things, should proceed hand in hand - but it should never be forgotten that the self-monitoring of every speaker who hears himself while speaking is what really needs cultivating to a much higher level, because it is on himself that he must ultimately come to rely.

P. MacCarthy,
University of Leeds

SOME CONTRIBUTIONS OF COMPUTATIONAL LINGUISTICS TO THE STUDY OF LANGUAGE

(This paper is a summary of the talk I gave to the Nottingham Linguistic Circle last November. In redrafting it as a paper I found that some aspects mentioned in the talk had to be omitted, in particular the section dealing with the operation of the machine, as illustrations would make too great a demand on space.)

In trying to assess what the relevance of the use of computers to linguistics is, one cannot avoid asking the question 'what is the aim of linguistics?'. A lot has been said about the competence-performance dichotomy, therefore it may be safer to define its aim as being on the one hand 'taxonomic', namely to describe and categorise language utterances, and, on the other hand, 'idealistic', namely to explain what it means to understand and speak a natural language. In achieving the former aim, the computer can provide a most useful tool, but to my mind its greater interest lies in the contribution it may make to the latter. If we could achieve communication with a computer in natural language, we would have built a very powerful linguistic model. This does not necessarily mean that the processes going on in the human mind are similar to computer operations, but at least we would have a much better understanding of the logic involved. Unfortunately, computational linguistics - or more specifically that branch of Artificial Intelligence dealing with aspects of language - has still a very long way to go before it can aspire to producing a 'HAL' computer (cf. the film '2001') with its almost human powers of reasoning and linguistic ability. But nevertheless research in this area has yielded some rather spectacular results which must be of interest to the linguist. There exists indeed a significant interaction between the fields of logical design, compilation techniques, information retrieval etc. on the one hand, and the field of syntactic and semantic analysis of natural language on the other hand. Linguists are perhaps less aware of this overlap of disciplines than of that between linguistics and the social sciences. This merely emphasises once more the complexity of the phenomenon of language.

Phonetics and phonology

This area includes, in the first place, studies in artificial speech recognition and synthesis. Although the latter have been fairly successful in producing sounds which are more or less intelligible to humans, the former may as yet be considered as a failure. The acoustic information is so vast and complex that the machine is unable to extract the relevant features. From the linguist's point of view, such mechanical testing of the definition of phonemes in terms of their 'distinctive features' may be of great value.

Lexis

Sorting and counting of words at very great speed is an operation at which the computer excels. This makes it an invaluable tool in dictionary compilation and various studies of word frequencies (for example, Dr. Hartmann's and Mr. Butler's analysis of the vocabulary of German chemical texts with the aim of compiling a more suitable German course for chemistry students). Other applications of frequency counts and concordances are the establishment of authorship (cf. the Pauline epistles), comparative stylistics, etc. A selection of recent projects in literary and lexical studies using the computer is presented in the Proceedings of the Cambridge and Edinburgh International Conferences on 'The Use of the Computer in the Humanities' (Wisbey 1971, Aitken 1973). The computer's ability to handle large amounts of text accurately and consistently at great speed has further enabled linguists to put to the test distributional theories of meaning such as Firth's collocational theory (cf. Berry-Rogghe 1971). The use of statistical data about language must, however, be interpreted very cautiously. Unfortunately, some researchers in this area seem to assume that language can be explained merely in terms of word frequency profiles.

Syntax

Although many generative grammarians make the point that their methods of analysis are not 'mechanistic', it cannot be denied that the impetus on the formalisation of syntax has come from computational techniques. Most of the concepts introduced in Chomsky's Syntactic Structures (such as 'Markov chain', 'context-free' and 'context-sensitive phrase structure grammars', 'recursion', and 'terminal string') are obviously borrowed from the literature on compilation techniques. 'Compilation' is the parsing of computer instructions written in some computer language (e.g. ALGOL, FORTRAN, COBOL, etc.) so that their meaning may be translated into appropriate machine code instructions. (For a general introduction to parsing techniques cf. Foster 1970).

The strictly formal representation of modern grammar makes it particularly adaptable to machine testing. Without such rigid testing, the author of a generative grammar has great difficulty in assessing the consistency of his rules in the overall system. Also, questions of 'relative simplicity' of grammars or subsets of grammars may be settled by means of computer tests. Such a model of generative transformational grammar (as presented in Chomsky's Aspects) was designed by Joyce Friedman et al. (1971) for testing grammars of particular languages presented to the system. There exist a great number of automatic parsers of natural languages, most of which were evolved from a need in automatic translation or information retrieval (many of these are described in the works by Garvin 1966 and Hays 1967).

Incidentally, I have left the subject of machine translation completely out of the scope of this survey, as its ultimate success lies in integrating the achievements in the various fields of computational linguistics.

Semantics

I wish to discuss under this heading those aspects of language which are not purely concerned with 'surface' properties, such as distribution and structure, but with the 'interpretative' side (not used in a strictly Chomskyan sense) which in fact operates at all the three levels mentioned above.

Most interesting at this level are the already mentioned attempts at making the machine 'understand' natural language. This involves integrating

a knowledge of the rules of permissible word and morpheme combinations with semantic programs governing the meanings of words, structures, sentences and discourse. A model of language understanding must also include a simulation model of logical processes and problem-solving. There are a number of so-called 'Question-Answering' systems which are attempts at man-machine communication about a specified subject. Most of these systems have been devised by computer logicians with little or no linguistic training and may be considered as fairly 'ad hoc'. One such experiment, however, conducted at MIT by Terry Winograd (1972) I found most interesting and stimulating from a linguistic point of view. The following is a brief summary of the experiment.

The machine is supposed to be a robot with one hand and one eye whose actions are simulated on a screen. The 'world' about which the man-machine conversation revolves is a table on top of which stand a box and a number of blocks and pyramids of various sizes and colours. The vision of the robot is simulated by storing all the points on the screen in a three-dimensional vector. The 'hand' is a piece of string with a magnet which can 'pick up' objects and release them. Some elementary knowledge of the laws of physics is incorporated in the program, namely that it is not possible to pick up a block which is supporting something else without first removing the thing it is supporting. Similarly, the table has to be scanned to find out where there is room to put down a block and, if necessary, some object has to be removed before another one can be put down, and so on.

The system is characterised by the close interaction of the 'syntactic parser', the 'semantic analyser', the 'problem-solver' and the 'memory of past events'. The syntactic analysis is based on Halliday's Systemic Grammar, which was chosen because it tags semantic information onto the grammatical nodes, thus linking meaning and structure more closely. The semantic analysis is discourse-orientated and includes procedures for pronoun-referent identification. To illustrate the system, I have selected some of the utterances in the sample dialog presented in the book. The following extract shows how the computer deals with anaphoric references:

E: (experimenter) 'Grasp the pyramid'
C: (computer) I DO NOT UNDERSTAND WHICH PYRAMID YOU MEAN
                 (There are in fact three pyramids in the scene.)
E: 'Find a block which is taller than the one you are holding and put it into the box'
     (This time, C obeys the command as it is able to correctly identify 'the one' and 'it'. Logical deduction is involved in analysing 'taller than'.)

Another example involves the resolution of syntactic ambiguities. These are usually resolved with reference to the situation; if insufficient information is present, the computer asks for clarification:

E: 'Put the blue pyramid on the block in the box'
     (In the present situation the sense 'put the blue pyramid which is on the block in the box' cannot apply, so 'put the blue pyramid on the block which is in the box' is selected.)

E: 'How many things are on top of green cubes?'
C: I'M NOT SURE WHAT YOU MEAN BY 'ON TOP OF' IN THE PHRASE 'ON TOP OF THE GREEN CUBES'.
     DO YOU MEAN:
     1. DIRECTLY ON THE SURFACE
     2. ANYWHERE ON TOP OF ?

The program also incorporates some elementary learning-procedures, such as for the assimilation of new words not contained in the dictionary but defined by the experimenter in the course of the session, or even for deducing the meaning of words not previously encountered by analogy with other words (an example was 'littlest').

To those readers who remain sceptical about the 'real' relevance of such experiments in computational linguistics, I would like to say that indeed it is unlikely (but perhaps not impossible) that the computer will produce a new theory of language. However, as research in the various areas of linguistics rapidly gains in scope and extent it will soon be impossible to arrive at an integrated system without the aid of a large computer memory. The computer can at least provide a means for rigid testing of existing theories of language and at best offer a model for simulating linguistic behaviour.

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A SEMANTIC AND SYNTACTIC INVESTIGATION OF A VERBAL LEXICAL FIELD

The lexical field chosen for this investigation is that of 'making things wet', 'things becoming wet' or 'things being wet'. The words considered are from my own idiolect, as many as I would conceivably use naturally, and the descriptions of the way they behave apply to my own usage.

'Liquid Action'

From the rather lengthy list of synonyms and near-synonyms choice may depend on the sort of liquid involved. Table I shows in its first seven columns the uses of the words listed on the left. Water is obviously the most basic of all liquids and not surprisingly all the words can be used naturally in a sentence concerned with water. Poetic and metaphorical uses are indicated, as are unusual occurrences, since conversational usage is the criterion for a plus or minus. Foot-notes show some connotations which the verb acquires when found in that particular environment. This table does not presume to show conclusively the combinations of verbs with liquids, but even a brief glance will show that there is considerable restriction in choice. For instance, there is a practical and common-sense restriction in coupling paddle with oil or paint, and a semantic restriction in coupling drown with saliva. Table 2 displays the words which are most often associated with a particular liquid and whether or not they can be used with other liquids also. This can pin-point the semantic environment of the verb; i.e. we can safely say that pickle is used only for vinegar and suck only for saliva. Table 2 shows that some verbs are restricted to combinations with nouns, Table I shows that some nouns are restricted to particular verbs.

Not accounted for in the table, but nevertheless relevant to the semantic environment of the liquid would be its viscosity. For instance, one could not use treacle with sprinkle. Those liquids shown, however, do point to the principle of which this is an example.

Column eight of Table I shows that most of these verbs are transitive and some can be used intransitively as well. Again, footnotes show peculiarities or changes of meaning which occur in intransitivity.

Very often these verbs are co-ordinated with adverbs, and up and down were tested against them since these are the most common. Other adverbs which are usual in conjunction with the verbs are given in column twelve.

Column thirteen shows that some verbs carry with them an explicit connotation of action; some do not, and a few may indicate action or reception, according to use and environment. 'Action', in this context, refers to action which is probably exerted by a human. An exception is dissolve where a chemical reaction causes the energy. The difficulty of this word is explained later. Even those with only + Explicit Action may take a liquid subject:

 e.g. (1) The water rinsed the soap away.
   (2) Mrs. Jones rinsed her soapy washing.

Words which are never used with a liquid subject are: dip, dabble, submerge, immerse, sprinkle, and steep. These are particularly explicit action words, which require the actor/agent to do something to make wet, rather than the wetting involving action without a human agent. Action would appear to be requisite to all words in this lexical field of 'making wet', but as the minus elements show some words denote wetting without action,

 e.g. (3) The boy drowned.
   (4) The ointment bathed his wounds.

Simmer can only express absence of action when used with a liquid subject, as in:

        (5) The soup should simmer for five minutes.

In keeping with this, one would expect boil to behave in the same way, but action within the liquid is particularly explicit in:

        (6) The soup boiled.

and therefore it was listed as only + Explicit Action. Each case may be argued to contain elements of action or non-action, and idiolect and common usage must be the deciding factor.

Columns fourteen, fifteen and sixteen of Table I show the distinction of words for 'putting in liquid' and 'putting liquid in', thus redefining the nature of the action.

Column fourteen of Table I is self-explanatory, and shows which of these verbs may be applied to oneself. Columns fifteen and sixteen indicate the presence of an 'intentional' or 'incidental' sememe in the words. There are sixteen 'intentional' verbs, and fifteen 'incidental'; almost exactly half of each. Considering the information in the Explicit Action column, it is surprising that not all the verbs contain the 'intentional' sememe. Even some of the verbs listed earlier as being unable to take a liquid subject (and therefore more likely to take a human subject) are listed as being 'incidental' in their wetting of things.

This requires an explanation dealing with individual cases. Dip is explicitly active, but unintentional in its wetting. It refers to the act of putting something into a liquid and does not describe the thing when it is actually in the water, as does soak, for example.

Dabble is more concerned with the action of putting the object in and out of the water, and moving it around in the water than with the result of its being put in the water. Submerge, immerse and steep are most concerned with the entire object being put under the surface rather than its being wet as a result. The incidental nature of the wetting of the verbs in column sixteen will be obvious. The last column of Table I shows whether or not the verb is 'causative'. The test for this is '... cause to v' where v is the verb and where the verb by itself means this.

        e.g. (7) John drowned the kitten.

means John caused the kittens to drown.

Quantity is another feature of the difference between verbs of wetting, as shown in Table 3. The first column shows that the words for wetting in small particles are all onomatopoeic in varying degrees of effectiveness (e.g. slosh is more effective than is sprinkle). /sp/ as initial phonemes are in evidence four times, although no connection between these (or the /sl/) and small particles is obvious. One possible clue may lie in the fact that the finer spray, for instance on a garden hose, is higher in pitch than a more effluent stream. /sp/ and /sl/ are light, non-continuous sounds, reflecting the swift movement of small particles of liquid. The glottal /-inkle/ and light /-atter/ add to the onomatopoeia, as do the /sh/ endings. Hard consonants and continuous vowels are a feature of the words meaning 'to wet in large quantities'. Making 'very wet' or 'slightly wet' is a progression of the small and large quantities, but common words are found only in the 'large quantity' and 'very wet' columns, not in the other pair.

Verb - adjective - noun

Adjectives meaning 'very' or 'slightly' wet have been included in Table 3 because they mean this specifically and only. Dank has the unusual connotation of a 'reeky smell', and shares to some degree the con-

notation of 'heat' found in muggy and humid. Table 4 section D shows that some of these adjectives have no verbal equivalents. The last columns of Table 3 have already been mentioned, but the double classification of some words must be pointed out. Soak is under both headings because it is used in two slightly different ways:

(8)   The rain soaked my raincoat. (putting liquid 'on')
(9)   Soak the lentils for an hour. (putting 'in' liquid)

This refers back to the Explicit Action column of Table I. Similarly with bathe:

(10)   She bathed the wound. (putting liquid 'on')
(11)   I bathed in the sea. (putting 'in' liquid)

Slightly different is dissolve, where the choice of Mood may cause the change:

(12)   The acid dissolved the metal. ('on', declarative)
(13)   Dissolve the contents in boiling water. ('in', imperative)

Mr. C. Butler has pointed out that (12) may be rearranged to produce (12a):

(12a)   The metal dissolved in the acid.

which is both declarative and of the 'putting in liquid' type. In fact, choice of Mood does not by any means alter the 'in' or 'on' element of the verb, although as they stand, (12) and (13) show that Mood might emphasise these elements.

As can be seen from Table 4, most of these verbs take their adjective from their past participle without change, as indeed is usual for all verbal adjectives (section C). Section A shows the three verbs whose adjectives are other than their past participles. It appears that the verb in these cases has originated from the adjective and not vice-versa as is usually the case. For example, whereas soaked (adjective) means 'having been soaked', wet refers to 'being made wet', and the verb wetten means 'to make wet'. In the case of soaked the verb produces the adjective, but in the case of wet the adjective produces the verb. Section B is peculiarised by having no adjectival form of the verbs; the antithesis of section D. Following on from Table 4, Table 5 shows nominalisation of the verbs. Those in the list nominalise into a form other than a gerund (by this is meant the '-ing' addition). All these verbs also have '-ing' gerunds, in addition to, but for a different purpose from, the forms listed. Common nominalisation morphemes: '-ion', '-ence', '-ism' are represented, but the others retain their verbal forms. Admittedly, the gerunds of these verbs might more naturally serve for a noun, but the noun forms listed do appear in usage. As a rough test for nominalisation the sentence: 'The N of something in a liquid' was used, where N is the nominal, and the 'in' is interchanged with an appropriate adverb (cf. Hutchins 1971). However, the nominals identical to the verbal form do not fit into this test sentence.

Synonymy

Choice of synonym within a lexical field may well depend on context and situation, and words are arranged in Table 6 in their appropriate categories. Words not included in the rest of the investigation are included here because they apply particularly to one of these categories and they show that language has supplied itself with its own requirements.

Some verbs include others implicitly, i.e. some act as sememes for others. This 'inclusion' phenomenon is most obvious with the verb to wet, and Table 7 shows which verbs may be considered as sememes of wet, and those which may not.

Submerge includes (and is in fact interchangeable with) immerse. However, whereas drown includes submerge, it does not include immerse because that is usually explicit, intentional action. Baptise is a specialised term,

and depending on various factors (not the least ecclesiastical ones!) may include the terms sprinkle, duck, immerse and submerge. These last three may be simultaneously inclusive, in which case sprinkle would be excluded. If sprinkle is the type of baptism, then the other three are excluded. This may well be a pattern of exclusion and inclusion which other verbs follow. Boil includes simmer if the latter can be said to be describing the state of a liquid just before boiling. Simmer may therefore have two readings: one including boil (since the liquid is brought to boiling point, then allowed to simmer at a reduced heat) and the other excluding boil in that it describes a pre-boiling state.

Inclusion leads to synonymy , which allows words to be interchangeable without losing any of their sememes. It has been said that no two words are identical in meaning, but so far as usage is concerned some words are used synonymously. Syntactic factors may determine the choice between them, or it may be a question of the more suitable collocation. An example of this has been cited with regard to submerge and immerse, but this does not prevent them from being listed as synonymous. The sign ≡ is used here to denote synonyms, with arrow heads to show interchangeability. The following items from the lists may be considered synonymous:

submerge ⟨≡⟩ immerse
soak ⟨≡⟩ drench (when soak is + Implicit Action)
dampen ⟨≡⟩ moisten
rinse ⟨≡⟩ swill
sprinkle ≡ shower

Rinse and swill are synonymous in their connotations of speed and lightness of touch. Rinse meaning 'removing soap' does not apply here.

Collocation

So far the treatment of these verbs has been semantically descriptive; their syntactic properties and restrictions ought now to be considered. There are various types of strings; for the sake of brevity only active verbs are considered.

V1   i) N_1[- liquid] - V_1 - N_2 - with - N_3
            [+ animate]   [+ liquid]
      e.g. (14) John swamped the lawn with water.

V1   ii) N_1[- liquid] - V_1 - N_2 - with - N_3
            [+ animate]   [- liquid]
      e.g. (15) John washed the floor with a cloth.

      It is not possible to have the sequences:
      N_1 - V_1 - N_2 - with - N_3
      [+ liquid]   [+ liquid]
      or:
      N_1 - V_1 - N_2 - with - N_3
      [+ liquid]   [- liquid]

Therefore a class of verbs may be specified as V1 which take a [- liquid] N_1, and either [± liquid]N_3 after with and which cannot take a [+ liquid]N_1 with either [± liquid]N_3. The verb need not be causative.

Care must be taken to distinguish the string ii) from the sentence of type (16), which is the same string, but different in meaning:

VI　　iii) (16) John washed the shirt with the towels.

where with means 'together with' and not 'instrument'.

Dip, submerge, immerse, dabble and duck must take in in place of with. This may be classed as VII and be of the type (17).

VII　　i)　$N_{[-\text{ liquid}] \atop [+\text{ animate}]} - V_{11} - N_{2[-\text{ liquid}]} - in - N_{[+\text{ liquid}]}$

e.g. (17) John dipped the paintbrush in the paint.

Verbs consisting of Adj + en (moisten, dampen, wet(ten)) may stand in the string:

VIII　　$N_2 - was - Adj(+ en)$

e.g. (18) The cloth was damp.

as compared with

$N_1 - V_{111} - N_2$

e.g. (19) Mary dampened the cloth.

Of course (19a) The cloth was dampened (by Mary). is acceptable, but this is merely a normal passivisation.

These verbs are 'causatives' in that they cause N_2 to be made Adj. This refers back to the comment about wet when considering Table 4. Other verbs in the list are also causative, as column seventeen of Table I shows. Some (e.g. drench, soak) may be causative or not. An example already given demonstrates this for soak:

　　(8)　The rain soaked my raincoat. (non-causative)

　　(9)　Soak the lentils for an hour. (causative)

Admittedly, (8) was probably considered causative at one time, but modern usage would disregard any causativity. In fact, in this case, although not in all, (8) in its non-causativity corresponds to 'putting liquid on' and (9) to 'putting in liquid'. 'Intentional' wetting and 'causativity' coincide also, although as the columns of Table I show there are exceptions in water, submerge etc.

The unusual behaviour of the verb dissolve, already investigated in part, can be shown neatly by this model, in each case the verb is causative:

VIV　　i)　$N_{1[-\text{ liquid}] \atop [+\text{ animate}]} - V_{IV} - N_2 - in - N_{3[+\text{ liquid}]}$

e.g. (20) John dissolved the metal in the acid.

　　ii)　$N_{3[+\text{ liquid}]} - V_{IV} - N_{2[-\text{ liquid}]}$

e.g. (12) The acid dissolved the metal.

　　iii)　$N_{2[-\text{ liquid}]} - V_{IV} - in - N_{3[+\text{ liquid}]}$

(12a) The metal dissolved in the acid.

　　iv)　$N_{2[-\text{ liquid}]} - V_{IV[+\text{ passive}]} - {by \atop in} - N_{3[+\text{ liquid}]}$

(12b) The metal was dissolved ${by \atop in}$ the acid

In (20) V_{IV} acts like V_{11} and therefore this can be a model for a sentence using any of the list of the V_{11} column of Table 8. No V_{11}s however may be included in (12), although V_1s may.

Instructive though it is to examine these words in syntactic models, 'meaning' and 'usage' are so much features of a particular dialect or idiolect that there can be no claim to a prescriptive assessment. Certainly this investigation does not try to make this claim, but rather points to the flexibility of language which is one of its most interesting attributes.

Reference:

HUTCHINS W.J. (1971) The Generation of Syntactic Structures from a
        Semantic Base. Amsterdam: North-Holland.

TABLE 8

V_I i)	V_{IV} ii)	V_I ii)	V_{II}	V_{IV} i)	V_{III}	V_{IV} i) ii) iii) iv)
water	water		dip	moisten	dissolve
dampen	dampen		submerge	dampen	
wet	wet		immerse	wet(ten)	
swamp	swamp		dabble		
boil	sprinkle		duck		
simmer	moisten				
wash	flood (Metaphoric)				
bathe	inundate(Metaphoric)				
lave	imbue (Metaphoric)				
sprinkle	shower (Metaphoric)				
baptise					
moisten					
drown					
swill					
rinse					
drench					
soak					
irrigate					
flood					
slop					
inundate					
steep					
imbue					
saturate					
shower					

16.	1 WATER	2 RAIN	3 OIL	4 VINEGAR	5 BLOOD	6 SALIVA	7 PAINT	8 Transitivity	9 Passivity	10 UP	11 DOWN	12 Adverbs	13 Explicit Action	14 Reflexive	15 Intentional wetting	16 Incidental wetting	17 Causative
duck	✓	-	-	-	-	-	✓	+-	✓	-	-	under	+	+	+		-
saturate	✓	✓	-	✓	-	-	U	+	✓	-	-	through	+	+	+		+
shower	✓	✓	-	-	-	-	✓	-	-	-	✓	with M	+-	+	+		-

KEY

P = Poetic or hyberbolic use
M = Metaphorical use
U = Unusual, but possible use.

*1 Swilling or rinsing the mouth is usual, involving saliva, but not without water.
*2 Drowning used intransitively refers to dying by water only and has no sememe 'wetting'.
*3 Swilling used intransitively refers to action only.
*4 Drowning oneself implies suicide.

TABLE 2

WATER	PAIN	OIL	VINEGAR	BLOOD	SALIVA
✓	soak	✓	✓	✓	-
✓	drench	-	✓	-	-
✓	sodden(adj)	✓	✓	✓	✓
-	-	lubricate	-	..	✓
-	-	grease	-	-	-
-	-	oil	-	-	-
-	-	baste	✓	-	-
-	-	anoint	-	-	-
-	-	-	pickle	-	-
✓	-	-	souse	-	-
M	M	-	-	-	dribble
-	P	-	-	-	lick
-	-	-	-	-	suck

TABLE 3

small particles	large quantities	very wet	slightly wet	put in liquid	put liquid on
spray	swamp	swamp	dampen	dunk	dampen
sprinkle	inundate	inundate	moisten	immerse	moisten
spatter	drench	drench	bespatter	duck	wash
shower	flood	flood		dip	bathe
slop	drown	saturate		submerge	lubricate
slosh	irrigate			douse	oil
splash	steep			steep	grease
	imbue			souse	drench
	saturate			rinse	splash
				baptise	shower
				dabble	sprinkle
				soak	spray
		ADJECTIVES		bathe	daub
		soggy	ADJECTIVES	dissolve	soak
		sodden	muggy		bathe
		wet through	dank		dissolve
		wringing wet	humid		

TABLE 4

	VERB	ADJECTIVE	PAST PARTICIPLE
A	wetten	wet	wetted
	moisten	moist	moistened
	dampen	damp	dampened
B	paddle	–	paddled
	swish	–	swished
	slop	–	slopped
	dabble	–	dabbled
C	soak	soaked	soaked
	duck	ducked	ducked
	saturate	saturated	saturated
	irrigate	irrigated	irrigated
	imbue	imbued	imbued
	inundate	inundated	inundated
	wash	washed	washed
	lave	laved *1	laved
	dip	dipped	dipped
	baptise	baptised	baptised
	sprinkle	sprinkled	sprinkled
	drench	drenched	drenched
	submerge	submerged	submerged
	water	watered	watered
	swamp	swamped	swamped
	rinse	rinsed	rinsed
	flood	flooded	flooded
D	–	sodden	–
	–	humid	–
	–	soggy	–
	–	wringing wet	–
	–	slushy	–
	–	muggy	–
	–	dank	–

TABLE 5

NOMINALISATIONS OTHER THAN GERUNDS	
VERB	NOUN
submerge	submergance
immerse	immersion
wash	wash
rinse	rinse
irrigate	irrigation
inundate	inundation
saturate	saturation
shower	shower
flood	flood
dip	dip
duck	duck
boil	boil *2
water	water
paddle	paddle
swish	swish
slop	slop
baptise	baptism

*1 possibly laven

*2 as in bring to the boil ; not usual as an agent.

TABLE 6

CONTEXT AND SITUATION				
Informal	Formal	Cooking	Technical	Religious
slop wringing wet sodden soggy muggy paddle swish dabble drench duck dunk daub	lave bathe moisten immerse submerge imbue	baste boil simmer pickle souse douse dilute	condense liquify dissolve irrigate hydrate dilute ADJECTIVES hydroptic humorous	baptise libate anoint enbalm

TABLE 7

Includes feature 'wet' (verb)	Excludes feature 'wet'
water dampen swamp wash bathe lave sprinkle baptise moisten swill rinse drench soak irrigate flood inundate steep saturate shower	dip dabble submerge immerse dissolve boil simmer slop imbue

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STRUCTURAL AMNESIA AND THE IDEAL NATIVE SPEAKER

Studying usage

I have chosen a striking title for this examination of the school child's use of the passive, since the results of what was primarily a pedagogic exercise seem to me to provide a reasoned defence of some current issues in linguistics, psychology and philosophy. First, I hope to demonstrate how studies of language use in child and adult can lead to new hypotheses as opposed to theoretical generalisations arrived at by introspection only. At the same time, I feel I can incorporate a justification for developmental descriptivism, in the Piagetan sense, as a means of extending present theories of language acquisition beyond those parsimonious claims made for the infant's syntax, without necessarily repudiating the theory of innate ideas. Thirdly, for those who find it increasingly difficult to envisage a model of language that does not happily accommodate a communicational competence, i hope to demonstrate how appropriateness nestles deep in the bosom of the grammar, at least in one central instance.

I think it is fair to say that discussions on the child's command of the passive have reached a useful impasse. Investigations have been much influenced by transformational grammar so that a distinction has come to be drawn between the appearance of 'full' passives containing the optional agentive <BY> phrase and 'truncated' passives which contain no such phrase in their surface structure (Slobin 1968). The latter, according to rational extensions of the standard theory, are syntactically more complex since they require an additional rule deleting the optional agent. However, children below the age of eleven appear to use 'truncated' passives (in an experimental situation), much more frequently than full passives, use of which paradoxically increases with age! Superficially, at least, there would appear to be an apparent imbalance between syntactic and psychological complexity which some have attempted to resolve by suggesting either that there are two passive analyses, or that recall strategies change over time (Menyuk 1969, 1971). It is generally agreed that young school children prefer to use the active rather than the passive voice, while more broadly based studies have recorded a mounting frequency of passive constructions into mid-adolescence (Hunt 1965).

Attention has also been drawn to 'reversible' verbs, such as <to kiss> or <to meet> as a means of testing the young child's capacity to understand and re-interpret voice-relations. It has been found that subjects refuse to respond to passivisations of such verbs but consistently interpret the passive forms as their active reversals. It has also been suggested that the existence of irreversible constructions allows contrasting strategies to develop in comprehension and production that are not so dependent on grammatical interpretation but on pragmatic and semantic expectations (Herriot 1970). Elaborations of this approach have attempted to establish a link between basic linguistic capacity and a child's generalisations from experience (or perceptual strategies), through which it has been suggested such basic mechanisms are extended (Bever et al.). To summarise, one needs to pay particular attention to the passive material either cited by observers for explication, or developed for experimental purposes.

Active / Truncated Passive, Full Passive (Menyuk 1969, 1971)

(1) The man hit John. (Active)

(2) John was hit. } (Truncated Passive)
     John got hit. }

(3) * John was hit by the man. (Full Passive)

Reversible (Slobin 1968)

(4) The boy kissed the girl. (Active)
(5) The girl kissed the boy. (Active reversal)
(6) *The girl was kissed by the boy. (Full Passive)

Irreversible (Herriot 1970, Bever et al.)

(7) The professor read the book. (Active irreversible)
(8) *The book was read by the professor. (Full Passive)
(9) The girl holds the cup. (Active irreversible)
(10) *The cup is held by the girl. (Full Passive)
(11) The boy drinks the water. (Active irreversible)
(12) *The water is drunk by the boy. (Full Passive)

Producing the passive

The five 'full' passives in the above list have been marked delib-
erately by a convention very familiar to linguists to stress the most
obvious fact of many of these investigations. English-speaking children
did not respond to such cited examples as English sentences. By examining
full passives, freely produced under controlled longitudinal conditions by
a substantial number of subjects aged from six to fourteen, I was able to
confirm that there was a crucial difference between the full passives
children were prepared to use and the cited examples, and that that dif-
ference resided in the kind of agentive <BY> phrase that had been gen-
erated. Although agentive <BY> phrases have been examined in depth in
relation to transitivity (Halliday 1967, 1968) and case (Fillmore 1970),
little attention has been given to their immediate constituents; they are
known to be noun phrases preceded by the item <BY> but it has never been
suggested that there might be any special restrictions on their form other
than generally accepted grammatical constraints operating within noun
phrases. As a result, theories of the semantics of the phrase have tended
to define its predicative function, in relation to the verb, in terms of
elaborations of sub-categorisation rules or selection restrictions. How-
ever, there have been no hints by others, as far as I can discover, that
the well-formedness of the phrases might be dependent on other factors
(Fillmore 1971).

I have said that there was a crucial difference between the examples
cited by researchers and the agentive <BY> phrases generated by young
school children. It will be noticed that the former are clearly marked
by the definite article, nonplurality and the feature [plus Human]; it is
true to say I have no record of a single instance in personal encoding of
a simplex <BY> phrase of precisely this kind by child or adult, as the
following examples from the writing of school-children illustrate:-

(13) by a man and his wife and his children (7.0 years)
(14) by an old old man (7.0)
(15) by an carpenter (7.0)
(16) by warships (7.0)
(17) by a table (7.0)

The children's agentive phrases were distinguished by an astonishing
singularity or uniqueness which proscribed the appearance of a simplex
version. As a result, articles were deleted or indefinites dominated,
while the definite article was used with a delicacy and diversity a phil-
osopher would have envied. Proper names, surnames and abstract agencies
such as nationalities and institutions were popular and plurality was
employed ingeniously to preserve singularity. Agentive phrases enjoyed
conjunction, conjunction reduction and negative disjunction. The dis-

continuity of the singular terms appeared to be preserved by additional discontinuities in the course of their modification, by unrestricted relativisation (following indefinites) while other oppositions occurred, sometimes of an unexpected kind, such as emphatic reflexives.

(18) by a big museum (9.0)
(19) by the Smiths (10.0)
(20) by everybody and everything (11.0)
(21) by the R.S.P.C.A. in England (11.0)
(22) by the King, himself (12.0)
(23) by children who peel off the formica and saw into me with the carving knife (13.0)

The preceding samples are drawn from five separate occasions in which schoolchildren were presented with opportunities to encode written passive forms freely. Four of the occasions involved open-ended sentence completion material based on the two major auxiliaries which were given annually to approximately 160 boys in my own preparatory school from 1966-71. The fifth passive corpus resulted from the happy confirmation of an hypothesis based on the earlier experimental situations. Studies of adult usage of the passive (Svartvik 1966) have shown that the incidence of passive occurrences varies according to text, the highest frequency being the scientific corpus in which roughly one in three sentences proved to be in the passive voice. From evidence in the experimental corpus, I predicted that given a suitable topic for written composition, my particular subjects would produce freely written material bearing a relatively heavy passive weighting. Working from barely formed principles of a grammar of persons, I argued that the topicalisation of an inanimate participant shifted to the centre of discourse to proximate third person and then turned to first person might induce schoolchildren to select the passive voice, with all the attendant advantages of quantification and analysis. The reasonably high socio-economic status of my subjects and their single sex (male) variables which other researchers have found appear to support an interest in language form rather than content (Giglioli 1972), promised to assist the strength of the prediction, although a control group was established in a local primary school. The chosen essay subjects were 'My adventures as an old armchair/school desk/ washing machine'.

The very high frequency of occurrence of truncated passives, as compared with adult frequencies, did not support theories of a maturing passive transformation, but greater opportunities for its use due to other factors. The mean passive weighting was just over 20% at the ages of six and seven rising to 40% at the ages of twelve and thirteen. The increase in frequency was due in the main to increments in sentential length by such means as conjuction reduction, simultaneous with the co-ordination of active constructions that allowed more passives to be packed into each sentence (or T. Unit) (Hunt 1965). The agentive ⟨BY⟩ phrase was as scanty as adult frequencies would suggest although their incidence trebled after the age of eleven, indicating a useful increase in the grammatical span of attention. However, a dependent relation between passive frequency and agentive ⟨BY⟩ phrase did not develop although the co-relation between agents and the number of sentences (or T. Units) over the five occasions was unexpectedly remarkable and suggested a strong constraint $\left[\left(\frac{7}{3100}\right)\right]$ (cf. Bever et al.).

Such material provided a range of complex passive constructions that children themselves had generated :

(24) The boy was presented with a football autographed by Wolverhampton Tottenham and Arsenal footballers. (11.0)

By modelling on similar examples, rather than depending on my own linguistic intuitions to create hypothetical sentences, I was able to reconstruct a set of constructions involving optional forms other than the passive to demonstrate a general level of irreversibility in the syntax of children at the ages of six and seven, including both inversion and conversion, as compared with older children (Chomsky 1969). In the few examples listed, most of the youngest children could convert or invert sentences of type A on the simple instruction a) 'Can you say this sentence after me?' b) 'Can you turn it round?' and all passive forms converted easily. When B sentences were used as a trigger, however, subjects were unable to reverse the procedure across the whole set of sentences, and frequently produced 'reversibles' for inversions as well as conversions.

	A		B		A$^{\text{I}}$
(25)	Down the road ran the dog.	$\Longrightarrow$	The dog ran down the road.	$\Longrightarrow$	Down the road ran the dog.
(26)	Running down the road was a pink panther.	$\Longrightarrow$	A pink panther was running down the road.	$\Longrightarrow$	Running down the road was a pink panther.
(27)	The beds were made by mother.	$\Longrightarrow$	Mother made the beds.	$\Longrightarrow$	The beds were made by mother.
(28)	By the fire sat the cat.	$\Longrightarrow$	The cat sat by the fire.	$\Longrightarrow$	The fire sat by the cat. (reversed)

To summarise so far what in itself is a brief sketch:

(a) Children can produce specialist texts with as heavy a passive weighting as comparable adult material.

(b) There are limited difficulties in derivation that are not confined to passive conversions but other optional transformations as well.

(c) According to children, agentive ⟨BY⟩ phrases have to be marked by an uncompromising singularity in production and for infant comprehension.

Active and passive, children and adults

One of the effects of active/passive transforms is to redistribute the information content of a sentence; what is 'given' in one unmarked instance (theme) becomes 'new' (rheme) in the other and vice-versa. Thus the agentive ⟨BY⟩ phrase, as an adjunct in a passive construction, becomes the focus of 'new' information whereas in an active construction, in subject position, it would be thematic (Huddleston 1971). Applying a very limited interpretation of singularity as a simple marking device, the children's examples seemed to satisfy the thematic requirement in a precise way in that no agency, however true, seemed to be recoverable if it was unmarked for singularity; when subjects generated their own agentive ⟨BY⟩ phrases, the singularity condition was observed. However, in the examples rejected by other subjects, the indelicate use of the definite article by observers, (emphasizing its anaphoric role), appeared to breach the singularity condition producing a conflict of focus, so that passive forms could not be comprehended while the alternations to active grammatical reversible forms by young children might be regarded as hyper-corrections.

To advance the study, it was necessary to predict that the adult native speaker would observe the singularity condition when naturally generating agentive ⟨BY⟩ phrases. By maintaining the interpretation of the condition

as a simple filtering device for excluding a very limited class of doubleton
agents, the search could also be widened to examine the use of actor/agents
such as ⟨professor⟩ ⟨captain⟩, ⟨president⟩ which it might be argued,
could be contained within the proposed constraint since they represent
uniqueness at word level, even though they would breach phrasal singularity
by allowing ⟨BY⟩ + the + 'human'+'non-plural'as in:-

(8) *The book was read by the professor.

Three examples appeared in the 'full' passives of older children (10-13):
⟨the teacher⟩ ⟨the doctor⟩ and ⟨the speaker⟩.

A careful examination on this basis of a comprehensive record of adult
usage (cf. Quirk et al.) showed a similar level of constraint and delicacy
as among my own subjects. The examples in adult speech evidenced hesitation,
repetition and deletion which suggested strict editing and difficulty in
recoverability. An example of 'gapping' (the most extended form of con-
junction reduction) complemented the use of co-ordinated agents by children
which at the same time illustrated the observance of singularity by the
careful deployment of the plural, e.g.

(29) The Ashes were brought back by Illingworth, the Walker Cup by the
golfers.

The distribution of the meagre handful of examples that might be judged
to be in breach of the singularity constraint allowed some clarification of
its more remote applications. The language of law courts and cases involves
an interesting discourse situation in which the institutionalising of the
context of situation represents a peak of abstract unnaturalness; everybody
is in disguise. In such circumstances one could claim that the presup-
position of particularity has made a remarkable transference to create a
unique situation, with, not surprisingly, a unique register. Five of the
ten agentive ⟨BY⟩ phrases used by adults and deemed in breach of the con-
straint occurred in this context involving terms such as ⟨plaintiff⟩ or
⟨defendant⟩, surrogates in themselves for other formal identity terms such
as ⟨Mr. Bloggs⟩ or ⟨the Southern Electricity Board⟩.

(30) He was seen to do it by the defendant.
(31) ...should be paid by the husband, as I shall call him.

Institutionalised instructions were another area in which surrogates of
identity terms appeared to breach the constraint and incidentally indicated
where one might expect to find phrases of the kind ⟨by the professor⟩.

(32) ...in regulations made by the Minister
(33) ...is temporarily vacated by the patient
(34) They will be greeted by the clergy/first by the dean
(35) ...To be filled in by the supplier

Abstract topics produced quasi-breaches which it could be argued observed
the constraint. In theological discussions, the Godhead achieved the tra-
ditional and unique status of proper name; in more general discussion,
prefix and compounding appeared to confer particularity as with ⟨head-master⟩
or ⟨caretaker⟩ (schoolchildren 12.0).

(36) He was sent by the Father, he was conceived by the Spirit
(37) He has not been shepherded by the parish-priest...
(38) the definable statement that is used by the bio-chemist

The register of sports writing provided an illustration of the utility of postulating a dichotomy or inversion within the condition since a strict distinction appeared to have to be maintained between actional descriptions of particular real games and theoretical discussions of ideal players in ideal situations. In a recent lengthy comment on soccer hooliganism (Daily Telegraph, Jan. 1972), 'truncated' passives flourished. Players' names were taken, players were sent off the field, but never <by the referee> although other singular <BY> phrases were not deleted. Similarly, <captained by> appears to be preferred to <by the captain> in actional descriptions of real games, giving rein to grossly extended discontinuities:-

(39) ...were captained by H.B. Toft, Manchester University, Broughton Park, Waterloo, Lancashire and English hooker, and later a selector on leave from the R.A.F.

It was only when tactics, rules and procedures were generally, or ideally discussed, that the 'idealised' human/actor agent appeared very occasionally, and even in these instances the compounding of the terms might be judged sufficient to evoke particularity in the initiated:

(40) prevented from falling out of the scrum by the wing-forward ("Modern Prop-Forward Play" - straight - Cox 1968)

(41) headed by the vice-captain ("The Art of Coarse Captaincy" - humorous - Cox 1968)

Reality and abstraction

To explain how evidence from adult usage supplements and endorses the language behaviour of the infant and schoolchild, it becomes necessary to consider the pragmatic and semantic roles of the presupposition underlying singularity terms, which logicians have tentatively defined as the assumption of knowledge by the speaker of the hearer (Steinberg-Jakobovits 1971). Singularity is a term not limited to the expression of agents, but, in the instance of the agentive <BY> phrase in development, the nature of that knowledge on which the presupposition of uniqueness depends begins to emerge with some clarity. In that 'agency' implies cause or means, the singularity condition peculiarly reflects the uniqueness of cause and the particularity of means, so that its pragmatic role automatically 'performs' its semantic function and references to traditional distinctions become curiously redundant. The agentive <BY> phrase is not the only instance where such a duality is so happily accommodated. For example, the deletions evident in conjunction reduction also governed by not dissimilar identifying conditions at sentential level, automatically signify in one case, temporal sequence and, in another, simultaneity. 'Performative' verbs have been commented on by others, but there are equally well instances within complementation and modality where pragmatic operations 'perform' what we might call 'meanings' in an economic and simple fashion. An interpretive semanticist tacitly acknowledges this duality and it is noteworthy that a strict interpretation of the agent in standard theory i.e.:-<by someone> would automatically delete in transformation as ill-formed, * <by the boy>.

In addition, the infant and the school child demonstrate powerfully what knowledge is presupposed by the speaker of the hearer since they operate the singularity condition according to grammatical principle in a non-ad-hoc manner, long before it could be claimed they had been influenced by or had learned from their general environment. For the speaker to signal the hearer that the information in an agentive <BY> phrase will be 'new', the speaker assumes the hearer's absolute grammatical knowledge since the signification of the uniqueness of the phrase depends on the recognition of a matrix of

grammatical oppositions abstracted from this prior knowledge. By rejecting sentence (6) *The girl was kissed by the boy. the infant demonstrates not only his knowledge of the presupposition, but precise knowledge of the grammatical universals on which the oppositions projecting the presupposition depend. That the presupposition is self-embedding by virtue of its own inherent dynamism, so that presumption developmentally builds on presumption until the oppositions begin to invert, producing particularistic and ideal texts, and unnatural situations governed by surrogates, only shows how little we know about the implications and consequences of being born with grammatical blue-prints and innate ideas. The suggestion that a language acquisition device has the capacity to transform itself into a parameter of appropriateness, may appear paradoxical and unpalatable, but the course of its intermediate levels of processing and reprocessing accord satisfactorily with a Piagetan account of logical development if not Piagetan philosophy, and at the same time allow the postulation of and formulation of simple grammars. The irreversibility of conversions at the age of six and seven, and the expanding use of the agentive ⟨BY⟩ phrase at eleven on which I have commented might be accounted for within such a framework, provided pragmatics are defined as oppositional abstractions from a given universal grammar (excluding appeals to general cognition and non-linguistic criteria). This would imply a very protracted developmental course for the acquisition of a specific language and allow the postulation of a fourth conceptual level to finalise a theory of formal operations. It would also allow the predictions of the Whorf hypothesis to be nicely fulfilled and the laws of distribution to be scrupulously observed as the original absolute grammatical knowledge becomes totally expressed through the inhibitory counterings and recounterings of its oppositions.

To conclude this outline of a developmental perspective, the least happy figure to emerge from such a description is the ideal native speaker, a structural amnesiac, who can only utter hypothetical sentences in hypothetical contexts with hypothetical participants, and who is forced to deny the universal presuppositions on which his own constructed existence depends because there is simply, and properly, no further level of oppositional abstraction to make him grammatically real. As an example of peripheral entropy in communication, his interest lies in demonstrating that the finiteness of pragmatic dynamism and grammatical knowledge are one. How the real native speaker deludes himself into believing that (6) *The girl was kissed by the boy. lies within real language use, belongs more properly to a psychology of intellectuality; but it does illustrate the danger of giving centrality to such generalisations, however elegant, since this ambivalence tends to circularise the delicate helix of language in adult use and child development by trivialising some of our most abstract processes and reducing theoretical linguistics to an inevitable despairing indeterminacy.

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A CONTRASTIVE STUDY OF MODALITY IN ENGLISH, FRENCH, GERMAN AND ITALIAN

Introduction

      The grammar of English modal verbs has occupied an important place in
various reference grammars (e.g. Jespersen (1932), Zandvoort (1957), Quirk
et al. (1972)), and has been treated in several works of more restricted
scope (e.g. Joos (1964), Palmer (1965), Lebrun (1965), Ehrman (1966), Renné
(1968)), as well as in numerous articles (e.g. Diver (1964), Boyd and
Thorne (1969), Halliday (1969, 1970), König (1969, 1970), Anderson (1971),
Hakutani (1972)). However, as Anderson (1971) has remarked, "there has
generally been little attempt to provide any more than a list of modals
each with a list of 'functions' in dealing with their respective interpret-
ations, and even less interest has been shown in trying to relate a
systematic treatment of their interpretations to the variously observed
facts of their syntax."

Modality in English

The work of Halliday (1969, 1970) does, however, meet such criticisms to a large extent. Halliday's work differs in perspective from that of the other authorities cited above, in that rather than taking each modal in turn, he discusses the general classes of meaning which can be conveyed by the modals, and the realisations (both by modal verbs and by other means) which can be used to convey these meanings.

Halliday has emphasised a fact already commented on by other authors (see especially Anderson 1971), that the modals in English have a dual function. That is, the same set of modal verbs can be used to express two rather different sets of meanings. Let us consider the following examples:

(E1) You must be very careful.
(E2) You must be very careless.

The most likely interpretation of (E1) is 'You are required to be very careful', while the second would normally be interpreted as 'It is clear (certain) that you are very careless'. Halliday calls the first type of use modulation and the second modality. Modulation "expresses factual conditions on the process expressed in the clause". These conditions may be concerned with willingness, ability, permission, obligation or compulsion. Modalities, on the other hand, "represent the speaker's assessment of the probability of what he is saying, or the extent to which he regards it as self-evident". Modality, then, is concerned with the expression of the speaker's views concerning the probability of something happening or having happened. It is with modality, rather than modulation, that we are concerned here.

The account of Halliday's work given here must, for reasons of space, be very abbreviated. We shall not consider the way in which Halliday represents the various meaning choices a clause can make in the area of modality, neither shall we be able to concern ourselves with the interaction between modality and polarity. Our chief concern will be the way in which Halliday divides up the probability range, and the realisations he proposes for each segment of that range.

The probability range is ultimately divided by Halliday into four segments, which he labels 'possible', 'probable', 'virtually certain' and 'certain'. A word of explanation, and perhaps of criticism, seems appropriate here. By 'certain', Halliday means the degree of probability expressed in a sentence such as:

(E3) John must have arrived (by now).

and by 'virtually certain' the degree of probability expressed in:

(E4) John should   ) have arrived (by now).
           ought to)

It is clear, however, that if the speaker were truly certain that John had arrived, he would say·

(E5) John has arrived.

We should do better, therefore, to regard all Halliday's categories as 'uncertain' (i.e. less than 100% certain), and to find alternative labels for 'certain' and 'virtually certain'. From now on, we shall use 'extremely probable' for Halliday's 'certain' category, and 'very probable' for 'virtually certain'.

In Halliday's scheme, any of these modality choices may be either 'neutral', or 'modified' by means of 'undertone' or 'overtone'. The 'undertone' modification represents a tentative assessment of probability, or else one presumed by deduction. The difference between 'neutral' and 'undertone' is illustrated by the following pair of examples:

(E6) <u>John may have arrived (by now)</u>.
(E7) <u>John might have arrived (by now)</u>.

The use of 'overtone' is exemplified by (E8), which we may contrast with (E6):

(E8) <u>John may have arrived (by now)</u> (though I consider it unlikely).

Here, the modality <u>may</u> bears stress, and expresses a possibility contrasted with some degree of reservation. It is important to note that overtone can completely change the degree of probability indicated, in the sense that its effect is often to indicate doubt about the probability of occurrence, in the face of circumstances which suggest that the probability should be much higher. This is particularly striking in the case of the verbal realisations should/ought to:

(E4) John <u>should</u> } <u>have arrived (by now)</u>. (=it is very probable)
          <u>ought to</u> }

(E9) John <u>should</u> } <u>have arrived (by now)</u>.
          <u>ought to</u> }

            (= it in fact seems doubtful that he has arrived,
            although the circumstances would lead us to believe
            that it is highly probable).

In a classification where the basic principle is the degree of probability, it thus seems inappropriate to classify examples such as (E9) under 'very probable/overtone'. This, then, is one area where Halliday's scheme is open to argument.

Let us now consider in more detail the various realisations available for the expression of our categories of meaning. The following types of realisation are discussed by Halliday:

(a)   modal verb (<u>may, can, will, must, might, could, would, ought to, should, need</u>).
(b)   modal adverb (adjunct) (<u>perhaps, possibly, probably</u>, etc.)
(c)   modal verb + modal adverb
(d)   modal adjective in impersonal matrix clause   (<u>it is x that...;</u>
        x = <u>possible, probable, certain</u>, etc.)
(e)   modal noun (<u>possibility, probability, certainty</u>, etc.)
(f)   modal adjective in personal matrix clause   (<u>I am x that...;</u>
        x = <u>sure, certain</u>, etc.)

It is clear that, although not all of the above realisations are available for the expression of all degrees of probability, a wide range of subtly differing degrees of likelihood can be expressed in English. It is possible, for instance, that native speakers of English feel that double realisation of a modality (as in (c) above), changes the degree of probability expressed. If this is so, there is a strong case for refining Halliday's set of meaning choices, to include intermediate degrees, realisable by modal verb plus adjunct.

Before leaving this rather sketchy account of modality in English, we should perhaps mention the interaction of modality with tense, since this will turn up again in our discussion of other European languages. As Halliday points out, modalities themselves are tenseless, but combine freely with any tense (and aspect) of the main verb. This is to be expected, since a modality expresses a present assessment of probability about an event or state which can be past, present or future with respect to the moment of utterance. When a modality is realised other than by a modal verb, _any_ tense of the main verb is possible. A selection of the large range of possibilities is given below:

(EIO)   John had possibly arrived (by some time in the past).
(EII)   John has possibly arrived (by now).
(EI2)   John is possibly arriving (at this moment).
(EI3)   John will possibly arrive (at some time in the future).
(EI4)   John will possibly have arrived (by some time in the future).

When a modality is realised by a modal verb, however, only the non-finite forms of the main verb are available, so that corresponding to (EIO), (EII) and (EI4) we have:

(EI5)   John may have arrived.

corresponding to (EI2), we have:

(EI6)   John may be arriving.

and corresponding to (EI3), we have:

(EI7)   John may arrive.

Other more complex forms with _going to_ are, of course, also possible.

Modality in German

We shall now go on to discuss the modality options of German, whose relationship to English is, of course, closer than that of the Romance languages. We shall attempt to find out whether the language makes the same kinds of meaning distinction as English, and whether the types of realisation available are similar or not. First we shall look at what various sources say about the uses of individual verbal and adverbial forms to express what the Germans normally term 'Vermutung'. At the top end of the probability scale there is a good measure of agreement among various sources. Schulz and Griesbach (1960) say that _müssen_ is used to express "die Überzeugung, die der Sprecher nach einiger Überlegung gewonnen hat". Buscha, Heinrich and Zoch (1971), in a book devoted to the German modals, equate _müssen_ with _bestimmt_, so that sentences (GI) and (G2) are regarded as equivalent.

(GI)   Er muss krank sein.
(G2)   Er ist bestimmt krank.

Collinson (1968) states that _müssen_ is used for "a necessary deduction or inference", and Hammer (1971) discusses the "logical deduction" use. We can safely say, then, that German, like English, recognises a category of 'extremely probable'. The verbal realisation _muss_ (or, in the plural, _müssen_) corresponds to English _must_, and the adverb _bestimmt_ (also _gewiss_, _sicher(lich)_, _zweifellos_, etc.) to the English adverb _certainly_ (_without doubt_, etc.) There is no mention, in the sources quoted, of the use of the past subjunctive form _müsste(n)_ to express probability.

When we look at the accounts given of the uses of the other modals to express probability, it appears that dürfen is the next in descending order of probability. However, this use seems to be restricted to the past subjunctive form dürfte(n). (The indicative darf can be used in combination with a negative, but this is outside the scope of our present discussion). Schulz and Griesbach state that dürfte(n) is used to express "die vorsichtige Vermutung". Collinson speaks of "a polite and cautious expression of opinion when the speaker is fairly sure of his ground". These statements lead us to think that dürfte(n) might be more or less equivalent to English should/ought to. Buscha et al., however, seem to place dürfte(n) a little lower down the scale, by equating it with wahrscheinlich, and Johnson (1971) translates this modal as may well, probably. Perhaps, then, our best estimate is that dürfte(n) corresponds approximately to 'very probable'.

Something close to the English 'probable' category is seen in the use of the German future tense, often supported by an adverb such as wohl or wahrscheinlich, as in:

(G3) Er wird wohl schon zu Hause sein.

This is directly parallel to the English construction with will probably.

If we now attempt to go one step further down the probability scale, the position becomes even less clear. Schulz and Griesbach suggest that the indicative of können can be used to express "die ziemlich sichere Vermutung", and give the following examples:

(G4) Mein Freund kann heute kommen. (= aus bestimmten Gründen glaube ich, dass er heute kommt.)
(G5) Er kann Deutsch gesprochen haben.

Stopp (1960) gives a similar example:

(G6) Er kann es getan haben.

and translates it as may have done, which in our scheme would qualify as a possibility modality, rather than the 'relatively certain supposition' proposed by Schulz and Griesbach. Johnson translates (G7) using may well be, and (G8) using may be, suggesting that in order to attain the status of relatively certain supposition kann may need adverbial reinforcement.

(G7) Das kann schon sein.
(G8) Das kann sein.

The past subjunctive form, könnte(n), is also used to express a degree of probability. Schulz and Griesbach state that könnte(n) indicates a lower degree of probability than the indicative form, and give as examples the subjunctive equivalents of (G4) and (G5). Buscha et al. state that the degree of probability expressed by können (presumably in either indicative or subjunctive forms) is lower than that expressed by dürfen. These authors equate könnte(n) with möglicherweise. Collinson, giving (G9) as an example, says that the modal here carries about a 50:50 chance.

(G9) Das könnte der Fall sein.

Johnson translates (G10) using might or quite possible.

(G10) Ich könnte es getan haben.

The indicative of mögen (mag / mögen) is regarded by Schulz and Griesbach as equivalent to möglich, in such sentences as:

(G11) Er mag jetzt in Berlin sein.
(G12) Das mag sein.

Buscha et al. state that mag is equivalent to vielleicht, and is only used in the indicative with this meaning. Collinson, however, asserts that the subjunctive form möchte(n) can be used to express possibility, although this "sounds bookish and pedantic in North German speech". Hammer maintains that möchte "often conveys a hesitant or polite doubt". Johnson regards mag as equivalent to may, but suggests that (G12) implies a contrast with some degree of doubt or reservation. Thus the concensus of opinion leads us to regard mögen as indicating 'possible', although Stopp gives the equivalent as may or probably.

The conclusions which emerge from this discussion are by no means clear cut. At the two ends of the scale, there is a considerable degree of agreement among our sources, and a large overlap between German and English categories. In the middle of the probability range the disagreement among sources makes it difficult to say whether the two languages divide up the scale in an identical way. It is not surprising that as the chances approach 50:50 the distinctions become less and less easy to draw. My own feeling is that native speakers of a particular language may differ quite widely in what exactly they mean by terms such as 'possible' and 'probable', or their equivalents in the language concerned. Mere reference to grammars and dictionaries will not give us the kind of information we need to support this view: it is clearly necessary to investigate the matter empirically, for example by presenting a series of modalities and asking native informants to give a quantitative assessment of the corresponding probabilities.

In an attempt to discover how degree of probability is actually expressed by German native speakers, I presented to six such people (who were fluent speakers of English) a series of English sentences, with a request to translate these into German, preserving as accurately as possible the degree of probability expressed in the English sentence, and giving alternative translations where appropriate. The sentences were as follows:

John must certainly have arrived by now.
John has certainly arrived by now.
John must have arrived by now.
John should certainly have arrived by now.
John should surely have arrived by now.
John has surely arrived by now.
John should have arrived by now.
John will probably have arrived by now.
John has probably arrived by now.
John will have arrived by now.
John may possibly have arrived by now.
John has possibly arrived by now.
John may have arrived by now.
John might possibly have arrived by now.
John might have arrived by now.

Such an experiment clearly has a number of flaws. The number of informants is far too small for any statistically valid conclusions to be drawn, from these data alone, about the expression of modality in German. The scheme assumes that the informants are sufficiently fluent in English to be able to distinguish fine shades of meaning in the English sentences.

It would clearly be desirable to provide more context with each sentence. Also, since the English realisations used were modal verbs and adverbs, these realisations tended to be used in the German translations, so that little information could be gained about adjectival or nominal realisations. Despite these shortcomings, enough information was made available to show that a more rigorous and larger scale survey would prove very interesting.

The modal verb realisations used by the informants are given in Table I, together with the adverbs which were used, by at least one informant, in association with each modal verb, or as an equivalent. The meanings of the adverbs can thus be regarded as overlapping, if not coinciding exactly with, those of the modal verbs. Also given in Table I is a categorisation of the original English sentences in terms of distance along the probability range, the 'just possible' category being equivalent to Halliday's 'possible: undertone'.

Several interesting points emerge when we compare Table I with the overall picture gained from reference grammars. Firstly, the past sub-junctive forms of müssen and sollen were used at a level of probability corresponding to that also realised by dürfte. Secondly, a wider range of adverbial expressions was used than the relatively narrow selection offered in textbooks. Thirdly, the adverb wohl appears to be a rather general indicator of expression of probability, since it was used at all levels of the probability range.

TABLE I

VERBAL AND ADVERBIAL REALISATIONS OF MODALITY IN GERMAN

DEGREE OF PROBABILITY	MODAL VERB(S)	COMPATIBLE ADVERB(S)
Extremely probable	müssen (indic.)	sicher(lich) bestimmt
Very probable	sollen ⎱ dürfen ⎰ (subj.) müssen ⎰	zweifellos gewiss eigentlich wohl
Probable	werden used	wahrscheinlich wohl
Possible	können ⎱ mögen ⎰ (indic.)	vielleicht möglicherweise wohl
Just possible	können (subj.)	vielleicht möglicherweise eventuell unter Umständen wohl

So far we have considered only verbal and adverbial realisations of modality in German. Adjectival and (to a lesser extent) nominal realisations are, however, available, as in English. Indeed, Lerot (1969) has presented a transformational framework for the generation of the following

sentences, all considered synonymous, from a single deep structure specification:

(G13) Es ist möglich, dass der Briefträger krank gewesen ist.
(G14) Der Briefträger kann krank gewesen sein.
(G15) Der Briefträger ist möglicherweise krank gewesen.

Unfortunately, Lerot does not go on to discuss equivalences in other parts of the probability range. It is certain, however, that adjectives expressing possibility, probability and extreme probability can be inserted into a frame exactly parallel to the English it is + Adj. + that, since in addition to (G13) we have:

(G16) Es ist wahrscheinlich, dass der Briefträger krank gewesen ist.
(G17) Es ist sicher, dass der Briefträger krank gewesen ist.

The availability of nominal realisations is exemplified by:

(G18) Es besteht die Möglichkeit, dass der Briefträger krank gewesen ist.

Modality in French and Italian

We shall discuss these two languages together, since it will turn out that their modality options are very similar. It must be said straight away that very little concerning modality seems to be available in the literature. Even the standard reference grammars of French such as Wagner and Pinchon (1962) and Grévisse (1969) have very little indeed to say about ways of expressing degree of probability. Unfortunately, most grammars of the Romance languages retain their preoccupation with parts of speech, phonology and morphology, often to the almost total exclusion of functional syntax. A notable exception to this generalisation is the work of Brunot (1953), which deals with categories of meaning and ways of expressing them, and devotes several pages to the description of various ways of expressing probability, doubt, etc., including most of those to be discussed in what follows. Even the more recent descriptions, such as Gross (1968), Dubois and Dubois-Charlier (1970), and Agard and di Pietro (1965) devote only a fraction of their time to modality, and even then in a way which emphasises the contribution of verbal realisations. Our discussion will, therefore, not be massively supported by reference to the literature, but will be largely the result of consulting major dictionaries, talking to native and fluent non-native speakers of French and Italian, and asking five native French speakers and two native Italian speakers to translate into their mother tongue the set of English sentences already discussed with respect to German.

The most striking point about French and Italian, when compared with English and German, is that they each possess only two modal verbs concerned with modality: French devoir and pouvoir, Italian dovere and potere. This contrasts strongly with the range of modals available in English and German. This feature of our two Romance languages suggests that the modal verb realisations of modality may be somewhat restricted in scope. We might expect, then, either that the modality distinctions themselves are less subtle than in the Germanic languages, or that the lack of verbal realisation is compensated for in some other way.

Let us first look at what can be expressed simply by means of the modal verbs which, as Dubois and Dubois-Charlier state, "ont d'étroits rapports avec les adverbes de modalisation, comme peut-être, sans doute, vraiment, assurément, etc., qui indiquent que le sujet prend plus ou moins à son compte sa propre assertion". Examples (F1) and (F2) from the Harrap

Shorter French and English Dictionary, and (F3) and (F4) from Le Robert, show French modals being used as the equivalent of 'neutral' modals in English, and also indicate one aspect of the interaction of modality with tense.

(F1) La porte a pu se fermer toute seule.   }
(F2) La porte peut s'être fermée toute seule. } (= may have)

(F3) Il a dû se tromper.   }
(F4) Il doit s'être trompé. } (= must have)

We may note here, in passing, that, contrary to what is sometimes taught, the English 'present modal + perfect infinitive' construction can be translated into the same type of construction in French, as well as into the 'perfect modal + present infinitive' construction. This was brought out quite clearly in the translations of English modalities supplied by my informants, 4 out of 5 giving the 'present modal + perfect infinitive' form, often in addition to the alternative construction.

        Italian can also use modal verbs to express may and must, as shown in (11) and (12).

(11) Giovanni può essere arrivato. (= may have)
(12) Deve avere saputo. (= must have)

As seen in these examples, Italian normally uses the 'present modal + perfect infinitive' construction for a modality attached to a past event. One of my native informants, however, gave the 'perfect modal + present infinitive' construction as an alternative.

        Degrees of probability which can be expressed in English by the use of 'modified' forms of modal verbs can be realised in French and Italian by the conditional forms of the modal verbs.

(F5) Jean aurait pu arriver.   }
(F6) Jean pourrait être arrivé.   } (= might have)

(F7) Jean aurait dû arriver.   }
(F8) Jean devrait être arrivé.   } (= should have, ought to have)

(13) Potrebbe aver smarrito la strada. (= might have)
(14) Dovrebbe essere arrivato. (= should have, ought to have)

Examples of both of the types of construction illustrated by (F5) and (F7) on the one hand and (F6) and (F8) on the other, occurred in the translations offered by the five native French speakers.

        Before leaving verbal realisations of modality, we should mention the common use of il se peut que + subjunctive in French, and può darsi che + subjunctive in Italian, to express possibility:

(F9) Il se peut qu'il soit coupable. (= may)
(15) Può darsi che egli sappia. (= may)

        Let us now go on to consider other realisations of modalities. Both French and Italian are fairly rich in adverbial and adjectival realisations. The adjectival forms can be used in an impersonal matrix clause, as in English and German.

(F10) Il est possible que Jean soit arrivé.
(16) È possibile che Giovanni sia arrivato.

The adverbial forms, like those of the Germanic languages, can be used either alone or in combination with modal verbs.

(FII)   Jean est probablement arrivé.   (= has probably)
(FI2)   Jean aurait certainement dû arriver.   (= should certainly have)
(I7)   Giovanni è probabilmente arrivato.   (= has probably)
(I8)   Forse Giovanni potrebbe essere arrivato.   (= might perhaps have)

It was noticeable that the native French informants tended to avoid double realisation when translating sentences where an English modality was expressed both verbally and adverbially. This was particularly noticeable at the lower end of the probability scale.

One noteworthy feature is the absence, from French and Italian modality realisations, of adverbs derived from possible and possibile. The adverb possiblement does not exist in French, although one might have expected analogical pressures to favour its development. Possibilmente does exist in Italian, but is normally used to mean 'if possible' rather than 'possibly'. The adverbs peut-être and forse thus have to do double duty for English perhaps and possibly. Note that when in initial position these two adverbs can be followed by que (French) or che (Italian).

Note also that, as in English or German, modal adverbs can be used with the future or future perfect, as in:

(FI3)   Jean sera probablement arrivé.   (= will probably have)
(I9)   Giovanni sarà probabilmente arrivato.   (= will probably have)

The verbal, adverbial and adjectival realisations of modality in French and Italian are summarised in Table 2.

Nominal realisations of modalities are seen in examples such as:

(FI4)   J'ai la certitude qu'il viendra.
(I10)   Con ogni probabilità, verrà domani.

It is possible in French and Italian, as indeed in English and German, to introduce even subtler shades of distinction by using adverbs of degree (French très, presque, peu, etc.; Italian molto, quasi, poco, etc.) to modify modal adjectives or adverbs. The French system for the verbal expression of modality also has the option of reinforcement by bien, corresponding to English well.

(FI5)   Il se peut bien que Jean soit arrivé.   (= may well have)

Conclusion

Finally, let us attempt to draw together the various strands of this discussion of modality in our four chosen European languages. All four languages possess mechanisms for making distinctions along a scale of probability. All appear to divide the scale into roughly the same major segments: extremely probable, very probable, probable, possible, just possible. These equivalences across languages are seen most clearly in the adjectival and adverbial realisations. It is in the verbal means of realisation that the languages differ most: English and German use a wider range of modals than French and Italian. All four languages have 'neutral' and 'modified' forms of the modal verbs, the past subjunctive

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being used in this way in German, the conditional in French and Italian. Whereas the two modals of French and Italian both occur in 'neutral' and 'modified' forms, some of the German modals are used to express modality only in the 'modified' form. All four languages can express subtle shades of meaning by using adverbs of degree to modify modal adjectives and adverbs.

The point which perhaps emerges most clearly from our discussion is that an enormous amount of work needs to be done on the description of modality options in all these languages. It is my view that research in this area, as in many others, should be corpus-based. What we need is a detailed survey of modality actually in use in the language of Englishmen, Frenchmen, Germans and Italians. The results of such a study would not just be of theoretical interest. The assessment of probability is an important activity in our everyday lives, and we quite often feel the need to verbalise it. Modality realisations should, therefore, play a fairly important part in syllabuses for foreign language teaching. We should surely be in a better position to practise what we preach if we had reliable information about the ways available for expressing modality, and the ways in which the favoured realisations vary with situational features. A plea which might just possibly be taken up as the term 'communicative competence' becomes more and more fashionable......

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TABLE 2

VERBAL, ADVERBIAL AND ADJECTIVAL REALISATIONS OF MODALITY IN FRENCH AND ITALIAN

DEGREE OF PROBABILITY	FRENCH			ITALIAN		
	MODAL VERB	MODAL ADVERB(S)	MODAL ADJECTIVE(S)	MODAL VERB	MODAL ADVERB(S)	MODAL ADJECTIVE(S)
Extremely probable	devoir	certainement	certain	dovere	certamente	certo
Very probable	devoir (conditional)	assurément sûrement	sûr	dovere (conditional)	sicuramente	sicuro
Probable	[être used]	probablement vraisemblablement	probable vraisemblable	[essere used]	probabilmente verosimilmente	probabile verosimile
Possible	pouvoir*	peut-être	possible	potere**	forse	possibile
Just possible	pouvoir* (conditional)			potere**		

* Includes <u>se pouvoir</u>   ** Includes <u>potere darsi</u>

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