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The remainder of the present book is divided into two large sections. The first deals with the levels of language and the second with areas and applications of linguistics. The reader may rightly ask why this division has been made and what justification there is for it. The essential difference between levels of language and areas of linguistics is that the latter refer to the way in which the discipline of linguistics is divided and the former to the way language itself is organised and hence analysed by linguists. In the present section the levels of language – such as morphology or semantics – are examined. When readers have worked their way through these chapters they will be equipped with the background knowledge to tackle the areas and applications.

It is common procedure to treat the various levels of language separately (this is how they are treated in textbooks on linguistics, including this one). This has the tutorial advantage that one can deal with them concisely and neatly in separate sittings of a course. However, one should emphasise that the division is not something people are usually aware of when speaking. Because of this they do not always expect language to be divided into levels in linguistics. Arguments in favour of the psychological reality of the different levels can be put forward, for example by showing that the rules of phonology are quite separate from those of syntax despite the interface which exists between the two levels. These matters will be touched on presently.

Object of study	Name of field	Size of unit
Language use	Pragmatics	
Meaning	Semantics	
Sentences, clauses	Syntax	Largest
Words, forms	Morphology	
Classified sounds	Phonology	
All human sounds	Phonetics	Smallest á

Bottom-up approach to linguistic analysis

1) **Phonetics, Phonology** This is the level of sounds. One must distinguish here the set of possible human sounds, which constitutes the area of *phonetics* proper, and the set of system sounds used in a given human language, which constitutes the area of *phonology*. Phonology is concerned with classifying the sounds of language and with saying how the subset used in a particular language is utilised, for instance what distinctions in meaning can be made on the basis of what sounds.

2) **Morphology** This is the level of words and endings, to put it in simplified terms. It is what one normally understands by grammar (along with syntax). The term *morphology* refers to the analysis of minimal forms in language which are, however, themselves comprised of sounds and which are used to construct

words which have either a grammatical or a lexical function.

Lexicology is concerned with the study of the lexicon from a formal point of view and is thus closely linked to (derivational) morphology.

3) **Syntax** This is the level of sentences. It is concerned with the meaning of words in combination with each other to form phrases or sentences. In particular it involves differences in meaning arrived at by changes in word order, the addition or subtraction of words from sentences or changes in the form of sentences. It furthermore deals with the relatedness of different sentence types and with the analysis of ambiguous sentences.

Language typology attempts to classify languages according to high-order principles of morphology and syntax and to make sets of generalisations across different languages irrespective of their genetic affiliations, i.e. of what language family they belong to.

4) **Semantics** This is the area of meaning. It might be thought that semantics is covered by the areas of morphology and syntax, but it is quickly seen that this level needs to be studied on its own to have a proper perspective on meaning in language. Here one touches, however, on practically every other level of language as well as there exists lexical, grammatical, sentence and utterance meaning.

5) **Pragmatics** The concern here is with the use of language in specific situations. The meaning of sentences need not be the same in an abstract form and in practical use. In the latter case one speaks of utterance meaning. The area of pragmatics relies strongly for its analyses on the notion of speech act which is concerned with the actual performance of language. This involves the notion of proposition – roughly the content of a sentence – and the intent and effect of an utterance.

1 Phonetics and phonology

The level which concerns itself with the smallest units of language is phonetics. Phonology on the other hand is the functional classification of the sounds of a particular language. It is the system of sounds by means of which meanings are differentiated in a language and which serve as the building blocks for the higher linguistic levels, e.g. morphology.

Phonetics is the study of human sounds in general without saying what function which sounds may have in a particular language. The term ‘phonetics’ is, however, often used with reference to one language when the emphasis is on the pronunciation of this language. For instance, a book on *The phonetics of Irish* would be about how to pronounce Irish correctly and not necessarily about the functions which the sounds may have in the phonological system of the language.

It is customary to divide the field of phonetics into three branches as follows.

- | | | |
|----|-------------------------------|--------------------------|
| 1) | <i>articulatory phonetics</i> | (emission of sounds) |
| 2) | <i>acoustic phonetics</i> | (transmission of sounds) |
| 3) | <i>auditive phonetics</i> | (reception of sounds) |

In any language there will be sounds which are used to differentiate meaning and those which do not serve this function. To cope with this situation descriptively one needs three terms to start with.

Phone This is the smallest unit of human sound which is recognisable but not classified. The delimiters used are square brackets: []. Examples: [p], [i:], [t] all three of which are found in *peat*. Phones are unclassified in that nothing is said of their function in the sound system of a language. They are thus different from allophones (see next paragraph but one).

Phoneme The smallest unit of language which distinguishes meaning – the organisational unit of phonology – is termed a phoneme. The brackets used are slashes: / /. Examples from English are: /k/, /u:/, /l/, as seen in the word *cool* /ku:l/. Both consonants and vowels are phonemes, for instance /i:/, /aɪ/, /u:/, /aʊ/ are phonemes in English and can be seen in *beat*, *bite*, *boot*, *bout* respectively. The distribution of phonemes in English is fairly regular (see consonant and vowel charts below), the consonants tend to come in pairs of voiced and voiceless members and the vowels in sets of long and short vowels.

Phonemes in one language are not necessarily phonemes in another. For instance, there is no difference in status between a single, flap [ɾ] and a rolled

[r] in English (the sounds in American pronunciations of *writer*, with [-r-], and in a Scottish pronunciation of *roll*, with [r-]). But in Spanish these are used to distinguish different words, e.g. *pero* [pero] ‘but’, *perro* [pero] ‘dog’. In English a dark [ɾ] and a clear [l] are just variants determined by their position in a syllable: the clear [l] coming at the beginning as in *lead* [li:d] and the dark [ɾ] coming at the end as in *deal* [di:ɾ]. But in other languages (Russian, Irish, etc.) these sounds can be phonemes, compare Irish *luí* /li:/ [ɿ:] ‘lying’ (with a dark *l*) and *lí* /li:/ ‘complexion’ (with a clear *l*).

It is possible to distinguish phonemes not just in the way they are pronounced but also in their relative length. If one takes vowels in English as an example it is obvious that word pairs like *beat* and *bit* or *peat* and *pit* are distinguished by the first item having a long vowel and the second a short vowel. In southern British English many long vowels have become diphthongs (vowels pronounced with a movement of the tongue during their articulation) so that the relationship between long and short vowels is no longer as obvious as in other varieties. For many varieties of American English (and Irish English) the chief difference between the vowels in *bed* and *bade* is one of length, i.e. [bed] versus [be:d].

Length may also be a characteristic of consonants. Such consonants are termed *geminate*s (from Latin *gemini* ‘twin’). Geminates do not occur in English, but many European languages, such as Italian, Swedish or Finnish have both long and short consonants. For instance, in Italian *bella* /bella/ ‘beautiful’ the /l/ is long, and must be pronounced longer than the /l/ in a word like *sole* /sole/ ‘sun’. Long consonants are indicated in transcription by doubling the consonant in question. Vowel length is shown by placing a length mark after the relevant vowel, e.g. *see* /si:/.

Allophone This term refers to the realisation of a phoneme. Bear in mind the phoneme is a unit in the sound system of a language. This means that it is an abstract unit. For instance, one can talk about ‘/l/ in English’ without referring to either of the two forms [l], [ɾ] which it can take (the bracketing used for allophones is similar to that for phones: [], square brackets). What one is then doing is talking about the phoneme, the abstract unit which is part of the sound system of English. In actual speech, various *l*-sounds occur. These are realisations of the phoneme /l/. Those at the beginning of a word with turn up as [l] and those at the end as [ɾ]. What one can now say is that [l] and [ɾ] are non-distinctive realisation of a phoneme. Why non-distinctive? Because the different *l*’s do not realise a difference in meaning. There are no two words in English (see *Minimal pairs* below) which are distinguished solely by a contrast of [l] versus [ɾ]. One could argue that this is in theory impossible in English as the [l] and [ɾ] cannot occur in the same position in a word. This is

true, the allophones are in *complementary distribution* because cannot occur in the same position in a syllable. But even those sounds which are in *free variation*, for instance the different forms of /r/ in English, cannot form the basis for a distinction in meaning.

Reasons for allophones There are various reasons why different allophones of a phoneme may exist. For instance, the two types of /l/ in English are determined by syllable position (in RP, not necessarily in other varieties), as discussed above. Another reason for different allophones may be the nature of surrounding sounds. In German, for example, the distribution of [x] and [ç] depends on the preceding vowel. The back variant occurs after low and back vowels, the front one after front vowels: *flach* [flax] ‘flat’, *doch* [dɔx] ‘still’; *ich* [ɪç] ‘I’, *Pech* [peç] ‘tar; bad luck’. In French there is no systemic distinction between long and short vowels. However, long vowels occur as allophones before /r/ as one can see in a word pair like *soi* [swa] ‘be-SUBJUNCTIVE’ and *soir* [swa:r] ‘evening’. In English all voiceless stops are aspirated (spoken with a small puff of air at the end), e.g. *top* [tʰɒp] but when they follow an /s/ this is not the case, e.g. *stop* [stɒp] (try saying this word very slowly and you will realise that there is no puff of air after the [t]).

Procedures for determining a phoneme In the majority of cases it is clear what phonemes are, /p/ and /t/ or /s/ and /z/ are clear instances in English. There are however borderline cases. Consider the case of /h/ and /ŋ/ as in *hat* [hæt] and *sing* [sɪŋ]. The former does not occur in syllable-final position and the latter only occurs in syllable-final position, i.e. [ŋæt] and [sɪh] are impossible sound sequences in English. So one could imagine that they are allophones of the same phoneme in complementary distribution, like [l] and [ɫ]. However, the sounds are so phonetically dissimilar that it would be nonsensical to consider them as two realisations of the same phoneme.

Another criterion for distinguishing phonemes involves possible contrast. The two pronunciations [wɔ:ʔə] (with a glottal stop, a ‘catch in the throat’) and [wɔ:tə] for *water* in southern British English does not involve any contrast in meaning so the two sound [ʔ] and [t] are simply allophones in free variation and not independent phonemes.

Not all phonemes in a language have the same functional load. For instance, the difference between /s/ and /z/ or /f/ and /v/, i.e. the distinction between voiceless and voiced sounds, is essential to the language as the many minimal pairs prove, e.g. *sue* /su:/ : *zoo* /zu:/, *feel* /fi:l/ : *veal* /vi:l/. However, the number of words which are distinguished by a voiceless ambidental fricative and a voiced ambidental fricative are few and far between: in initial position the only word pair is *thy* [ðaɪ] and *thigh* [θaɪ]. In final position there are a few

more with pairs like *teeth* [ti:θ] and *teethe* [ti:ð]. The reason why the two sounds /θ/ and /ð/ have not collapsed to a single one in the history of English is probably because the distinction in voice is so central to the phonology of the language.

Structural considerations Another instance where one may have difficulties determining phonemes is where one is dealing with more than one sound. Clusters of consonants may exist in different languages on a phonetic level but have a different status in each. For example, in English and German the sound sequence /ts/ is found. In English, however, it really occurs only when an inflectional ending is added to a word as in *cat* plus *-s*. This means that there is always a morpheme boundary between the /t/ and the /s/. In German, however, one has /ts/ as part of lexical stems as in *Zeit* /tsaɪt/ ‘time’ and *Putz* /pʊts/ ‘plaster’. Hence one can analyse /ts/ for German as an indivisible cluster, i.e. as a single phoneme.

The existence of consonant clusters in lexical stems is the key structural fact which justifies their analysis as phonemic affricates, i.e. as units which consist of a stop followed by a fricative. This applies to English in other instances, such as /tʃ/ and /dʒ/, which are found in words like *church* [tʃɜ:tʃ] and *judge* [dʒʌdʒ] and which do not depend on a morphological inflection as was the case with /ts/ in *cats*.

Minimal pairs It was said above that the phoneme is the smallest unit of language which distinguishes meaning. This definition implies that one can find sets of words which are differentiated only by the sounds in a single slot. Any such set of words is called a minimal pair as the words in question are minimally different on the sound level. This principle applies to all languages as each language avail of the contrasts which can be constructed using the distinctive sounds of that language. Pairs like *stop* /stɒp/ vs. *step* /step/ or *railing* /reɪlɪŋ/ vs. *sailing* /seɪlɪŋ/ illustrate the principle in English as do *Kunst* /kʊnst/ ‘art’ and *Gunst* /ɡʊnst/ ‘favour’ in German, *zub* /zub/ ‘tooth’ vs. *sup* /sup/ ‘soup’ in Russian, *fiach* /fiəx/ ‘hunt’ vs. *liach* /liəx/ ‘calamity’ in Irish.

Phonemes are sound units and independent of letters. This is seen especially clearly in those cases where several letters can be used to represent one phoneme in writing. For example, both English and Irish are notorious for this as many letters have lost their sound value and are nonetheless retained in writing, e.g. English /aʊ/ in *plough* or Irish /aʊ/ in *cleamhnas* /kʲl̪ˠaunəs/ ‘marriage match’.

1.1 Characterising articulations

1.1.1 Consonants

Consonants are sounds which involve some constriction of the vocal tract during their articulation. The degree of constriction can be very slight as with /w/ or /j/, cf. *wet* /wet/ and *yes* /jes/ respectively, or can be total as with stops, e.g. /p, t, k/ in words like *pea*, *tea*, *key*.

In order to characterise the articulation of consonants, reference to three aspects is usually made, yielding so-called *three-term labels*. These cover the majority of cases in English and most other languages. The first term of these labels refers to the point in the vocal tract where constriction occurs. The second term refers to the manner of constriction. e.g. whether there is complete closure as with stops or only approximation as with fricatives. The last aspect refers to the presence or absence of voice, i.e. whether the vocal folds are vibrating during the articulation of a sound or not.

- 1) Place, 2) Manner of articulation, 3) Voice (voiceless or voiced)

Other languages may need further specifications for system sounds. For instance, both Irish and Russian have a distinction between palatal ('soft' or 'slender') and nonpalatal ('hard' or 'broad') consonants, compare Irish *neart* /n_ɟart/ 'strength' where the first sound is palatal and *naoi* /n^{yi}:/ 'nine' where this is nonpalatal. Similar distinctions are found in other languages, for instance Arabic has a distinction between so-called 'emphatic' and 'nonemphatic' consonants, the distinction here is between an articulation with constriction of the pharynx (the region in the back of the mouth above the larynx) and one without.

When discussing places of articulation one distinguishes various points in the vocal tract as indicated in the graph above. Not all of these points are used in the sound system of every language. There are no sounds in English produced at the uvula and there are no ambi-dental sounds in German, for instance.

labial (< Latin *labium* 'lip') Produced at the lips. The plain stops /p, b/ and the nasal stop /m/ in English are examples for these sounds, cf. *pit* /pɪt/, *bit* /bɪt/, *man* /mæn/.

labio-dental Produced between the lower lip and the upper teeth. Examples from English are /f/ and /v/ as in *fine* /faɪn/ and *vine* /vaɪn/.

dental (< Latin *dens* 'tooth') Produced just behind the upper teeth. Applies to stops in Italian, Spanish or Swedish for example, cf. *notte* [nɔt̪t̪e] 'night' in Italian. A dental pronunciation can be used for English ambi-dental fricatives in some varieties of English, notably in Ireland, but also in New York. Here words like *thought* and *that* would be pronounced as [t̪ɔ:t] and [d̪æt] respectively.

ambi-dental Produced with the tongue just behind the teeth when these are slightly apart. This is true of the sounds /θ/ and /ð/ in English *thin* [θɪn] and *this* [ðɪs]. Such sounds are relatively rare in the world's languages. In Europe, for instance, they occur in Spanish, e.g. *servicio* /ser'viθio/ 'service', in Danish, e.g. *mad* /mað/ 'food' and in certain dialects of Italian, e.g. *silencioso* /silen'θioso/ 'silent' as well as in Greek, e.g. *paidos* /piðos/ 'child'.

alveolar (< Latin diminutive of *alveus* 'cavity', referring to the sockets for the upper teeth) The alveolar ridge is the bony protrusion behind the top teeth before the arched roof of the mouth which forms the palate. This is the most commonly used passive articulator and the tip of the tongue is the most frequently used active one, as in such common sounds as /t, d, s, z, n, l/ and (without contact) the /r/ found in most varieties of English.

alveolo-palatal The region immediately behind the alveolar ridge is used for the broad-grooved fricatives of English, /ʃ/ and /ʒ/, and found in the affricates /tʃ/ and /dʒ/ as well. These sounds are articulated with attendant lip-rounding. This can be significant in the developments of sounds, for instance in the pronunciation of short *u* before /ʃ/ where the rounded nature of the fricative probably hindered the unrounding and lowering of /ʊ/ to /ʌ/ as in *but* /bʌt/.

palatal (< Latin *palatum* 'roof of mouth') The palate is the arched roof of the mouth which consists of bone covered by a thin layer of skin. The typical sounds produced here are /j/ and /ç/, the former in *yes* /jes/, *year* /jɪə/ and the latter in some English pronunciations of *huge* [çʊ:dʒ]. Stops in this region occur as well and are to be found allophonically in English when the following sound is a high front vowel, e.g. *keel* /ki:l/ [ci:l], *gibberish* /'gɪbəriʃ/ ['ɹɪbəriʃ]. Historically palatal stops they tend to shift further to affricates as in the development from Latin to Romance: *camera* /k-/ → *chamber* /tʃ-/ (a French loan in Middle English). The process of shift from a back to a front articulation for stops is called *palatalisation* and is attested widely in Slavic languages as well, for example in Russian where it can be seen in present-day inflections, e.g. *dukh* /dux/ 'spirit'-NOMINATIVE : *dusha* /dʌ'ʃa/ 'spirit'-GENITIVE. In Irish and Scottish Gaelic there is a whole series of palatal sounds which are used both to distinguish the lexical forms of words and to indicate grammatical categories, e.g. Irish *cí* /ci:/ 'breast'-GENITIVE : *caoi* /ki:/ 'way, manner'.

velar (< Latin *velum* 'covering', here of nasal opening at rear of mouth) The velum is the soft palate between the hard palate and the uvula at the back of the mouth. Here a number of common sounds are produced such as /k, g/ as in *call* /kɔ:l/ and *got* /gɒt/. Many languages also have a velar fricative, e.g. German

Tuch /tu:x/ ‘cloth’, Spanish *trabajo* /traˈbaxo/ ‘work’, Russian *ploxo* /ˈploχə/ ‘bad’. The voiced velar fricative is much less common, but does occur in Spanish, e.g. *bodega* /boˈðey̞a/ ‘shop’ and in Irish, e.g. *a ghort* /ə ɣʌrt/ ‘his field’.

uvular (< Latin diminutive of *uva* ‘grape’) The uvular has the primary function of closing the nose off from the mouth during eating. It is occasionally used in the articulation of sounds, an important one of which is the standard allophone of /r/ in French, e.g. *rouge* /ruːʒ/ [ʁuːʒ] ‘red’ or German as in *Regen* /reːgən/ [ʁeːgən] ‘rain’. The sound also occurs in Danish and in southern Swedish dialects where it has spread from north Germany. A uvular *r* is also found in vernacular forms of English in north-east Leinster (Ireland), e.g. *fear* [fiːʁ] and is the sound referred to as the Northumberland *burr*, found traditionally in the north-east of England.

glottal (< Greek *glotta/glossa* ‘tongue’) The glottis is strictly speaking the gap which arises when the vocal folds are kept apart. The most frequent sound to be produced here is /h/ which is a voiceless glottal fricative. A plosive can be articulated here as with the glottal stop used as the allophone of /t/ in British English dialects, such as Cockney (and many colloquial varieties of present-day urban English in Britain) as in *butter* [bʌʔə] or in popular Dublin English, e.g. *letter* [lɛʔəɪ].

The points of articulation discussed are complemented by references to the active articulator. This is nearly always the tongue. With labial sounds it can be the lower lip when raised towards to upper teeth as in English /f/ and /v/ in *few* /fjuː/ and *view* /vjʉː/, for example. Glottal sounds have no active and passive articulators as they are produced by a movement of both vocal folds.

The tongue is normally divided into three regions, each of which can be the active articulator. The adjectives used to refer to this parts of the tongue are *apical* ‘tip of tongue’ (< Latin *apex* ‘peak’), *laminal* ‘blade of tongue’ (< Latin *lamina* ‘plate’) and *dorsal* ‘rear of tongue’ (< Latin *dorsum* ‘back’). The tip of the tongue is used for /t/ and /d/ in English, but some languages like Swedish use the blade with a large contact area, e.g. *tala* [t̪ɑːlə] ‘speak’. The fricatives /s/ and /z/ are pronounced with the blade of the tongue in English, but other languages, notably Spanish, Dutch, Finnish and Greek among the European languages, use the tip of the tongue which makes their *s* sound like something intermediary between /s/ and /ʃ/, a phonetic feature of those languages which do not have a phoneme /ʃ/ anyway.

Consonants of standard English

	labial	dental	alveolar	palatal-alveolar	palatal	velar	glottal
1)	p b		t d			k g	
2)	f v	θ ð	s z	ʃ ʒ			h
3)				tʃ dʒ			
4)	m		n			ŋ	
5)			l, r				
6)	w				j		
	(labio-velar)				(palatal)		

1) stops, 2) fricatives, 3) affricates, 4) nasals, 5) liquids, 6) glides
The left symbol of each pair is voiceless, the right one voiced.

Manner of articulation

Before discussing the various manners of articulation, it would seem appropriate to remark on linguistic terminology as this is of relevance here. Below you will find the term *obstruent* which refers to both fricatives (like /s, f/), stops (like /p, t/) and affricates (like /tʃ, dʒ/). There is good justification for this label because in many languages the two groups of sound frequently behave as one, for instance by both being subject to a certain rule. Although *obstruent* in a complication with respect to the number of linguistic terms it allows a simpler statement to be made about sound structure. For example, in Russian all obstruents undergo devoicing at the end of a word, e.g. *jug* /juk/ [juk] ‘south’, *muzh* /muz/ [muʃ] ‘husband’. However, all sounds which are not obstruents, such as /n, l, r/ do not show this devoicing. One can also refer to the group of non-obstruents, non-vowels and non-glides as *sonorants*. One can now formulate a simple rule in English: only obstruents are found before sonorants in syllable onsets, hence one has *fling*, *pluck* but not **rlick* or **nrod*.

stops Any sound produced with complete blocking of the airstream is a stop. The stop itself is not technically a sound as it consists of a pure closure. Examples are /p, t, k; b, d, g; m, n, ŋ; l; ʔ/. Stops can be either voiceless and voiced but crosslinguistically there is a general preference for them to be voiceless. Indeed some languages do not have voiced stops, e.g. Finnish where they only occur in some loanwords and as a result of a softening process called ‘consonant gradation’. In the North Germanic languages – Danish, Swedish, Norwegian, Faorese and Icelandic as well as in Irish and Scottish Gaelic – the fricatives /s/ and /ʃ/ only occur in voiceless form and loanwords are altered accordingly, e.g. Swedish *etage* /e'ta:ʃ/ ‘storey’ (from French).

In English voiceless stops are generally aspirated, i.e. spoken with a small puff of air on their release, but not after /s/. This is not true of other European languages, the Romance and the Slavic languages do not aspirate these

stops. Further afield – in Armenian and Georgian, for instance – one finds ejectives, voiceless stops produced by closing the vocal folds and then releasing the stop in the oral tract with a sudden burst of air. Another variant of stop realisation is found in many South Asian languages. Here voiced stops are produced with simultaneous constriction of the vocal folds on their release creating a ‘murmuring’ effect so that *b* can sound as if were a combination of /b/ and /h/.

fricatives A fricative is a sound which is produced by causing a constriction, but not a closure, anywhere above and including the glottis. The typical sound of a fricative is caused by the air turbulence at the constriction. The latter is realised by drawing the tongue close to a passive articulator such as some point on the top of the mouth as with /s, ʃ, x/ seen in English *sign, shine* and Spanish *junta* /xunta/. Fricatives can be formed at the lips as with /ɸ, β/ and /f, v/ which differ in the use of both lips as opposed to the lower lip and the upper teeth respectively, seen in English *vow* /vau/ and Spanish *neve* /neβe/ ‘snow’. A glottal fricative /h/ is produced by drawing the vocal folds together but not closing off the airstream. This sound is not present in all languages, e.g. Italian does not have /h/, and many other have lost it, such as French. In urban varieties of British English, initial /h-/ is usually dropped, but more conservative varieties, such as Scottish, Irish and American English, do not do this. Other varieties may have fricatives not found in standard English. In Irish and Newfoundland English a characteristic fricative is found as a realisation of /t/ at the end of a word before a pause, or between two vowels. This is a kind of whistling sounds produced by bringing the tip of the tongue close to the alveolar ridge, but not forming contact, e.g. *put* [pʌt̪], *putty* [pʌt̪i].

affricates A sequence of stop and fricative is called an affricate. These segments can exist phonetically but their phonological status depends on whether they occur within word stems, i.e. without a morpheme or word boundary between them. Hence one can say that /tʃ/ and /dʒ/ in English are phonemes as they occur in lexical stems like *church* /tʃɜ:tʃ/ and *judge* /dʒʌdʒ/, but /ts/ and /dz/ in words like *spots* /spɒts/ and *buds* /bʌdz/ are not phonemes because they have a morpheme boundary between the two sounds in questions, i.e. /spɒt+s/ and /bʌd+z/ respectively where /s/ and /z/ are realisations of the plural morpheme {S}. The situation in German or the Slavic languages is quite different as here /ts/ can occur as a part of a word stem, e.g. Russian *tsena* /tsɪ'na/ ‘price’, German *Zapfen* /'tsapfən/ ‘pine cone’.

obstruents A cover term for stops, fricatives and affricates together (see remarks at the beginning of this section).

sonorants This is a cover term which embraces liquids – /l, r/ – and nasals – /m, n, ŋ/. These segments are nearly always voiced (but Welsh is a language in which voiceless sonorants are phonemes). Sonorants tend to act similarly in history and to have similar phonotactics, i.e. occur in similar combinations within words. Thus in German the /x/ is always realised as [ç] following a sonorant /n, l, r/, e.g. *Mönch* [møŋç] ‘mink’, *Milch* [milç] ‘milk’, *Storch* [ʃtɔ:rç] ‘stork’. Another phenomenon which shows the interrelatedness of sonorants can be seen from Western Irish where /r/ interchanges with /n/ as in *mná* ‘women’ /mra:/ or *innigh* /i:m̥r̥i:/ ‘worry’. Furthermore, /-r/ has shifted to /-l/ in *feirmeoir* /f̥ɛl̥im̥o:r̥/ ‘farmer’ on borrowing.

nasals Any consonant which is produced with a lowered velum is a nasal because air can escape through the nose causing nasal resonance. A degree of nasality can be present in normal speech depending on the individual or on whether one has a cold or not. But those nasal segments which have phonemic status belong to a small set, in English these are /m, n, ŋ/. Many Romance languages have palatal nasals, e.g. Spanish *España* /espaɲa/ ‘Spain’, Italian *bagno* /baɲno/ ‘bath’. French also has nasal vowels (see section 1.1.2 *Vowels* below).

liquids This is a cover term for *l* and *r* sounds. The *l* sounds come in at least three different flavours. (1) an alveolar /l/, as in English *lead* [li:d], (2) a velarised [ɫ], as in English *ill* [ɪɫ] or Russian *byl* [bɪɫ] ‘was’ and (3) a palatal [ʎ] as in Italian *famiglia* /fa¹miʎʎia/ ‘family’ (palatal *l* and *n* are always geminates in Italian). Historically, palatal /l/ tends to develop into /j/ as in it has done in Spanish, e.g. *pollo* /pojo/ ‘chicken’, and in French, e.g. *travail* /travaj/ ‘work’.

The *r* sounds also have different variants. In English a post-alveolar continuant (in narrow transcription an *r* on its head) is the normal realisation of /r/, e.g. *run* /run/ [ɹʌn]. Some traditional varieties of Scottish English have a trill, in narrow transcription an upright *r*, e.g. *rip* [rɪp]. A ‘flap’ *r* is found in many varieties of English, especially in North America in intervocalic position, e.g. *spider* [spair̥]. A uvular *r* is typical of languages in a broad band across north-west continental Europe from France to southern Sweden, e.g. German *Rand* [ʁant] ‘edge’.

The cover term ‘liquids’ is useful when describing the phonological structure of words. For instance, in English only liquids are allowed in syllable onsets after an obstruent, hence one has *blond*, *break*, *sprat*, *split* but not **bneak* where a nasal follows a stop. The only exception to this is the use of nasals after /s/ as in *sneak*, *smash* (see section on phonotactics below).

glides These are sounds which occupy an intermediary position between vowels and all other consonants. Different terms can be used such as semi-vowels or approximants. The two glides of English are /w/ and /j/ as in *well* /wel/ and *you* /ju:/. In conservative varieties of English, above all in Ireland and Scotland there is also a voiceless glide, transcribed [ɰ], and is used for every occur of written *wh-*, e.g. *which* [ɰɪtʃ], *whale* [ɰe(:)l], *whet* [ɰet] which leads to contrast with words beginning in *w-* [w-], i.e. with *witch*, *wail*, *wet* for the words just given. In other varieties this sound has coalesced by [w], that is it has merged with its voiced counterpart.

1.1.2 Vowels

Vowels are sounds which are produced without any constriction of the vocal tract. They are nearly always voiced and are usually produced with airflow solely through the oral cavity. In some languages, such as French and Polish, a number of vowels are produced with the velum lowered so that there is resonance in the nasal cavity as well, cf. French *chanter* [ʃɑ̃te] ‘to sing’. Nasals vowels are rarely phonemes but many other languages or varieties have subphonemic nasalising of vowels, especially in pre-nasal position. This is true, for instance, of many forms of American English, especially for the vowel /æ/ as in *man*.

Cardinal vowels In order to characterise vowels satisfactorily a system was introduced at the beginning of the 20th century by the English phonetician Daniel Jones. This is the cardinal vowel system whose basic principle is that extreme positions for the articulation of vowels are taken as reference points and all other possible vowel articulations are set in relation to them. The four corner positions are: /i/, /a/, /ɑ/, /u/ which represent the extremes in the vowel quadrangle of an idealised human mouth in a sagittal view. There are two further horizontal levels of vowels between these vertical extremes: /e/, /ɛ/; /o/, /ɔ/. All the cardinal vowels exist in rounded and unrounded versions, but a low front rounded vowel [œ] does not seem to occur as a phoneme in natural languages. The vowel quadrangle used for the representation of vowels is derived from a side view of the oral cavity with the face turned to the left, that is the position of /i/ is maximally high and front, the position of /u/ is maximally high and back while the low vowels /a/ and /ɑ/ are maximal low front and low back respectively.

Front		Back	
i y		u u	High
e ø		ɤ o	Mid
ɛ œ		ʌ ɔ	Low mid

a (æ) ɑ ɒ Low

The left symbol of each pair above is unrounded; the right one is rounded. There is a general correlation between unroundedness and frontness and roundedness and backness, i.e. these value combinations are much more common than their opposites.

The following chart illustrates the vowel values of standard British English, i.e. Received Pronunciation and vary greatly between varieties of English.

Vowels of standard British English (RP)

Monophthongs

Front		Back
i:		u: High
i		ʊ
e	ə ɜ:	Mid
	ʌ	ɔ: Low mid
æ		ɑ: ɒ Low

Examples: *beat* /bi:t/, *bit* /bɪt/; *bet* /bet/; *bat* /bæt/, *bard* /bɑ:d/, *bo(ttom)* /bɒtəm/; *bull* /bʊl/, *but* /bʌt/; *bought* /bɔ:t/, *boot* /bu:t/; *(butt)er* /bʌtə/. The word *bird* is pronounced as /bɜ:d/ in RP but as [bæ:d] in rhotic varieties of English, i.e in those where /r/ at the end of a syllable is pronounced.

Diphthongs

rising:	aɪ, aʊ, ɔɪ	bɪle /baɪl/	bɔw /baʊ/	bɔɪl /bɔɪl/
	eɪ, əʊ	bəɪt /beɪt/	bɔt /bɔt/	
centring:	ɪə, eə, ʊə	pɪə /pɪə/	pɪə /pɪə/	pɔə /pɔə/

The centring diphthongs do not exist in rhotic varieties of English as their equivalents are sequences of a vowel and /r/, e.g. *pier* /pɪ:r/. The rising diphthongs /eɪ/ and /əʊ/ vary in their quality across the English-speaking world. Some varieties, such as traditional Scottish and Irish English have monophthongs, i.e. [e(:)] and [o(:)] while others have slight diphthongisation, e.g. American English [ɔʊ] as in *goat* [gɔʊt].

There is also a marginal diphthong in a word like *ruin* /ruɪn/ but it is not of importance to the sound system as a whole.

1.2 Phonotactics

The area which is concerned with the possible sequences of sounds in a language is phonotactics. This can be clearly seen if one compares two languages which have the same segments but different orders in which they can occur. The point of reference is the syllable for which there are three positions which are phonotactically relevant: the beginning (syllable-initial), the middle (syllable-medial) and the end (syllable-final). In fact this can be simplified to a two-way distinction between initial and medial/final (the syllable rhyme, see below). Consider an aspect of Irish and English to illustrate what is meant here. In English the sequence /sr/ is found in both languages, cf. English *cars* /kɑ:rs/. However, in English this sequence cannot occur at the beginning of a word whereas in Irish it can, cf. *srón* /sru:n/ ‘nose’. Another example would be fricatives before sonorants, i.e. before /l, n, r/. The only ones which are allowed in English are /f/ and /s/ as in *fling* and *slip*. However, in Irish the other fricatives such as /x/ and /ɣ/ as well as /m/ can occur in this position, e.g. *sa ghleann* /sə ɣl̪ˠan/ ‘in the valley’, *a mbláthanna* /ə ml̪ˠa:hənə/ ‘their flowers’. One can conclude that Irish has a different phonotactics than English as there are far fewer restrictions on the combinations of consonants in word-initial clusters.

Gaps in systems Not all possible phonotactic combinations in a language are actually attested. There will always exist certain gaps. Here one must distinguish between random and systemic gaps. In English there are the words *please* and *prowl* but there is no *prease* or *plowel*. These are random gaps as the second pair of words would be acceptable according to the phonotactics of English. However, systemic gaps are due to phonotactic restrictions, for instance *pnease* and *pnowl* are non-existent and impossible in English. These facts can be summarised in the following table.

Triconsonantal syllable initial slots in English

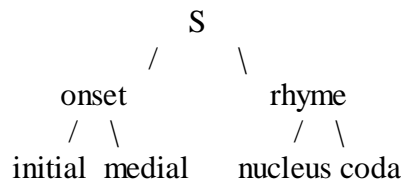
1:	/s/	/s/
2:	/p/	/p, t, k/
3:	/l, r/	<i>spray, splay</i> /r/ <i>sprat, stream, screech</i>

Some combinations may occur in loanwords and with time be accepted as ‘normal’, i.e. not provide difficulties in pronunciation for native speakers, e.g. all words in English with initial /skl-/, such as *sklerosis*, derive from the Greek word *skleros* ‘hard’. Other combinations have been simplified on borrowing, e.g. *pneumonia* is pronounced with an initial /n/ as is *gnostic*.

1.3 Syllable structure

To understand phonotactics more fully it is essential to grasp what syllables are and how they are structured. The syllable is a unit which everyone recognises intuitively. If one asks a nonlinguist how many syllables in the words *butter*, *drudgery*, *education* or *kettle* one usually gets the right answer, namely 2, 3, 4 and 2. But it is notoriously difficult to define a syllable. It is usually a sequence of sounds with a vowel in the middle. However, *kettle* /ketl/ and *button* /bʌtn/ are regarded as having two syllables, so it must be possible for a sonorant – /l/ or /n/ – to occupy the centre (nucleus) of an (unstressed) syllable in English.

Despite the difficulties of its ultimate definition the structure of the syllable can be shown as follows:



The simplest type of syllable is one which consists of a consonant followed by a vowel, e.g. *tar* /tɑ:/, though the onset need not be present: *eye* /aɪ/. But usually syllables are more complex. The onset can consist of more than one consonant: *star* /stɑ:/. The rhyme can have either a short or long vowel or a diphthong as nucleus, *the* /ðə/, *cue* /kju:/, *sty* /stai/. A coda may be present in which case the syllable is closed: *stack* /stæk/. Just like the onset, the coda may also be complex: *stance* /stans/, *sixth* /sɪksθ/. A general feature of syllables is that the most sonorous element is in the middle and the least sonorant elements are found on the edges. The only exception to this is /s/ which can occur before a voiceless stop in English: *spin* /spɪn/. Nonetheless, the principle holds and can be seen in the following example (*pressed*):

onset		nucleus		coda		
/p	r	e	s	t/		
vcl. stop	liquid	vowel	vcl. fric.	stop		

Other phonotactic restrictions may apply to syllable structure in a given language. In English a final short vowel is not allowed, unless it is an unstressed shwa as in *to* /tə/, *the* /ðə/, etc. A sequence like /tɪ/ would not be permissible in English, such a syllable must be closed, as in *tick* /tɪk/ or it must have a heavy nucleus, e.g. a diphthong as in *tie* /taɪ/.

The weight of a syllable is determined by the elements in its rhyme (see syllable structure above). There are basically two types here.

Rhyme

<i>Light syllable</i>	short vowel + single consonant
<i>Heavy syllable</i>	long vowel or diphthong, possibly followed by one or more consonants

Syllable weight is an important factor in any language and can be shown to play a role in its development. At any point in time a language will have rules governing permissible weight. In languages which have long and short vowels and consonants, there may be a specific definition for heavy syllables. For instance, in Swedish a heavy syllable is one which either has a long vowel plus a single consonant (V:C) or a short vowel plus a long consonant (VCC) in its coda. These two types occur but a long vowel and a long consonant (V:CC) does not.

Swedish	<i>vitt</i> /vitt/	‘wide’	VCC
	<i>vit</i> /vi:t/	‘white’	V:C

In late Old English (around 1000 AD) there was a similar distribution to that just given. It did not develop into a phonotactic rule as so-called superheavy syllables, consisting of a long vowel and more than one consonant, arose due to lengthening of vowels before a cluster of a sonorant and a homorganic consonant (one at the same point of articulation).

<i>dust</i> /dʌst/	VCC	<i>hām</i> /hɑ:m/	‘home’	V:C
<i>mind</i> /mind/	-VCC →	/mi:nd/		-V:CC

The above situation is often described using the term *mora* which is a unit of syllable quantity. Syllables which contain short vowels as nucleus and simple codas (a single consonant) are said to be *mono-moraic* whereas those which either 1) have a long vowel nucleus or 2) a short vowel nucleus followed by a heavy syllable coda (two or more consonants) are said to be *bimoraic*. The Swedish and Old English situations thus involve the structure of bimoraic syllables.

Stress and vowel quality Syllables can be stressed or unstressed in English. It is generally true that the maximum number of distinctions is found in stressed syllables, for instance the full range of vowels in English is only found in stressed syllables, e.g. the vowels /æ/ (as in *bat*) and /ʌ/ (as in *but*) are not found in unstressed syllables. The only short vowels which occur in this position are /ɪ/ and /ə/: *naked* /neɪkɪd/, *about* /ə'baʊt/. English does not allow short stressed vowels in open position. In this case the vowel must be long or a schwa, e.g. *two* [tu:], *to* [tə]. This does not hold for all languages, however. In

Irish short stressed vowels in word-final position are allowed, e.g. *te* [t̪ɛ] ‘hot’.

Epenthesis and metathesis The requirements of syllable structure can lead to changes in the phonetic forms of words, either diachronically or synchronically. The latter case is easily illustrated with examples from varieties of English which have slightly different requirements for syllables than more standard forms of the language. For example, in Irish English there is a restriction on heavy codas – a coda which contains two sonorants, hence the extra vowel in a word like *film* [fɪləm] or *helm* /hɛləm/; this phenomenon is called *epenthesis*.

Avoidance of heavy codas (i)

			resyllabification
<i>film</i> /.fɪlm./	à	[.fɪ.ləm.]	
<i>helm</i> /.hɛlm./	à	[.hɛ.ləm.]	

A related change is *metathesis* which involves a reordering of the sequence of sounds in a syllable. Again in Irish English the heavy coda prohibition has led to instances of V/r/ being reversed to /r/V as in *modern* [mɒdrən] or *pattern* [pætrən].

Avoidance of heavy codas (ii)

			shift of segment from coda (c) to onset (o)
<i>modern</i> /mɒ[d]oə[rn]c/	à	[mɒ[dr]oə[n]c]	
<i>pattern</i> /pæ[t]oə[rn]c/	à	[pæ[tr]oə[n]c]	

Metathesis between /r/ and a vowel is very common and can be seen by comparing related forms across languages, e.g. English *burn* and German *brennen*. It is also in evidence within a language if one examines different forms, e.g. *work* and *wrought* (as in *wrought iron*). Diachronic comparisons can show where metathesis has taken place, e.g. Middle English *bridde* and Modern English *bird*. Metathesis is also recognisable in firstnames. The names *Christine* has a few alternatives, one of which shows the sequence V/r/ rather than /r/V: i.e. *Kersti(n)*.

1.4 Prosody

Prosody is a term to refer to properties of language such as pitch, loudness, tempo and rhythm. Importantly, prosody also covers the phenomenon of *stress* which is found in most languages. This means that, in words of more than one syllable, there is one which is more acoustically prominent than the others. This prominence can be realised on the phonetic level by one of the following three

features or a combination of them.

- 1) greater relative length of the stressed syllable
- 2) relatively high pitch
- 3) greater relative loudness

(1) is nearly always a characteristic of stressed syllables. However, languages usually have either (2) or (3) as well. (3) is most common for so-called lexical stress, that is the normal stress on a word said without particular emphasis, e.g. the second syllable in *polite* or the first in *constant*. There is also the phenomenon of contrastive stress which refers to a situation where the speaker wishes to highlight a whole word and does this by altering the prosody of the syllable carrying lexical stress. In English, syllables given contrastive stress tend to have a higher pitch so that in a phrase like *He struck the "teacher!* there is a recognisable rise on the first syllable of *teacher*. Not all languages do this, German, for instance, tends to mark contrastive stress by loudness and length of the highlighted word, e.g. *Er hat seinen neuen "Wagen kaputtgefahren!* 'He crashed his new car!'.

Role of stress and stress placement The use of pitch for lexical stress is not, however, unknown. It is a feature of Finnish, where the first syllable of a word has a rise in pitch followed by all subsequent syllables at a lower pitch. This brings one to the question of why there are stressed syllables at all in a language. The obvious answer is that the rhythm provided by sequences of stressed and unstressed syllables make it easier for the listener to follow what is being said (try saying a sentence of some length in a flat, dead pan accent and see how strange this is). In addition, if the stress is always on a certain syllable, the first in Finnish, the penultimate in Polish, then it is also easier to recognise the word structure of the sentences one is listening to. But this does not hold for all languages. Some have variable stress, e.g. Russian which often has a stress shift to the last syllable of the word in an oblique case, e.g. *stol* /stol/ 'table'-NOMINATIVE : *stola* /stɒˈla/ 'table'-GENITIVE. English has a complex stress system because alongside the inherited Germanic system of stressing the stem of a word, e.g. *'friendship*, *'hundred*, *for'gotten*, *be'set*, it has also got a system with Romance words which favours stressing the last heavy syllable counting from the end of the word, e.g. *per'ceive*, *do'nation*, *com'puter*. This may of course mean that the first syllable is stressed if the word does not have a heavy syllable (and you cannot move further back from the end than the first syllable), e.g. *'fallible*, *'posit*, *'service*. In addition there are more recent French loans which always have the stress on the last syllable irrespective of whether this is long or not, e.g. *ho'tel*, *su'preme*, *po'lice*.

Timing in languages Languages which exhibit acoustic prominence on a certain

syllable of a multi-syllable word are called *stress-timed*, because the length of time from one stressed syllable to the next is approximately equal. All the languages mentioned in the previous paragraphs belong to this category. An additional term is used here, a *foot*, which refers to the distance between two peaks of acoustic prominence, i.e. stressed syllables, irrespective of the number of unstressed syllables in between (this term is important in the formal analysis of verse poetry).

A correlation of stress-timing is that those syllables which are not stressed are phonetically reduced. This is true of English and has had far-reaching consequences in the history of the language leading to the reduction and loss of inflectional endings with subsequent large-scale changes in grammar.

There are some languages which have a more or less equal distribution of stress across all syllables of a word, that is they have no apparent stress pattern. Such languages are *syllable-timed* because the length of time between syllables is roughly equal. French and Jamaican Creole and many African languages (of the very large Bantu family) are examples of syllable-timed languages as are the varieties of English used by speakers of these languages. If any syllable tends to be prominent in a syllable-timed language then it is the final syllable of a word. No contrastive stress exists in such languages.

Contrastive stress A stress-timed language has an additional characteristic mentioned at the end of the previous paragraph. It can, and does in several cases, distinguish words by stress alone. There are many words in English which are distinguished by stress. The reason for the stress contrast in English is that certain French loanwords – generally called Romance loans – entered the language in the Middle English period (twelfth to fifteenth century) and probably then had final stress as part of their prosodic makeup. Later on nouns received initial stress conforming to the dominant pattern of Germanic words in English. But the verbs did not always experience a fronting of stress, so that there are now many word pairs which differ only in stress.

'convert : con'vert, 'review : re'view, 'convict : con'vict
'discharge : dis'charge, 'combat : com'bat, 'refill : re'fill
per'mit : 'permit, re'mould : 'remould, re'make : 'remake

Contrastive stress is found between verbs and adjectives in English also: *'absent : ab'sent, 'frequent : fre'quent*. The general rule would seem to hold that Romance verbs have stress on the second syllable, irrespective of whether they contrast with nominal forms or not: *at'tract, con'firm, re'sent*. The small number of Romance verbs with initial stress would appear to be nominal derivations: *'comment, 'preface*.

The time when Romance loans entered English can make a difference. Later loans generally have final stress and often contrast with the same word

borrowed earlier which had been adapted to the initial stress type for nouns, e.g. *'moral, mo'rale; 'liquor, li'queur; 'critic, cri'tique, 'risky, ris'qué*. (the later loans also tend to retain the French spelling). Often there is a difference in pronunciation because unstressed vowels are frequently reduced in quality in English. However, one or two instances only have a stress contrast, e.g. *'billow* and *be'low*.

Metrics The stress patterns of words can be grouped according to where the stress falls in a word. The area of phonology which is concerned with this issue is called *metrics* and the phenomenon of stress placement within a word is *metre*. In the following *u* stands for an unstressed syllable (usually short) and */* symbolises a stressed syllable (usually long). In metrics the term *ictus* is used for the syllable which carries stress.

Metre type	1	2	3	4	Examples
<i>iamb</i>	u	/			Eng. <i>a'bout</i>
<i>trochee</i>	/	u			Eng. <i>'butter</i>
<i>anapaest</i>	u	u	/		Eng. <i>Paki'stan</i>
<i>dactyl</i>	/	u	u		Eng. <i>'allophone</i>
<i>spondee</i>	/	/			Eng. (a) <i>'black 'board</i>
<i>paeon</i>	/	u	u	u	Eng. <i>'ordinary</i>

These are general types which do not always occur in natural languages. In English the last type is only found in slow pronunciation, normally the sample word would be [¹ɔ:dɪnri], that is a dactyl. The spondee is typical of syntactic groups and not of lexicalised compounds as seen in the example above which contrasts in stress with the trochee pattern in *blackboard* (see next section).

Stress types in English The discussion so far has concerned stress as if it were a unified feature. But there are different levels of stress. For English one must distinguish at least two, *primary* and *secondary* stress. Secondary stress can only occur when a syllable is separated from the primarily stressed syllable by at least one further syllable. Primary stress is indicated by a superscript vertical stroke while secondary stress is shown by a subscript stroke.

Primary stress:	<i>linguist</i>	[¹ lɪŋgwɪst]
Secondary stress:	<i>education</i>	[,edju ₂ 'keɪʃən]

Level stress Apart from differences in stress among the syllables of a word, English has a phenomenon known as *level stress*. By this is meant that two syllables in a word are equally stressed. This is very common with syntactic phrases and proper names.

Level stress: 'World 'War 'Two, 'Hong 'Kong, 'Time 'Square

Level stress can contrast with cases of primary stress. Usually the latter is found with phrases which have become compounds and are now semantically opaque or at least treated as a unit.

Level stress: 'black 'bird (syntactic group)
 Primary stress: 'blackbird (compound)

1.5 Writing and sound

It is essential to distinguish between writing and sound. Because people have gone through a school system in which the orientation is towards writing it is difficult to abstract away from the written word and think in terms of sounds and not of letters. One should bear in mind that the system of writing is historically an afterthought to represent sounds in a fixed form. Writing is furthermore only a pale imitation of the sound structure of language as so many characteristics, such as the prosodic features discussed in the previous section, cannot be represented in writing at all. For this section on phonetics it is important to note that the orthography of a language is more or less inconsistent. It is the exception rather than the rule for a language to have a one-to-one relation between letters and sounds. In the European context, Finnish is probably the best example with languages like Dutch and Russian not far behind. Others, like English, French, Danish and Irish have many letters which in pronunciation have moved away from the sounds associated with them originally.

The relationship between the written and the spoken form of words leads to a fourfold set of distinctions – depending on the nature of the relationship – which are captured by the following labels.

Homophony Two words are pronounced the same, e.g. *father* and *farther*; *court* and *caught* (this only applies to non-rhotic varieties of English), *meat* and *meet*.

Homography Two words are written the same but not pronounced the same, e.g. *convert* (noun) and *convert* (verb); *lead* (metal) and *lead* (cord for controlling a dog's movements). Homography is not present in languages which do not have contrastive stress or the same manner of writing long and short vowels.

Homonymy Two words are written and pronounced the same, e.g. *bear* and *bear*; *bank* and *bank* in English. These words are not related etymologically. It is purely a matter of coincidence that they have developed to be written and pronounced the same.

Polysemy Two distinguishable meanings of a single word form exist. For example in English the word *neck* exists with the meaning 'part of the body' and

'narrow strip of land joining two larger parts'. In this case the second meaning is derived from the first one which is basic or primary. Seen historically, polysemous forms stem from the same root in contradistinction to homonyms which have come to be written and pronounced the same by chance.

Summary

- *Phonetics* is the study of human sounds and *phonology* is the classification of the sounds within the system of a particular language or languages.
- Phonetics is divided into three types according to the production (*articulatory*), transmission (*acoustic*) and perception (*auditive*) of sounds.
- Three categories of sounds must be recognised at the outset: *phones* (human sounds), *phonemes* (units which distinguish meaning in a language), *allophones* (non-distinctive units).
- Sounds can be divided into consonants and vowels. The former can be characterised according to 1) *place*, 2) *manner of articulation* and 3) *voice* (voiceless or voiced). For vowels one uses a coordinate system called a *vowel quadrangle* within which actual vowel values are located.
- *Phonotactics* deals with the *combinations* of sounds possible and where sounds can occur in a *syllable*.
- The basic structure for the organisation of sounds is the *syllable*. It consists of an *onset* (beginning), a *rhyme* (everything after the beginning) which can be sub-divided into a *nucleus* (vowel or vowel-like centre) and a *coda* (right-edge).
- *Prosody* is concerned with features of words and sentences above the level of individual sounds, e.g. stress, pitch, intonation. Stress is frequently contrastive in English.
- The unstressed syllables of English show characteristic phonetic *reduction* and words containing this are called *weak forms*.
- It is essential to distinguish between *writing* and *sound*. There are various terms (*homophony*, *homography*, *homonymy*) to characterise the relationship between the written and the spoken form of words depending on what the *match* between the two is like.

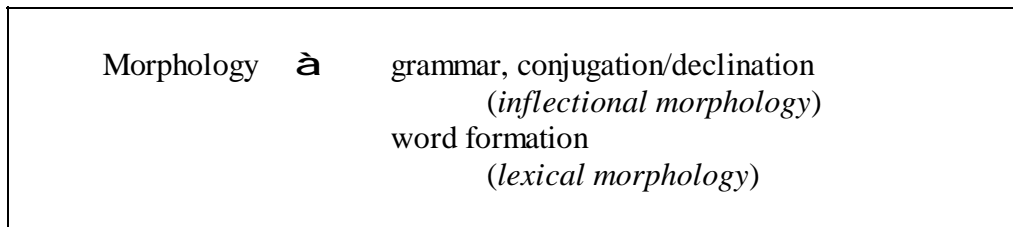
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2 Morphology

Morphology is the study of words, their internal structure and the changes they undergo when altered to form new words (word formation) or when they have different roles within a sentence (grammatical inflection). This leads to a two-fold division in the field as shown in the following diagram.



Morphology is often referred to as grammar, the set of rules governing words in a language. Traditionally, grammars were based on the models of classical Latin and Greek, languages which contained a large number of endings. It is thus not surprising that classical authors were concerned with the structure of words. However, for later European languages, and certainly for modern English, the categories which were first devised for Latin and Greek are not usually applicable and can be a genuine hinderance in understanding the grammatical structure of modern languages. Because of the cultural prestige of the classical languages the divisions made by their grammarians have persisted to this day. The difficulty is that, on a formal level, many of the categories of classical grammar do not exist today. For instance, it makes little sense to talk of accusative and dative, in a formal sense, in present-day English as these cases are not marked on nouns and there is only one combined form for pronouns, i.e. *her, him, us, them*, etc. Of course the notion of accusative, the object of a verb's action, as in *Fiona grasped the nettle*, continues to exist as does the notion of dative as in *Fiona gave Fergal the parcel*. But because of the lack of formal marking, grammatical categories like the accusative and dative are indicated via syntax (sentence structure), the topic of the next chapter.

Grammar is a part of language which is relatively autonomous. By this is meant that it has its own internal rules and is not necessarily affected by the organisation of reality outside of language. The correspondence between language and the external world is not obligatory and during the long evolution of human language it has developed a degree of autonomy which students of linguistics should be aware of. For instance, plural nouns do not always refer to a group of objects, e.g. *The contents of the bag* could be an apple (singular) and *The means to open the box* could be a knife (again, singular).

Another instance of autonomy can be seen in gender. Languages usually have some concept of natural gender, for instance in Modern English nouns

referring to female beings co-occur with feminine personal pronouns and those which refer to male beings co-occur with the appropriate masculine forms. However, many languages, particularly in the Indo-European family, still have grammatical gender which has co-occurrence restrictions for all nouns, adjectives and determiners (articles and pronouns). German is one such language, the Romance languages are further examples. Now while it is probably the case that grammatical gender derives historically from natural gender, in Indo-European it became independent of the linguistically external facts of gender very early on and by the time of the first attestations of daughter languages (before 1,000 BC) gender had become autonomous vis à vis the non-linguistic reality which language reflects.

This can be illustrated by a few examples: in Irish the word for ‘soul’, *anam*, is masculine, the word for ‘mind’, *intinn*, is feminine; in German the word for ‘moon’ is masculine, *der Mond*, and that for ‘sun’ is feminine, *die Sonne*. In Romance languages it is the other way around, consider *la luna* ‘the moon’ and *il sole* ‘the sun’ in Italian. It is obvious that this kind of gender has nothing to do with biological gender but just refers to the manner in which the nouns are declined and the form of the article they take in various cases such as the nominative and genitive singular and in the plural. Why the words for ‘soul’ and ‘mind’ or for ‘sun’ and ‘moon’ should belong to different classes in this respect is an accident of history and for the native speakers at any one point in time, the matter is completely arbitrary.

The discussion so far has been about the nature of morphology in certain languages. But a brief crosslinguistic examination reveals that not every language has a full morphology. For instance, Russian, Irish and German are much richer in this respect than English although this language is related to the others, albeit at different time depths. The question to consider is how morphology arises and how it recedes.

Morphology arises basically through words merging with each other. A word becomes semantically bleached, i.e. it loses clear meaning, and becomes attached to another word – this is the stage of a clitic. After some time a clitic may further lose semantic contours and become inseparable from the lexical word it co-occurs with. Then one speaks of an inflection. This process can be carried further and this inflection may later be lost – usually through phonetic blurring – in which case there is a reduction in morphology and the language as a whole becomes analytic in type (this has happened to English in its history). Such a series of developments over a long stretch of time – at least several centuries – is called a typological cycle.

Typological cycle

Stage A	A starting point for a language with few if any endings
Stage B	Some words attach to others and lose their

	independent meaning (cliticisation). Example: Old English <i>-lice</i> 'like' becomes attached to stems, e.g. <i>sothlice</i> 'truly', i.e. <i>truth-like</i> .
Stage C	Clitics lose their phonetic clarity, here: <i>-lice</i> > <i>-ly</i> , and become inflections because they are no longer recognised as related to the independent words from which they stem. At this stage the inflection can become productive, consider English <i>-ly</i> which can be attached to many nouns to form adjectives.
Stage D ₁	The language remains stable with a given number of inflections
Stage D ₂	Further phonetic reduction proceeds and established inflections are lost so that the number of bare stems increases.
Stage D _{2a}	The language remains stable with few inflections
Stage D _{2b}	Some separate words begin to attach to stems again so that the cycle starts at B and possible on to C again.

2.1 Word, morpheme and allomorph

Morphology is the level of linguistics which is concerned with the internal structure of words, whether these be simple or complex, whether they contain grammatical information or have a purely lexical status. There are various units which are used on this level and they can be seen as parallel to the distinctions which have already been introduced in connection with phonology. To begin with, however, one has to deal with the word, as lay speakers have a strong awareness of this. It is a fairly imprecise notion whose definition, if any, is chiefly derived by non-linguists from orthography.

A word can be defined linguistically as an element which exhibits both internal stability and external mobility. To take an example the word *pack* is internally stable inasmuch as it cannot be broken down into further elements, i.e. *pack* does not consist of *pa* + *ck* or *p* + *ack*. It is externally mobile inasmuch as it can occupy various positions in a sentence, i.e. it is moved as a unit within a syntactic construction, cf. *They left the pack on the table* and *The pack has to be mixed again*.

The spaces used in orthography have nothing to do with the linguistic definition of the word. These spaces are used in (some) languages because speakers recognise the internal stability of the word but the spaces do not define

the unit. Furthermore, there is much variability in the spelling of words. To take a simple example, the word *loanword* can be written as one word or with a hyphen *loan-word* or as two orthographic words *loan word*. Linguistically, the criteria to be considered is whether primary stress is found on the first element, which is indeed the case: [ˈləʊnwɜːd]. Other nominal compounds which also illustrate this phenomenon are *tail-wind*, *nose-dive*, *space-shuttle*, *job-stress*, *road-rage*, *anti-freeze* and which can therefore be linguistically regarded as a single word.

Largely because of the imprecision of the term ‘word’ linguists frequently prefer to use another term, *morpheme*. This is the system unit on the level of morphology much as the phoneme is on that of phonology. By definition a morpheme is the smallest unit which carries meaning. It is kept apart from the phoneme in that the latter distinguishes, but does not itself carry meaning. Normally the morpheme is transcribed in curly brackets: { }, for instance in English there is a plural morpheme {S}. This morpheme naturally has a number of realisations, just consider the words *cat*, *dog* and *horse* which in the plural are *cats* /kæt+s/, *dogs* /dɒg+z/ and *horses* /hɔːs+ɪz/ respectively. In order to capture this fact, one speaks of *allomorphs* which are non-distinctive realisations of a morpheme just as allophones are non-distinctive realisations of phonemes. Allomorphs are a feature of the morphology of all languages. Even those with highly regular grammatical systems, like Finnish or Turkish, show variants of morphemes depending on the words to which they are attached. Other languages, such as members of the Indo-European language family, group variants into classes and thus have different sets of ending to indicate a single grammatical category. An example of this would be Irish which has various means of declining nouns (showing case and number). For instance, there are two endings *-n* and *-ch* for the genitive (of fifth declension nouns) as in *caora* ‘sheep’, *olann na caorach* ‘the wool of the sheep’, *comharsa* ‘neighbour’, *gluaisteán na comharsan* ‘the neighbour’s car’. This type of situation is found in other languages such as German, Russian and the other Slavic languages, the Baltic languages (Lithuanian, Latvian), etc.

2.1.1 Various types of morphemes

Any discussion of morphemes requires that further subdivisions be recognised. There are at least two sets of divisions here, one according to status and one according to function. The first that between *free* and *bound* morphemes. A free morpheme is one which can occur on its own. Most words in a dictionary, for example, are instances of free morphemes. Their occurrence does not depend on that of another word with which they are associated. A bound morpheme is one which can only occur in connection with a further (free) morpheme. An example of this is English *-ish* which can only occur as the ending of an adjective, e.g. *brutish*, *fiendish*, *peevish*. Bound morphemes are typically polyfunctional, e.g. the Irish ending *-ach* /-əx/, either as part of a noun, as in *brollach* ‘preface’ or

as an inflection as in *riail* : *rialach* ‘rule-NOM’ : ‘rule-GEN’. The same is true of the ending *-s* in English which can function as a plural marker or a marker of the third person singular in the present tense of verbs. Bound morphemes can contrast with one another, providing a means of distinguishing meanings, consider *childish* and *childlike* or they may develop an additional semantic connotation, apart from changing the class of a word, consider *coldish weather* ‘slightly cold’, *a hardish test* ‘somewhat hard’.

The second set of divisions is that between *lexical* and *grammatical* morphemes. Lexical morphemes are those which have a specifiable independent meaning. One can usually ask the following question of a lexical morpheme: ‘What is an X?’. For example, the word *book* is a lexical morpheme and one can ask the question ‘What is a *book*?’ Grammatical morphemes are also units which carry meaning. However, they only occur in combination with other lexical morphemes. It is this dependence on other morphemes which sometimes leads non-linguists to doubt whether grammatical morphemes really carry meaning. Examples of grammatical morphemes in English are the endings *-al*, *-ish*, *-ic* as in *comical*, *peckish*, *fantastic* (see further discussion below).

There is also a small class of morphemes which are both bound and lexical. A well-known example from compounding is *raspberry*: *berry* is an unbound lexical morpheme but *rasp-* only occurs in this combination and it is obviously not grammatical. With verbs there are series of bound lexical morphemes which are all derived from Romance loanwords. The morphemes *-ceive*, *-fer* in Modern English occur in a number of verbs, just consider *conceive*, *perceive*, *receive*; *transfer*, *prefer*, *confer* but they are not found on their own (see discussion below).

There are some elements which appear to straddle the interface of phonology and morphology in that they show properties of phonemes and of morphemes. Such an element is termed a *morphophoneme*. This denotes a unit which has two grammatical variants although it does not itself carry meaning. The two variants are always phonemes in the particular language. An example in English is {F} which has the realisation /f/ in *roof*, *half* and /v/ in *rooves*, *halves*. The origin of this variation lies in Old English where the plural ending caused the voiceless final fricative to become word medial and in this position the fricatives /f, θ, s/ were voiced: *rōf* : *rōfas*. The same principle lies behind the many other examples of morphophonemes in Modern English such as *life* : *lives*; *wife*, *wives*.

2.2 Word classes

Word classes are types of words grouped on the basis of their functions in sentences. They differ in their status and in the relations they may have with other words. Basically there are two categories of classes, the first carries lexical meaning and the second carries grammatical meaning. Those word

classes with lexical meaning refer to concepts outside of language. Nouns exist because we conceptualise entities in the world as discrete objects and name them individually. Verbs exist because we live in time and have a clear perception of action and change on a time axis. The attributes of lexical word classes reflect those in the extralinguistic world, e.g. number and natural gender with nouns or person, number and tense with verbs. Case relations (as noted above) must be distinguished on a formal level, for instance with regard to the inflections used to mark them, and on a semantic level in respect of the notions conveyed by cases. Grammatical word classes have a language internal function and typically serve to indicate relations between lexical elements in a sentence. For instance, prepositions can express a spatial or temporal relation, e.g. *Fiona is lying on the couch. Fergal is under the car.* Other grammatical word classes offer information about a lexical element, e.g. the definite article shows that the noun it qualifies is a certain member of a set, e.g. *The book Fiona published last year.*

1) Lexical word classes

NOUN A noun denotes something in the nonlinguistic world which is conceived of as an object in the widest sense. This includes beings (human and animal), physical objects and also ideas, feelings, notions each of which is regarded as forming a delimited whole, i.e. an 'object'. Because of the way human conceptualise, abstract notions, such as beauty, laziness, valour, are talked about as objects and expressed via nouns, e.g. *Fergal's laziness is exasperating.*

Nouns typically show number and case (not always formally expressed). They may also have gender, in the Indo-European languages, to which English belongs. Many languages do not have a formal gender distinction, e.g. Finnish and Turkish. Other languages may have more complex divisions and arrange nouns in classes, e.g. the Bantu languages of sub-Saharan Africa.

Nominal categories

Number is a distinction among nouns for at least (i) singular (one) and (ii) plural (more than one). Languages may refer explicitly to the number two and use a dual for this purpose or have a special form for a few (paucal).

Case is the formal marking of nouns depending on the relations they show with other word classes in a sentence. Typical cases are the accusative for the direct object and the dative for the beneficiary of an action, usually the indirect object. English does not have formal dative marking, this is shown by word order (indirect object before direct object) as in *Fergal gave Fiona her supper.* Languages with many inflections, e.g. Russian and German in Europe, normally have a means of formally expressing the dative, as in German *Klaus gab ihr das Geld zum Einkaufen* 'Klaus gave her-DATIVE the money for the shopping'.

Gender is a marking of nouns found in some languages. The labels used for the different gender categories are ‘masculine’, ‘feminine’, ‘neuter’ in the Indo-European languages. These terms suggest that gender has something to do with the sex of the object denoted, but this only holds for those nouns which have an animate referent, e.g. German *der Lehrer*, Russian *prepedavatelj*, both ‘the teacher’. Such cases of natural gender should not lead one to imagine that for languages with gender there is anything masculine about, say, a table (in German *der Tisch* or French *le table*). In such languages gender is a system of government, the noun *Tisch* in German ‘takes’ *der* as its form of the definite article. Some languages, like Russian, do not have a definite article but nonetheless specific forms of the adjective are governed by certain nouns, e.g. *bolshoi teatr* ‘big theatre’ but *bolshaya zemlja* ‘big land’.

English no longer has grammatical gender (this died out after the Old English period, after about 1100 AD) but only natural gender which demands one set of pronouns for males and another for females. Natural gender has been extended to technical objects to express admiration of them, e.g. *Did you see the schooner down in the docks? She’s a beaut!*

VERB Verbs fall into two broad groups, those which indicate an action or process, dynamic verbs as in *Fiona drove to Dublin*, and those which indicate a state, stative verbs as in *Fiona knows Russian*. Each set of verbs behaves somewhat differently because for the latter there is no extension in time or at least no implication of change. It is true that a sentence like *Fiona knew Fergal* implies that the state lasted for a certain length of time but there is no change involved which makes this type of verb inherently different from a dynamic verb as in the sentence *Fiona fell in love with Fergal* which does imply a change in state. Stative verbs do not normally occur in the progressive form, hence the ungrammaticality of **Fiona is knowing Russian* though some varieties, like South African English, are much more lenient in this respect.

Verbal categories

Person Verbs typically distinguish between the person talking, the person being talked to and the person talked about. These situations correspond to the first, second and third person. If one adds a distinction in number – singular and plural – then the figure is six. Many languages distinguish between males and females in the third person; some languages (e.g. French) also make this distinction in the plural. Other languages, like Finnish, do not even distinguish in the singular.

All European languages, except English and Irish, have a pronominal distinction between formal and informal address (but Swedish has more or less abandoned this, despite some slight revival of the formal term *ni* ‘you’-PLURAL). The pragmatic range of the two categories is not the same in each language, Russian has a different system from Italian for instance, but the

distinction is nonetheless present. In these languages one pronominal form is used for the formal, with the second person singular being employed for informal address (amongst acquaintances and relatives). Because formal address arose only after the Middle Ages, different languages have different pronouns, Russian and French use the second person plural, *vy* and *vous* respectively, German uses the third person plural *Sie*, Italian the third person singular feminine *lei*, etc.

For a fuller discussion of these issues, see section ??? below.

Number The distinction between singular and plural, found with nouns, is also characteristic of verbs. The second person singular and plural are used for one's interlocutor in a conversation. In English, because of the demise of *thou* (in general usage), there is no specific form for the singular. This has led to the use of *you* for the singular and some additional form for the plural in various varieties of English, e.g. *youse*, *ye*, *yeez*, *y'all*, *y'uns*, etc. A distinction can be found in the first person plural between an inclusive *we* (speaker and hearer) and an exclusive *we* (the speaker and someone else, not the hearer). In Tok Pisin (a creole spoken in Papua New Guinea) *youmi* is inclusive but *mipela* is exclusive. The third person is used for the individual who is the topic of the discourse. Some languages, such as German, allow one to use the third person pronoun for someone who is present in a conversation while other languages, such as English, tend to avoid this.

Tense Dynamic verbs denote actions and these take place in time so verbs also show distinctions for tense. The basic unmarked tense is the present which is usually now but in some cases is the time of the discourse (the topic of the conversation, e.g. with the so-called 'narrative present'). A special form is usual for the past and one for the future is also common. Not all languages have forms of verbs for these other tenses. In Germanic languages (as opposed to Romance or Celtic languages) lexical verbs do not have a form for the future. This is reached by employing auxiliary verbs, e.g. *will/shall* in English, *werden* in German, *ska* in Swedish. The present may also be used with future meaning especially if there is a temporal adverb indicating this, e.g. *The prime minister is going to Brussels tomorrow*.

The action of a verb may often be set in the context of another verb in which case one has a difference in time depth (in the past or the future). This is the origin of the pluperfect which indicates an action which took place before another, e.g. *Fergal had prepared the curry by the time Fiona got home*. An analogous tense for the future is the future perfect to be seen in a sentence like *The snow will have been cleared by the time you get there*.

Aspect Apart from saying when an action took place one can say how this happened, whether the action is completed or has just started, etc. In all these instances one is dealing with aspect. In (standard) English aspect exists in the

present of verbs, the simple present indicating habitual aspect, i.e. that something takes place at regular intervals as in *The government introduces a budget every autumn*. Many varieties of English, from Irish English to African American and Caribbean English, have formal means for expressing the habitual, e.g. *She does be worrying about the children, My cousin, he be home all day long*. The continuous form of English represents a progressive aspect, that is that an action lasts a certain length of time *Fiona was talking to the new students yesterday*. A further aspectual type, which is common across the world's languages, is the perfective which indicates that an action has been completed. Standard English does not have a formal perfective, though many varieties do, e.g. Irish English which uses the word order Object + Past Participle as in *Fiona has the work done* 'Fiona has finished the work'. Other varieties, such as African American English, use the past participle *done* in this sense, e.g. *She done spent all her money*.

Aspect can be lexicalised, i.e. involve two different verb stems. This is common in the Slavic languages, e.g. Russian *zamechatj* 'to notice'-IMPERFECTIVE : *zametitj* 'to notice'-PERFECTIVE. In some cases the perfective is shown by a specific prefix, typically *po*, e.g. *chistitj* 'to clean'-IMPERFECTIVE : *pochistitj* 'to clean'-PERFECTIVE. The perfective specifies that an action has been completed and the imperfective simply says that it took place.

Mood This is a category which characterises the mode of an action. The most common mode is the indicative which is used in declarative statements which denote real events or states, *Fiona is a teacher, Fergal drives a sports car*. The second mode is hypothetical, often called irrealis, and is formally expressed using the subjunctive in languages which inflect lexical verbs for irrealis. English only does this for the verb *be*, e.g. *If he were interested we could start immediately*. Otherwise the auxiliary verb *would* is used, e.g. *She would come if they were staying overnight*. Traditionally, a further mood is recognised, the imperative, though this is more of a sentence type determined by pragmatic factors such as the interrogative is, e.g. *Come here immediately! Can you come here for a moment?*

Objects Verbs are traditionally divided into categories according to whether they take an object and if so what type this is. The primary division is between transitive and intransitive, the latter being typical of actions which do not affect an individual other than the subject or result in a change in state in an object. Transitive verbs on the other hand do involve these effects. Hence the sentences *Fiona cooked the meal* and *Fergal broke the glass* show transitive verbs while *Fergal spoke* and *Fiona sang* shows two intransitive verbs. Whether a verb is transitive or not often depends on the manner in which an action is conceptualised. For instance, an action can be regarded as involving something specific in which case it is often transitive as in *Fergal considered the matter*

or *Fiona sang a beautiful song*, the latter showing a verb which optionally transitive. These instances are similar to a sequence of verb plus adverb, i.e. the object does not offer any new information beyond the verb itself, consider *Fiona's grandmother died a peaceful death* and *Fiona's grandmother died peacefully*.

Should a verb involve two objects then it is ditransitive. In English such verbs involve a direct and an indirect object, the latter often recognizable by its position before the direct object, e.g. *Fiona gave him a new tie*. Objects governed by prepositions are often semantically equivalent to indirect objects, as in *Fiona explained the problem to him* but are not always interchangeable, hence the ungrammaticality of **Fiona explained him the problem*.

Complements It is obvious from even a cursory glance at verbs that the elements governed by the verb can extend beyond a single or double object. In the sentences *Fiona persuaded Fergal to buy a new computer* and *Fiona asked Fergal to stop biting his nails* there is a direct object, *Fergal*, but also a further specification *to buy a new computer* and *to stop biting his nails* respectively. From a structural point of view one can see that this is part of the verb phrase. Such a phrase is labelled an infinitival complement. However, the verb in a complement need not be in the infinitive, e.g. *Fiona considered hiring a car for the holiday* (gerundial complement). The complement thus 'fills in' necessary information in the verb phrase and can often be substituted by *what* in an interrogative sentence, e.g. *Fiona considered what?* or *Fiona asked Fergal what?* Complements are elements of a sentence which are directly governed by a verb much as an object. With some verbs they are the equivalents of a direct object, inasmuch as it can occupy the same slot in a sentence, consider *Fiona wants a new car* with *Fiona wants to leave for Cork*.

ADJECTIVE Adjectives are used to specify an attribute of a noun. Normally an adjective is immediately adjacent to a noun, either before it (as in English) or after it (as in Irish) or occasionally before or after according to meaning as in French where *pauvre* which means 'with little money' it precedes its noun – *un pauvre homme* – and 'to be pitied' when it follows *un homme pauvre*. When an adjective is adjacent to the noun it qualifies it is termed *attributive*. Because of the close association with the noun in this position synthetic languages frequently demand that the adjective be inflected, cf. Irish *Tá na leanaí beag* 'The children are small' but *Na leanaí beag* 'The small children' or German *Die Kinder sind klein* but *Die kleinen Kinder* 'ditto'.

Another possibility is to use a sentence with the verb 'be' in which the adjective is *predicative* as in *Paddy is stubborn*. This type of sentence is called an equative sentence as the subject is equated with the predicate. The latter may be an adjective but also a noun or a prepositional phrase, for example: *Paddy is a plumber*; *Paddy is on his way to Sligo*.

There are restrictions on which of the two basic positions – attributive

or predicative – an adjective can occur in. For instance, the adjectives *asleep*, *awake*, *alive* only occur in predicative position as the ungrammaticality of phrases like **the asleep/awake children*, **the alive insects* shows. Other instances may involve more tendencies than clear distinctions, e.g. *He was upfront about his intentions*, but *?His upfront remarks startled the others*.

ADVERB This word class is a holdall for many different elements. The essential feature of adverbs is that they characterise a further element, usually a verb, hence the name adverb, i.e. something which accompanies a verb. Typical uses of adverbs are seen in *Fiona spoke nervously* and *Fergal drank the beer quickly*. A common extension of adverbs is to have them qualify a phrase or entire sentence. In such usage adverbs usually occur in initial position, e.g. *Undoubtedly, Fergal is determined to succeed* or *Surprisingly, Fiona did not enter the competition*. The function of an adverb can be fulfilled by a phrase as much as by a single word and such phrases can be employed for stylistic reasons, e.g. *Fiona spoke gently / in a gentle voice*, *Fiona spoke resolutely / in a resolute manner*.

2) **Grammatical word classes**

The word classes considered so far contain elements with independent meaning which is why they are termed ‘lexical’. Essentially, words with lexical meaning can answer the question ‘what does X mean?’. This does not apply to the word classes being considered in the present section. These are grammatical in nature, that is their function is to establish relationships in sentences (prepositions, conjunctions) or to bond sentences together into coherent discourse (pronouns) or to specify more abstract qualities like specificness (definite article) or genericness (indefinite article) or to point to individual instances of something (demonstrative pronouns), etc.

ARTICLE There are two forms of the article in English, the definite and the indefinite. As their names imply the former refers to a specific instance of a set, e.g. *The linguist we met yesterday*, or a random member of a set, e.g. *We need a doctor to attend to our child*. This is the simplest division but there are uses which do not fall into this scheme of things. For instance, the definite article can be used for typical representatives of a set, but not specific ones, e.g. *The English like toast in the morning*.

Not all languages have articles, Russian is a notable example of one which does not. Even if a language has articles it need not have both types. Irish has a definite article but no indefinite one, the absence of an article is equivalent to instances of the indefinite article in English *Bean cliste*, lit. ‘woman clever’.

The precise usage of articles can and does vary across languages. For instance, in English non-countable, abstract nouns do not take an article, consider *Fiona is interested in philosophy*. In German, however, the definite

article is used in such cases: *Sie interessiert sich für die Philosophie*, lit. 'She is interested in *the* philosophy'.

PRONOUN This word class covers a group of elements which have different functions. The original meaning of the word is of an element which stands for a noun, usually in cases where repetition of the noun is not preferred, e.g. *Fergal was here this morning. He was looking for some blank diskettes*. This usage illustrates a typical function of pronouns: they point back to a noun in a different sentence or clause. Elements which do this are called 'anaphoric' and play an important role in linking sentences together and thus establishing cohesion in discourse. The types of pronouns which fulfil this function are *primarily personal pronouns*. There are, however, other types. Possessive pronouns indicate possession or at least relevance to a certain individual, e.g. *my new car* refers to a car which presumably belongs to me. *My shoe size* on the other hand refers to the size of shoe which fits me, that is the shoe size is relevant to me but is not 'possessed' by me. The same is true of usages such as *His taste in wine, Their Ireland doesn't exist anymore*.

The term 'pronoun' is used with reference to a further group of grammatical elements, demonstrative pronouns. Their function is to 'point' to a noun, often by contrasting one near from one far away, e.g. *This man and that girl are an item*. The distance can be temporal, e.g. *That linguist you met at the conference last year* and slight distance can equate with relevance as in the use of *this* in sentences like *This problem has to be solved soon*. In general, linguists use the term 'deixis' to refer to the act of pointing, both literally and figuratively, both spatially and temporally. Common functions can be recognised across word classes if viewed from a deictic standpoint. For instance, both demonstrative pronouns and adverbs have deictic functions, e.g. *Last week they went for a meal together* points back in time as does *That day we had the boring meeting*.

DETERMINER In order to have a common label for elements which can come before a noun and specify additional aspects of its usage, linguists use the term 'determiner'. This encompasses all grammatical elements which can precede a noun and are part of the phrase of which the noun is the head, e.g. *this man, that silly teacher, the capital city, my new jacket*. An inclusive definition of determiner would also encompass quantifiers, as in *All students who qualify can take part. Some teachers are not prepared for their classes*.

PREPOSITION All languages have elements for expressing temporal and spatial relationships among lexical words. Frequently, one and the same word can be used for both purposes, e.g. *in the nineteenth century* and *in the house*. Such words are prepositions and can appear in a variety of contexts. For instance, *in* can occur in a prepositional complement, e.g. *I waited in the office*, as part of a phrasal phrase, *The gangsters wanted to do him in*, as part of a sentential

adverb, *In time we came to understand his point of view*. Some prepositions may involve two nouns as they express relative position, e.g. *Dark clouds were hanging over the city. The dog was under the table*. These cases are literal uses which are frequently matched by figurative applications, e.g. *We will not work under these conditions, She stayed there over a period of four weeks* where the notion of relative position is less tangible. These and similar instances illustrate a central feature of grammatical words: they are polyfunctional and the specific meaning is dependent on the context in which the word occurs. For example, the word just used, *over*, has the further meaning of ‘past in time’. This interpretation is obvious from the context in which it occurs, e.g. *The party is over* can only be read with this meaning.

CONJUNCTION In spontaneous discourse complex sentences are likely to occur. When expressing a stream of thoughts, we frequently link clauses and sentences to reflect the flow, e.g. *I came downstairs and she was gone although I told her I wanted to talk to her because we hadn’t a chance the night before and really it was quite important but I think she was annoyed with me and still I think she could have stayed a bit and then we would have had some time together despite the work which had to be done before she was free again*. We probably do not write such rambling sentences but they nonetheless illustrate the manner in which parts of a sentence can be linked in daisy chain fashion by using conjunctions of various kinds. The simplest conjunction is *and* which links two clauses which are not in a hierarchical relationship (the term *parataxis* is often used for this usage). Other conjunctions may signify a hierarchical relationship (the term *hypotaxis* is often used here) in which one clause is a main one and another a subordinate one, e.g. *She visited her aunt although she was pressed for time*. The type of subordinate clause is concessive in this case, another frequent type is a causal clause seen in *She glanced at the clock on the wall because her watch was broken*.

2.3 Inflectional morphology

In the remaining two sections of the current chapter a closer look will be taken at the two subdivisions of morphology mentioned at the outset. Recall that inflectional morphology comprises the endings in the grammar of a language, mainly the declensions of nouns and the conjugations of verbs but also changes made to other word classes (see above) under certain grammatical conditions. The addition of the *-e* in the genitive case of an Irish noun like *súil* ‘eye’ – *dath na súile* ‘colour of the eye’ – is a matter of inflectional morphology. The various conjugational forms of a verb are also instances of inflectional morphology, e.g. *walk, walks, walking, walked* are all forms of the verb WALK with an additional inflectional morpheme (note that the abstract form of a word, the lexeme, is written in capitals to distinguish it from actual forms which are found in italics). Inflectional morphology also encompasses the formation of noun plurals.

Languages like English, which are analytic in type (see section ??? on typology below) have very regular plurals, though languages with many grammatical endings, e.g. German and Russian, have many more plural types. In English /-s/ is the most common plural ending, but a small residue of common words have irregular plurals, e.g. *man : men, mouse : mice, tooth : teeth, ox : oxen*. The word *child* has a double plural – *children* < *child* + *er* + *en* – although neither *-er* nor *-en* are used productively in modern English. With less commonly used words, especially borrowings from Latin or Greek, there may be uncertainty about how the plural is formed, e.g. in a recent discussion about holding a referendum, this word appeared variously as *referedums* and *referenda* in the plural.

The process of attaching inflections to a lexical base is called *affixation* and there are three main types depending on the position relative to the base as outlined below.

PREFIX Any inflection which is attached to the beginning of a base is termed a prefix. Examples abound from the vocabulary of English where such elements are derivational (see next section), i.e. they form new words.

<i>re-make</i>	<i>un-kind</i>	<i>in-decent</i>
<i>re-read</i>	<i>un-tydy</i>	<i>in-accurate</i>

SUFFIX An inflection which is placed at the end of a word is a suffix. Grammatical inflections in English and in most other languages tend to occur as suffixes but many the latter also fulfil word formational functions are can be seen from the following brief selection.

<i>kind-ly</i>	<i>wait-er</i>	<i>book-s</i>	<i>walk-ed</i>
<i>quick-ly</i>	<i>play-er</i>	<i>mat-s</i>	<i>jump-ed</i>

INFIX There exists a further option, namely that of putting the affix somewhere in the middle of the word. This is a characteristic of languages from other families outside of Indo-European, for instance of Semitic: Arabic and Hebrew make much use of this possibility. In English there are practically no instances of infixation. Historically the /n/ in the verb *stand* ~ *stood* ~ *stood* may be an infix but this has never had a recognisable function in the development of the language. In contemporary English there is a case of infixation in colloquial speech. This is where an expletive is inserted into a polysyllabic adjective in order to reinforce it as in the following examples:

<i>impossible</i>	→	<i>in-fuckin-¹possible</i>
<i>kangaroo</i>	→	<i>kanga-bloody-¹roo</i>
<i>absolutely</i>	→	<i>abso-blooming-¹lutely</i>
<i>boomerang</i>	→	<i>*¹boome-bloody-rang</i>

desperate → *^l*desper-blooming-ate*

There is a condition on this insertion, namely that the stress comes after infix hence the last two examples above are not permissible.

2.3.1 *Other types of inflection*

Apart from affixation, inflections may involve other changes, typically those which alter the shape of the base on which they operate. However, prefixes and affixes are more common and are preferred by first language learners because the base remains constant and hence easily recognisable across grammatical categories. But in English one also finds the alteration of a base vowel to show a change in tense, this applying to those verbs which are traditionally referred to as strong, e.g. *ring* ~ *rang* ~ *rung*, *get* ~ *got* ~ *got*, *speak* ~ *spoke* ~ *spoken*.

The base to which an inflection is added may affect the appearance of an affix. In Turkish, for instance, there is a phenomenon known as vowel harmony which means that an inflection must take one of two forms, back or front, depending on whether the vowel in the base to which it is attached is back or front. Contrasting examples of this would be *evlerim* ‘my houses’ (morphologically *ev+ler+im* with front vowel endings) on the one hand and ‘?’ (morphologically with back vowel endings) on the other.

The Celtic languages (chiefly Welsh, Breton, Irish and Scottish Gaelic) are known for a further kind of inflection called ‘initial mutation’. Here grammatical categories are indicated by changing the beginnings of words. This can be seen with nouns, e.g. Irish *a chaisleán* /x-/ ‘his castle’, *balla an chaisleáin* /x-/ ‘the wall of the castle’ < *caisleán* /k-/ ‘castle’, and with verbs in the past tense and the conditional *cónaigh* /k-/ ‘live, dwell’, *chónaigh* /x-/ ‘lived’.

Finally one should mention a situation which is rare across the forms of a language, but common because found with frequently occurring words. This is *suppletion* by which is meant that the forms of a word show elements from two stems with different historical sources. For instance, English *go* has the past form *went* which comes from a different verb (cf. German *wenden* ‘to turn’), the two having coalesced in the course of time. The same is true of the verb *be* which contains elements from a verb *wesan* (cf. German *Wesen* ‘being’), namely *was* and *were*. Indeed in this case there are elements – such as *am* – from yet another stem and the forms of the present plural – *are* – were borrowed from Scandinavian, making the verb *be* in present-day English a veritable mix of forms.

2.3.2 *Status of inflectional morphology*

Present-day English is an analytic language, i.e. one which does not use inflections to indicate grammatical categories but rather individual words. For

instance, whereas a synthetic language like German uses a single dative form for pronouns English has a preposition with the general oblique form: *to him* or it relies on word order for the recognition of dative as a grammatical category: *He gave him the book / the book to him*, German *Er gab ihm das Buch* (*ihm* = he-DATIVE). Languages with different case forms for grammatical words tend to have flexible word order, this being exploited to highlight an element in a sentence, consider German *Ihm gab er das Buch* 'Him-DATIVE gave he the book', i.e. not to someone else.

In English the genitive is the only nominal inflectional category left. But it has been expanded in scope. There is a kind of genitive in current English known as the 'group genitive' to be seen in the sentence [*The president of Ireland*]'s *new hat* where the entire nominal phrase is treated as a single noun with the end of it carrying the 's of the genitive.

The group genitive is an example of the relaxation of grammatical requirements for inflection. This again characteristic of languages with little morphology. It would seem that the meaning of a sentence or phrase can override formal requirements. Consider *The police have arrived*, *The bank have written to you* where the subjects of the phrases are treated as plurals because notionally they are so. In a language like German this is impossible, there must be grammatical agreement between sentence elements, e.g. *Die Polizei ist gekommen* (not *sind gekommen* 'have come') 'The police has come'.

Morphology may very often have requirements which are at odds with the non-linguistic world which elements refer to. This can be seen clearly with nouns which are plural although their referents are singular – as with *trousers*, *jeans*, *pyjamas*; *means*, *contents*. There are also nouns which show no change, those which end in *-s* such as *series* and *species*. Still other nouns have come to be used in the singular although the reference is plural. This is often the case with the word *data*. What is happening here is that the noun is coming to be viewed as a collective noun like *information*. Singular reference is then achieved through the use of a phrase like *an item/piece of information/data*.

2.4 Derivational morphology

This area of morphology is concerned with all types of word formation, something which involves (1) the addition of affixes to bases or (2) the linking of two bases together. These processes can be divided into two basic types, those which maintain the word-class of the input base and those which change it, often called class-maintaining and class-changing respectively. For instance, a word like *superthin* consists of two adjectives, *super* and *thin*, linked to give yet another adjective. In the case of *brainy* the noun base has an ending suffixed to it to yield an adjective, a different word class. Examples of class-maintaining derivation from English would be negation prefixing or productive verbal prefixes like that indicating repetition: *un-* in *unfriendly* and *re-* in *redo* for example.

The other major area where class-maintaining derivations are found is that of nouns. Here the process of compounding is the major type, take a simple example like Irish *gearrscéal* ‘short story’ which consists of the adjective *gearr* ‘short’ and the nouns *scéal* ‘story’. Another example would be *leathscéal* ‘excuse’ from *leath* ‘half’ and *scéal* again.

Instances of word-class changing suffixation abound and can be quoted at random, e.g. *-ly* in *kingly*, *womanly*; *-ish* in *sheepish*, *foolish*. The change is not compulsory, this depends on the input form. Thus with *pink* : *pinkish* there is no change. There may also be an alternation in the stem on suffixation. For instance with adjectives deriving from country names this is common: *Spain* : *Spanish*; *Denmark* : *Danish*. The input word-classes for word formation vary greatly and will be discussed in more detail below.

Derivations in a language can be either transparent or opaque. They are transparent when the speaker immediately recognises the elements of which they are composed, e.g. *undoable* obviously consists of *un* + *do* + *able*. However, where the derivational process is not productive the matter becomes more difficult. Native speakers of English recognise that *warmth* is derived from *warm* + *th*. But when the vowel of the derived form is different from that of the base the case becomes less clear: *health* is derived from *heal* and would probably be recognised as such after a little reflection on the part of the native speaker. But if there is a change in vowel quality *and* if the meanings of the input and derived forms are different then the derivation can be justifiably termed *opaque*, that is the native speaker cannot recognise it intuitively. An instance would be *foul* and *filth*. The second word is from Old English *fylþ*. Before this the form was *fulþi*. Here one sees the /u/ which was in the adjective *foul* (the pronunciation /au/ results from an earlier /u:/). However, this is an historical explanation which is not part of contemporary speakers’ intuitions.

2.4.1 Types of word formation

Word formation in the broadest sense refers to the techniques employed in a given language to create new, complex lexical items from existing simple ones. These processes can be subdivided into a number of types. The first distinction is between those processes which are active in the present-day language and those which are fossilised. The former are termed *productive* while the latter are *lexicalised*, i.e. are no longer transparent to native speakers of the given language (see previous paragraph). Consider the ending *-wise* in present-day English which is productive.

Flatwise Dublin is not the best of places to be in.
Moneywise he seems to be managing quite well.

Lexicalised endings are those which cannot be used in new formations. The ending *-th*, as in *warmth*, *breadth*, etc. was mentioned above. Another instance

is *-dom* as in *freedom, kingdom wisdom*. This class is limited and no new members occur.

In the discussion of morphology so far the general term *base* has been used without further discussion. But in fact this requires a few further distinctions to be useful and accurate in an examination of word formation. Strictly speaking, a base refers to any unit to which any affix can be added (and in this meaning it has been employed in previous paragraphs of this chapter). Hence in derivational morphology one speaks of bases as these can take prefixes and suffixes used for word-formational purposes. You can view stems as a subgroup of the class of bases in a language.

Base: <i>big</i> ~ <i>bigger</i>	(comparative: inflection)
Base: <i>big</i> ~ <i>biggish</i>	(new adjective: derivation)

If the internal structure of bases are considered then one can recognise a subdivision into two main types. A *root* is the irreducible core of a word, that part which cannot be broken down further. There are many roots in English which are also bound morphemes as seen in the following examples (all of these are ultimately words borrowed from Romance languages, chiefly French or Latin).

<i>-mit</i>	<i>permit, remit, commit, admit</i>
<i>-ceive</i>	<i>perceive, receive, conceive</i>
<i>pred-</i>	<i>predator, predatory, depredate</i>
<i>sed-</i>	<i>sedate, sedentary, sediment</i>

A *stem* is the part of a word which exists before any inflectional material is added to it. A stem may be a root as in *house, dog, girl* but may already be complex, for instance where an element has been added to a root for some word formational reason. Consider the following examples where the stem is the result of deriving a noun from a verb. The inflection is then added to the result by suffixation.

<i>worker</i> (← <i>work</i> + <i>er</i>)	à	<i>worker-s</i>
<i>drinker</i> (← <i>drink</i> + <i>er</i>)	à	<i>drinker-s</i>

Not every instance of a stem, however, can be analysed as a root and a transparent ending. For instance, *butter* does not consist of *butt* + *er*.

2.4.2 Further issues in word formation

ANALOGY This is often a factor in the formation of new items. By analogy is meant that an existing word formational pattern is used to create a new word which is formally similar to that which acts as model. Thus in English one has

landscape and certain new formations like *cloudscape*, *seascape*, *waterscape* by analogy.

WORD FORMATION AND SPELLING In many cases the spelling of a new formation may show the loss of one or more letters as in *writer* (from *write* and *er*) or an increase as in *skinny* (from *skin* and *y*) with double *n*. This is an orthographical matter and not of linguistic interest.

Another issue here is whether compounds are written together, hyphenated or with a space between the elements. There is a large degree of variation here, especially among varieties of English. When deciding whether two separately words are actually a compound the stress provides the clue: where the first word has primary stress and the other secondary stress one is dealing with a compound otherwise with a syntactic phrase. Thus *fieldwork* ['fi:ld,wɜ:k] is a compound whereas *field size* ['fi:ld 'saɪz] is not. Of course, semantics can also be considered, i.e. *field size* is the 'size of a field' whereas *fieldwork* is not *work in a field* (in a literal sense).

WORD FORMATION AND SYNTAX In many analyses of word formation, linguists have attempted to set complex lexical items in relation to an underlying sentence. This was first practised seriously by early generative grammarians (in the late 1950s and early 1960s) and has been shown to be a valid and insightful means of analysing the internal structure of many compounds. To this end one can distinguish at least four basic types:

- 1) SUBJECT TYPE as in *shoemaker* which derives from *someone makes shoes*.
- 2) PREDICATE TYPE as in *waterfall* which derives from *water falls/is falling*.
- 3) OBJECT TYPE as in *drawbridge* from *someone draws the bridge*.
- 4) ADVERBIAL TYPE as in *writing table* from *someone writes at the table*; *closing time* from *someone closes at a certain time*.

The above types can be described more specifically by taking into account the exact grammatical relation in which the elements of the compound stand to each other. This then yields further sub-types as shown in the following instances.

- 1) SUBJECT-PREDICATE TYPE For instance *earthquake* from *the earth quakes*; *sunrise* from *the sun rises*.
- 2) PREDICATE-OBJECT TYPE Words like *bloodshed* from *blood is shed*; *handshake* from *someone shakes someone's hand*.
- 3) PREDICATE-ADVERBIAL TYPE For instance *boatride* from *someone rides on a boat*; *jetflight* from *someone flies on a jet*.

ASSIGNMENT OF STRESS Most adjectival formations in English conform to

phonological and morphological rules. Affixes can be divided into two types, neutral (1) and non-neutral (2). The latter are those which affect the base phonologically usually by attracting stress. For example, in the case of *-ic* one is dealing with a pre-accenting suffix (1) whereas *ee* is an auto-stressed suffix (2).

(1)	<i>'strategy</i>	<i>stra'tegic</i>	<i>'morpheme</i>	<i>mor'phemic</i>
	<i>'Mongol</i>	<i>Mon'golian</i>	<i>'grammar</i>	<i>gra'mmarian</i>
(2)	<i>de'tain</i>	<i>detai'nee</i>	<i>em'ploy</i>	<i>employ'ee</i>
	<i>'China</i>	<i>Chi'nese</i>	<i>'kitchen</i>	<i>kitche'nette</i>

In the first set (pre-accenting suffix) the stress shift also causes lengthening of the vowel (as in *strate[i:]gic* above). This is because there is a general correlation of syllable stress and vowel length in English. This is reinforced by the fact that unstressed syllables are usually short (unless diphthongs: *'pillow*, *'futile*) and reduced to schwa if the input is a short vowel: *'sofa*, *ca'nal*, *'children*).

The above suffixes are all of Romance origin, deriving from French or Latin often from the latter via the former. For a small number of words from the core of the lexicon there are similar native suffixes.

broad ~ breadth *wide ~ width* *long ~ length*

The term *lexicalised* is used to describe such cases. What is meant here is that no new formations on the basis of this pattern can occur. It is true that at some stage in the development of the language the pattern must have been productive, otherwise the forms would not exist, but in contemporary English they do not form a model for new words. Lexicalised formations need not be remnants of previous productive formations, there are also seemingly arbitrary instances. For instance, the adjectives from city names in England are good examples of this, consider *Liverpool* with the adjective *Liverpudlian*, *Manchester* with *Mancunian*, *Glasgow* with *Glaswegian*.

2.4.3 *The mixed lexicon*

Due to the many loanwords from French which entered English mainly in the Middle English period (*c* 1100-1500) the lexicon of the language has divided into two main parts, an older Germanic one, containing all those elements which were not borrowed, and a more recent Romance one, with elements from French. These borrowings not only consisted of entire words but also of derivational affixes which have come to be semi-productive in the course of time.

GERMANIC AFFIXES The ending *-hood* is found chiefly with Germanic bases (compare German *-heit*, Swedish *-het*). Due to the integration of Romance loans,

some may co-occur with this suffix, but the number is limited and there are many instances where such formations are not permissible.

*boy-hood, child-hood, girl-hood; *judge-hood, *author-hood*
parent-hood, nation-hood

As a relic of former stages of the language English has some Germanic suffixes which are not attached to Romance bases and which are not productive with Germanic bases either. A good example of this is the ending *-dom* (cf. German *-tum*) as in the following instances.

king-dom, free-dom, serf-dom

ROMANCE AFFIXES The affixes which entered English from French already had functional equivalents of Germanic origin. For instance, the ending used on a noun indicating someone who performs an action is *-er* in English (equivalents are found in other Germanic languages), e.g. *reader, speaker, drinker*. The French ending with the same function is *-ant* which is found only with French loanwords

<i>claim</i>	→	<i>claimant</i>	<i>serve</i>	→	<i>servant</i>
<i>inhabit</i>	→	<i>inhabitant</i>	<i>combat</i>	→	<i>combattant</i>
<i>take</i>	→	<i>*takant</i>	<i>put</i>	→	<i>*puttant</i>

Like many suffixes this is semi-productive. By this is meant that it occurs frequently but not in all possible cases. There are some instances of stems of Romance origin which take the Germanic ending *-er* such as *destroy* with *destroyer*, not **destroyant* as the agent noun. The same applies to *perform, employ, entertain* for instance.

In some instances there is a semantic distinction between an agent form with the Germanic suffix and one with the Romance suffix. Consider *defender* ‘one who defends’ as in *a defender of the faith* and *defendant* ‘the accused in a court of law’ as in *the defendant had a good lawyer*. This example illustrates a general principle in linguistic development: if two forms with the same function exist, then they tend to separate out semantically and acquire different meanings. The other option is that one of the forms dies out, for instance the verb *take* in English is a Scandinavian borrowing and completely replaced the Old English word *niman* which had the same meaning.

2.4.4 Phonological processes in word formation

In English there are many cases of unexpected variation in the sounds of words derived from a base. For historical reasons these have developed, posing difficulties for learners of the language as there is normally no set rule for

guessing what change takes place. However, one can generalise and say that the changes mainly involve a shortening of vowels when a disyllabic form becomes trisyllabic. There may be a change in the stressed syllable as the trisyllabic forms are nearly all stressed on the middle syllable and many of the input forms have initial stress.

<i>'author</i>	:	<i>au'thority</i>	<i>commerce</i>	:	<i>co'mmercial</i>
<i>sane</i>	:	<i>'sanity</i>	<i>se'rene</i>	:	<i>se'renity</i>
<i>'tutor</i>	:	<i>tu'torial</i>	<i>pro'found</i>	:	<i>pro'fundity</i>
<i>part</i>	:	<i>'partial</i>	<i>di'vine</i>	:	<i>di'vinity</i>
<i>o'bey</i>	:	<i>o'bedient</i>	<i>e'xample</i>	:	<i>e'exemplary</i>
<i>'number</i>	:	<i>'numerous</i>		:	

Apart from vowel shortenings and changes there are processes which lead to a change in consonant in a derived form. This process is called *velar softening* as the velar stop /k/ is shifted to the alveolar fricative /s/; it is only found among French loanwords.

<i>critic</i>	~	<i>criticism</i>	<i>fanatic</i>	~	<i>fanaticism</i>
<i>ascetic</i>	~	<i>asceticism</i>	<i>sceptic</i>	~	<i>scepticism</i>
<i>electric</i>	~	<i>electricity</i>			

It also applies to verbs if they can be derived from an adjectival input: *criticise*, *fanaticise*. In some cases there are alternations between three possible sounds depending on the word class involved, for instance the change of /t/ to /ʃ/ or /s/ between verb, noun and adjective as seen in the following examples.

<i>permit</i> /-t/	~	<i>permission</i> /-ʃ-/	~	<i>permissive</i> /-s-/
<i>submit</i> /-t/	~	<i>submission</i> /-ʃ-/	~	<i>submissive</i> /-s-/

Summary

- *Morphology* is concerned with the study of word forms. A *word* can best be defined in terms of *internal stability* (is it further divisible?) and *external mobility* (can it be moved to a different position in a sentence?).
- A *morpheme* is the smallest unit which *carries meaning*. An *allomorph* is a *non-distinctive* realisation of a morpheme.
- Morphology can further be divided into *inflectional* (concerned with the endings put on words) and *derivational* (involves the formation of new words).
- *Affixation* is the process of attaching an inflection or, more generally, a

bound morpheme to a word. This can occur at the beginning or end and occasionally in the middle of a word form.

- Morphemes can be classified according to whether they are *bound* or *free* and furthermore *lexical* or *grammatical*.
- *Word formation* processes can be either *productive* or *lexicalised* (non-productive). There are different types of word-formation such as *compounding*, *zero derivation* (conversion), *back formation* and *clipping*.
- For any language the distinction between *native* and *foreign* elements in the lexicon is important. In English there are different affixes used here and stress also varies according to the historical source of words.

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3 Lexicology

Lexicology is the study of the structure of a lexicon. It involves the examination of vocabulary in all its aspects: words and their meanings, how words relate to one another, how they may combine with one another, and the relationship between vocabulary and other levels of language such as phonology, morphology and syntax. Lexicology is linked closely on the one hand with word-formation (see discussions in previous section) and on the other with *lexicography* which is the compilation of dictionaries and the discussion of linguistic matters attendant on this. When discussing lexicological matters it is essential to distinguish between the mental lexicon which speakers have as part of their competence in their native language and the lexicon in the sense of a dictionary in which one looks for information about one's own or a foreign language. In the following discussion by lexicon is meant the mental lexicon of native speakers. In this connection one should also mention *etymology* which studies the origins of word meanings.

The lexicon of any language shows an internal structure. This is evident from the fact that the words of the mental lexicon are organised into word fields which in general have a basis in the outside world. However, one must be careful not to expect all differences in reality to be reflected in language, for instance in English there are separate words for animals and the meat gained from them, e.g. *cow : beef, calf : veal, pig : pork, sheep : mutton, deer : venison* but there is no special word for the meat of wild boar. This example is not as trivial as might at first seem. One can postulate that the reason for the lack of a word is that people are less aware of the matter in question. This means that the lexicon is likely to contain distinctions which speakers in a community consider important.

3.1 Awareness of the lexicon

Speakers' awareness of the lexicon varies from individual to individual and from language to language. Because one learns words on a stylistically higher level later in life (after childhood) those items which are located here are those which people think of consciously and using them usually involves a deliberate choice. Thus it is true that English speakers have two tiers of vocabulary which are distinguished by considerations of style, i.e. a more formal level and a more colloquial tier.

The more formal words mostly go back to French loans in the Middle English period or Latin borrowings since then. Rather than either replacing the original Germanic words or dying off as synonyms, they were hived off in the course of time from every-day language and became characteristic of more formal registers such as the written language. Examples abound of this

phenomenon, the word pairs *work : labour*, *freedom : liberty*, *see : perceive*, *begin : commence* are enough to illustrate the principle.

English has borrowed from French continuously since the Middle Ages. The earlier loans have come to be pronounced like English words and are thus not usually recognised as French. In one or two cases, like *garage*, an older pronunciation with initial stress and a later one with final stress is available. What one also finds is that a word has been borrowed twice, the two forms from the original root showing a somewhat different pronunciation today. Examples of this phenomenon are *hostel* and *hotel*; *cattle* and *chattels*; *catch* and *chase*; *risky* and *risqué*. In the last instance one can see the accent on the French <e> which is found in other more recent borrowings such as *élan*, *blasé*, *sauté*. Other examples of such recent loans are: *buffet*, *chauffeur*, *chute*, *connoisseur*, *couture*, *critique*, *cuisine*, *detente*, *elite*, *entrepreneur*, *etiquette*, *lingerie*, *machine*, *rouge*. What all of these words have in common is a foreign pronunciation in that the vowel values and stress patterns are not what one would normally expect in English, e.g. *buffet* is pronounced [bʌ'feɪ] (in imitation of French [byfe]) and not ['bʌfɪt].

French is by no means the only source of loans English during the past few centuries. Other Romance languages have provided words like *cappucino*, *pasta*, *chiaroscuro* 'dark-light in art' (Italian), *veranda* (Portuguese via Hindi), *incommunicado*, *aficionado* (Spanish), *cafeteria* (Latin American Spanish). Gaelic, German and Russian have also been sources for borrowings, e.g. *galore*, *hooligan*, *gob*, *bother* (Irish/Scots Gaelic); *umlaut*, *wanderlust*, *gestalt*, *ersatz*, *schadenfreude* (German); *sputnik* (Russian, used productively as in *beatnik*) while languages further afield have also provided lexical input to English, e.g. *pyjamas*, *shampoo* (Hindi), *yogurt* (Turkish), *admiral*, *albatross* (Arabic).

It is not true to say that all borrowings are located on a stylistically higher level. To determine this one should consider whether the word either belongs to a specific sphere of activity, say science or medicine as with *gestalt* for instance, or whether it is an alternative to a word which already exists colloquially as with *ask* and *request* or *get* and *obtain*. If neither of these situations apply, then the loan word is used informally, e.g. *shampoo* or *pasta*.

Furthermore, a common development is for words to percolate upwards from a lower to a higher stylistic level. In English this can be seen clearly in many words which have their source in ingroup slang or regional dialect and have become accepted in the standard with time. For instance, *gadget* derives from 19th century sailor's slang; *bloke* is from Shelta (a secret language of travelling people); *pal* is from Romani; *wangle* is from the jargon of printers; *spiv* has its source in the slang used on racecourses. In other instances an additional meaning is given to an existing word, e.g. *square* in the sense of 'conservative, conventional' has been taken from jazz usage. Still other words are of regional origin such as *scrounge* (originally 'to steal').

3.2 Terms and distinctions

As a separate level of language lexicology has terminology of its own. The *lexeme* is parallel to the phoneme and the morpheme and is used to denote the minimal distinctive unit in the semantic system of a language. It is an abstract unit which underlies the different grammatical variants of a form such as *sing*, *sings*, *singing*, *sang*, *sung* and usually corresponds to those forms which are quoted in a dictionary. However, the lexeme SING is not the same as the dictionary entry *sing* in that the latter is an actual form of the former, this representing the common core of meaning which is present in all the variants which a word may have.

The term *lexis* refers to the vocabulary of a language. The set of lexemes of a language is termed the *lexicon* and the structure of a language's vocabulary is its *lexical system*.

A *lexical set* is a group of items which share certain semantic features, e.g. *long*, *length*, *lengthen*, *lengthy*, *longitude*, *longevity* form a lexical set in that they are all derived from a basic element of meaning 'long'.

A *lexical gap* refers to an absent term which one would expect given other terms present in a lexical field (see below). For example, in English there is a gap in terms which refer to the maturation of food: it does not have a single word like German *durchziehen* 'develop in taste by not being eaten immediately' although it has verbs for the preparation/development/state of food such as *flavour*, *season*; *go sour*, *be bland*, etc.

Lexical selection refers to the semantic necessity to use certain words only in combination with other words in order to make sense, e.g. only animate nouns can normally be used with animate verbs, i.e. the sentence *My suitcase is learning to play the piano* is peculiar in that it violates just this lexical selection rule, although it is syntactically correct.

The term *lexicalise* is used to refer to a process whereby something in the outside world which is normally described by paraphrase in a language is given a single word to denote it. For example, the single English word *hail* has an equivalent in Irish, *cloichshneachta*, lit. 'stone snow', which is a description of the phenomenon using two independent nouns in the form of a compound.

3.3 Word fields

The term *word field* (or *lexical field*) is used to denote a collection of lexical items which are related by corresponding to a more or less natural grouping in the nonlinguistic world. Examples of such fields are the terms for colour, musical instruments, animals, furniture, clothes, vehicles, etc. The following shows the word field 'mental ability' and gives some of the more common terms found in Irish and English.

Irish *cliste* 'clever', *meabhrach* 'mindful', *intleachtach* 'intellectual',
 eagnaí 'wise', *stuama* 'sensible', *éirimiúil* 'intelligent', *glic*

	‘smart’, <i>gasta</i> ‘bright’, <i>ábalta</i> ‘able’, <i>beartach</i> ‘crafty’, <i>cleasach</i> ‘wily’
English	<i>clever, wise, cute, smart, sharp, intelligent, bright, cunning, quick, crafty, ingenious, wily, brilliant</i>

When speaking we choose words from word fields and deliberately manipulate the shades of meaning which elements of such fields have. Just consider how one would describe the mental abilities of one individual to another. Depending on one’s perception of the person to be described one would select an item from the relevant word field which one felt conveyed the shades of meaning which best matched one’s perception of the individual in question.

The ability to express oneself in a nuanced and differentiated fashion in one’s native language (and perhaps in a second language one knows well) is largely dependent on one’s intuitions concerning the connotations of elements of word fields. These intuitions result from language acquisition in early childhood when one’s stores much information concerning the use of words in specific contexts, over and beyond their basic meanings.

From the current discussion it will be obvious that one of the main difficulties in translation lies in determining precisely the position of a single term in a word-field and then finding an equivalent in range and connotation in the corresponding word-field of the language into which one is translating.

3.4 Lexicological processes in English

Even a brief glance at present-day English shows that there are many productive processes which concern the lexicon, that is which affect words with lexical meaning rather than grammatical elements or the pronunciation of words. The following paragraphs offer examples of such processes which should be considered in conjunction with the examples of word-formation discussed above.

COMPOUNDING Two nouns which are used together as a single word form a compound. Because of the lack of inflections in English, compounds are not usually formally marked, although in other languages they often are, e.g. German *Wohnungstür* ‘flat door’ < *Wohnung* ‘flat’ + *s* + *Tür* ‘door’. The link element *-s-* between the first and the second part of a compound is not normal in English though it is found occasionally, cf. *statesman*.

Compounds are a common source of new words in any language, just think of coinages like *road rage*, *binge drinking*, *designer drug*, *trophy wife*, *life-style magazine*. In present-day English it is also common to find compounds where the first element can be interpreted as deriving from a relative clause which qualifies the second element, e.g. *zero tolerance New York mayor* which can be paraphrased in a longer form as *the mayor of New York who shows zero tolerance of crime*.

CONVERSION This is the use of a word from one word class in another without any alteration in form. English has many instances of conversion:

<i>package</i> : (to) <i>package</i>	<i>detail</i> : (to) <i>detail</i>
<i>shelf</i> : (to) <i>shelf</i>	<i>fast track</i> : (to) <i>fast track</i>
<i>showcase</i> : (to) <i>showcase</i>	<i>security check</i> : (to) <i>security check</i>

Conversion has a considerable history in English, there are many examples in Shakespeare's dramas, for instance. In contemporary English conversion is rife, there are an ever increasing number of nouns which can be used as verbs simply by treating them as such.

BACK-FORMATION This is where a verb is derived from a noun. Normally nouns are created from verbs which already exist.

<i>vivisector</i> :	(to) <i>vivisect</i>	<i>burgler</i> :	(to) <i>burgle</i>
<i>brainwashing</i> :	(to) <i>brainwash</i>	<i>baby-sitter</i> :	(to) <i>baby-sit</i>

USING PREFIXES AND SUFFIXES The use of productive affixes (elements at the beginnings and ends of words) is common in present-day English to form new words. For instance, the use of Latinate elements is frequent with prefixed verbs: *anti-*, *de-*, *dis-*, *inter-*, *mis-*, *non-*, *pre-*, *pro-*, *re-*, *un-* and the Germanic prefix *self-*: *self-protect*. To make verbs the Romance ending *-ise* is very common *private*: *privatise* (there is a tendency for this to be written *-ise* in British and *-ize* in American English). Adjectives are formed using various endings which may imply a certain attribute, e.g. *-able* 'possible', e.g. *computable* from *compute*, *doable* from *do*, etc. Other endings are more neutral, such as *-y*, e.g. *spooky* from *spook*, or *-ly*, e.g. *princely* from *prince*. New adverbs commonly occur with *-wise*, e.g. *Spacewise the school is well-equipped*, and nouns with the Germanic *-er* (*stabilise* : *stabiliser*) or the Romance *-ee* (*detain* : *detainee*).

Native speakers are aware of the productive elements in their language and frequently use these to create words on the spot, so-called 'nonce formations'. During a public discussion about temporary employment the author once heard a speaker referring to those hired as *hirees*. This word is not established usage but it is obvious what was meant as it is analogous to equivalent term *employee*.

Productive suffixes may arise by generalising a fixed element of an original word where this element is associated with a specific meaning. An example of this is the element *-burger* (indicating a filling in a bread roll normally sold in a fast-food chain) as in *hamburger* which has been extended to give *beefburger*, *cheeseburger*, *fishburger*, *veggieburger*, etc. Another instance is *-ery* (originally indicating a shop selling specific commodities) as in

upholstery, buttry, knishery ‘shop selling baked or fried pastries’ (Yiddish). The ending *-eria* as in *pizzeria* or *cafeteria* has come to be used in a similar fashion, e.g. *spaghetteria, pasteria*. Yet a further instance of this would be *-aholic* (indicating compulsive behaviour) as in *alcoholic* (the origin of the use) which has been extended by using different word stems, e.g. *workaholic, sportaholic* (see blending above). What is interesting in this instance is that *-aholic* contains the ending *-ic* and half of the stem of *alcohol*. The reason for this is probably rhythmic: the ending *-aholic* is phonetically [-ə'hɒlɪk] which means that when preceded by a stem consisting of a single syllable the stress pattern [ˈ-ˈ-ˈ] results. This consists of two iambic feet and is thus a rhythmic structure which is very much in keeping with the prosody of English.

Apart from productive suffixes, as just discussed, some may be fossilised, i.e. only contain a limited set of attestations, e.g. *hamlet* ‘small village’ (which contains a form of the word *home*), *starlet* ‘minor (film) star’. Care should be taken not to confuse suffixes with parts of a compound which may be written the same, e.g. *outlet* derives ultimately from ‘to let out’ and not from ‘small exit’.

ABBREVIATED FORMS These consist of polysyllabic words which are commonly reduced to one syllable (often called truncation) *ad* ← *advertisement*, *bus* ← *omnibus*, *cab* ← *cabriolet*, *nylons* ← *nylon stockings*, *perm* ← *permanent wave*, *prefab* ← *prefabricated house*, *plane* ← *aeroplane*, *pub* ← *public house*, *van* ← *caravan*, *telly* ← *television*, *decaff* ← *decaffeinated coffee*, *disco* ← *discothèque*, *mag* ← *magazine*, *deli* ← *delicatessen*.

Some of these abbreviations derive from two separate words. There are instances which consists of just one of the two words, such as *soap* from *soap opera*. With others the results is not immediately recognisable from the source, e.g. *soccer* from *association football* or *bobby* from *Robert Peel*, the founder of the modern police force in England in the 19th century. Yet other abbreviations have become so common that the original full form is now hardly known, e.g. *pants* ← *pantaloons* or *mob* ← *mobile vulgus*.

Abbreviations in their turn can be used productively in new formations based on the shortened form. Two good examples of this are (1) *eco* from *ecology/ecological(ly)* which has spawned a whole series of formations such as *eco-friendly, eco-disaster, eco-tourism*, etc. and (2) *bio* from *biology/biological(ly)* which has resulted in *bio-sphere, bio-warfare, bio-diversity*, etc.

LEXICALISED BRANDNAMES IN ENGLISH These occur quite frequently, e.g. *She hoovered the floor* (from Hoover a brand of vacuum cleaner), *She xeroxed the article* (from the firm Rank Xerox which produced the first photocopier), *She liked his Cologne* (from Eau de Cologne, a well-known perfume), *She asked for a Kleenex* (a paper tissue). Such instances usually stem from the name of the firm which first produced an article or from the name of the article itself.

COINAGES These are completely new words, usually names for commercial products. A famous example is *Kodak* which was invented by the camera company with the express intention of being pronounceable in the main European languages in more or less the same way.

BLENDING This consists of combining two words, usually with some alteration in the process, usually a reduction in the number of syllables. Blendings are very productive in present-day English. *Brunch* ← *breakfast* + *lunch*; *ginormous* ← *gigantic* + *enormous*; *motel* ← *motor hotel*; *smog* ← *smoke* + *fog*; *workaholic* ← *work* + *alcoholic* (cf. *chocoholic*, *sportaholic*, *shopaholic*, etc.); *guestimate* ← *guess* + *estimate*; *chunnel* ← *channel* + *tunnel*; *motel* ← *motor* + *hotel*.

EXPRESSIVE WORDS These form a curious group in English because they do not always have a clear origin: *pizazz* ‘energy, verve’, *gunge* ‘sticky, mud-like substance’, *zany* ‘idiotic, ridiculous’ (possibly from Venetian Italian *Gianni*, a figure in comedy). The expressive character of such words depends heavily on the presence of certain sounds such as /z/ or /ndʒ/.

A further subtype of expressive words are so-called ablaut-motivated compounds. These involve two words which are phonetically identical but for a change in the stem vowel, a common alternation between /i/ and a low or low back vowel /a/ or /ɒ/ *shilly-shally*, *wishy-washy*, *zig-zag*, *dribs and drabs*; *flip-flop*; *bric-a-brac* (borrowed from French).

AUGMENTATIVES One of the effects which modern commercialism has had on languages is that words expressing a greater degree of something, so-called augmentatives, have become very common, e.g. *giga*, *hype* (from *hyperbole*), *mega*, *macro*, *mammoth*, *super*.

SEMI-PHONETIC SPELLINGS Deliberate semi-phonetic spellings in names of shops, companies and products are increasingly common in the English-speaking world: *nitebite* (takeaway open late at night), *kwik kleen* (prompt dry cleaners), *xpress* (rapid parcel service). These have become increasingly common in situations where little space is available for long words, e.g. on computer displays, signs or on credit cards. Examples are *thru* (for *through*), *xing* (for *crossing*), *hi* (for *high*).

HEADLINESE Headlines in newspapers result in much reduced sentences due to the contingencies of space. An actual example of this is *Judas kiss killer gang head given life*, i.e. ‘the head of the killer gang which gave a Judas kiss to its victim was sentenced to life imprisonment’. The type of reduction found in headlines must of course be in keeping with the syntax of the language in question, for instance in the example just quoted one sees the suppression of the

agent in the passive construction, probably the judge in a court. Equally one finds nouns placed in front of others in an adjectival function, i.e. *Judas kiss + killer + gang + head*. Both these structural features are permissible in English in general.

BUZZ-WORDS These are fashionable words, frequently from certain areas of occupation or interest. Computer terms provide many instances, *RAM, floppy, hard disk, USB stick, cache, firewall, internet*. Further examples are adjectives which enjoy a popularity at a given time, e.g. *cool, hip, gross*, etc.

ACRONYMS Here the letters of the abbreviation are pronounced phonetically, i.e. as if they were a real word, e.g. *NATO* (North Atlantic Treaty Organization), *WHO* (World Health Organization), *WASP* (White Anglo-Saxon Protestant), *AIDS* (acquired immune deficiency syndrome), *BSE* (Bovine Spongiform Encephalopathy), *MCP* (Male Chauvinist Pig).

INITIALISMS In the case of ‘letter pronunciations’ the name consists of each letter pronounced individually as in *BBC* [ˈbiːˈbiːˈsiː] (British Broadcasting Company), *BA* [ˈbiːˈeɪ] (British Airways). There are differences between German and English here: the former has *VIP* as [vɪp] (an acronym) and the latter has *VIP* as [ˈviːˈaɪˈpiː] (an initialism); the same applies to *UNO* (United Nations) which is [uːnoː] in German (an acronym) and [ˈjuːˈen] in English (an initialism). Bear in mind that initialisms always have level stress.

3.5 Questions of style

Differences in style which are found among individuals or groups in either spoken or written language. Style rests on a set of choices which people make when using language. The tendency of an individual to make similar choices – grammatical, syntactic, lexical, pragmatic – constitutes the style of that person. Beyond the style of an individual one can recognise patterns of usage in groups which justify divisions of style according to levels as shown in the following sections.

- 1) colloquial
blockbuster ‘very effective device’, *boffin* ‘scientist’, *buddy, chap, chatterbox, elevenses* ‘break for tea / coffee at 11.00 AM’, *gal, half-baked, lad, mum and dad, rumpus* ‘noisy behaviour’.
- 2) formal
carnevore ‘meat-eating’, *commence* ‘begin’, *devine* ‘guess’, *edifice* ‘building’, *efficacy* ‘capacity to produce effects’, *elevation* ‘hill’, *rectitude* ‘honesty of character’, *sibling* ‘brother or sister’, *spouse* ‘husband or wife’, *tenuous* ‘slender’.

- 3) literary
brine ‘salt water’, *presage* ‘foretell’, *prescient* ‘able to guess what will happen’. There are also literary usages of everyday words: *cheat* ‘escape’ as in *The climbers cheated death*; *breathe* ‘live’ as in *As long as I breathe*.
- 4) archaic
apothecary ‘chemist’, *din* ‘noise’, *to wend* ‘to go’.
- 5) jocular
to underwhelm ‘not to impress’ (analogous to *overwhelm*)
- 6) derogatory
anecdotal ‘not properly researched’, *blowsy* ‘coarse, untidy, red-faced’, *egghead* ‘intellectual, theorist’, *politicking* ‘acting for one’s personal benefit in politics’, *stinger* ‘miserly person’, *unspectacular* ‘not of particular value’. Some endings have a derogatory connotation, e.g. *-eer* as in *racketeer*, *profiteer*; *-ery* as in *themeparkery*, *dotcomery* probably on an older model like *skullduggery*, *trickery*.
- 7) euphemistic
bathroom, *cloakroom*, *developing world* ‘third world’, *economic co-operation* ‘developmental aid’, *plain* ‘ugly’, *powder-room* ‘toilet’, *senior citizen* ‘old-age pensioner’, *wash your hands* ‘go to the toilet’. Many euphemisms in English are the result of applying ‘political correctness’ to an area or activity. For instance, *air hostesses* are now called *flight attendants*. *Dustmen* have been termed *sanitation workers*.
- 8) slang
baloney, *dud*, *lousy*, *lout*, *nitwit*, *nutter*. Sometimes slang involves the use of neutral words in a special sense, e.g. *to lick* in the sense of ‘defeat’ as in *They licked the team from the other town*; *to rat* in the sense of ‘betray’ as in *They ratted on us in the end*.
- 9) vulgar
arse, *backside*, *bastard*, *bloody*, *bugger*, *bullshit*, *bum*, *butt*, *fecking*, *fucking*, *gobshite*, *piss*

The reaction of hearers to words from different levels varies greatly, particularly to those regarded as vulgar. In general one can say that the more words are used the less the effect they have on hearers. For many English speakers nowadays the third item from the end in (9) above is perfectly innocuous, for others it is still a cause of offence when used.

Summary

- *Lexicology* investigates the internal structure of the lexicon.

Lexicography concerns the compilation of dictionaries. *Etymology* is about the historical development of word meanings.

- A *lexeme* is the minimal distinctive unit in the semantic system of a language. A *lexical set* is a group of forms which share a basic meaning. A *lexical gap* is a missing item in a language's lexicon and *lexical selection* concerns what words can combine with what others, e.g. what nouns are permissible with what verbs.
- A *word field* is a collection of words which are related by a common core of meaning, such as furniture, plants, colours, the instruments of an orchestra or whatever.
- *Lexicological processes* are variously active in a language and, along with borrowing from other languages, form the main source of new words. Such processes include compounding, conversion, back-formation, abbreviations, coinages, and blendings.

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4 Syntax

The term *syntax* (← Greek ‘arrangement’) is used to refer to the rules of a language for the grouping of words into larger units, i.e. sentences. The basic unit of syntax is the sentence just as the morpheme is that of morphology, for example. When dealing with the sentence the first matter to stress is that its formation is rule-governed. This fact is obvious if one considers for a moment how a child acquires a language. To begin with children are exposed to the speech of others around them (their family, playmates, etc.). They slowly learn to abstract from sentences they hear the structures which lie behind them. Equipped with this structural knowledge they can then at a later stage produce sentences not necessarily heard before. This is known as the generative aspect of syntax. Children after the age of 6 or 7 have a store of words (a lexicon) and a set of sentence patterns abstracted from what they heard in the first few years of life. By combining the two they theoretically have access to an infinite number of sentences. Each sentence has a definite structure which is in keeping with the rules for sentence formation in a given language, i.e. it is *well-formed* (the latter is a purely descriptive term and means that a sentence would be acceptable to native speakers of a language).

Linguists assume that we all possess an *innate language faculty*, which is part of our biological makeup and which enables us to acquire the grammar of our native languages well, quickly and without any instruction. The language faculty is present in our brains, but not accessible to our consciousness. It consists of what is technically called *universal grammar* (see below for further remarks), a specification of the structures and rules which are possible in human language. During early childhood the language faculty combines with the raw data of the child’s surroundings to give a mental grammar of this language (a subset of universal grammar with specific settings for certain parameters, see section ???).

Language faculty (universal grammar) + exposure to language X →
Mental grammar of language X

Support for the assumption that we all have an innate language faculty comes from the fact the grammars which children construct during childhood are remarkably uniform across groups of individuals. Furthermore, the ability to acquire and use language proficiently is largely independent of intelligence.

The mental grammar which we construct during childhood forms the unconscious knowledge of our native language which we carry throughout our lives. It is this knowledge which we use when we speak. We can also tap into it on demand, for instance when judging language produced by others. This can be shown quite easily. Imagine a situation where a foreigner asks a native speaker

of English (not a linguist) to correct something which the former has written in English, say an important letter. The English speaker then reads the text and judges this according to his/her *intuitions* about the English language. By 'intuitions' one means the unconscious knowledge which results from language acquisition in early childhood. It is important to stress that this knowledge is unconscious: speakers have intuitions about grammaticality but they cannot formulate the rules of syntax on demand. Hence in the hypothetical situation just described, the English speaker will probably wish to change parts of the foreigner's letter without necessarily giving linguistic reasons for wishing to do so. Most likely, the English speaker will offer alternatives or re-formulate sentences in such a way that they are spontaneously acceptable to other speakers of English.

4.1 The nature of linguistic theory

In the past fifty years or so, theories of linguistics have been closely connected with research on syntax. The only level of linguistics which shows a comparable concern with theory is phonology where many alternative models exist.

What is a theory? A linguistic theory is a system of assumptions which attempt to explain the nature of human language and which is based on principles independent of the data of any individual language. There are a number of criteria which any theory of language should meet.

Economy The number of constructs assumed should be kept to a minimum, the assumption being that the human language faculty avoids unnecessary proliferation of structure and principles.

Simplicity The constructs themselves should be maximally simple in structure. Defining simplicity has proved a difficult task and there is no accepted algorithm for doing this.

Generality The statements made about language should apply to the maximum number of languages and the greatest number of levels within each language.

Falsifiability Any statement about language should be inherently falsifiable. If not the statement could be false and it would be impossible to demonstrate this.

In addition to the above, a linguistic theory must fulfil three important criteria of *adequacy*. In the early years of generative grammar these were outlined by Chomsky with reference to the theory which he himself had developed. The first type is *observational* adequacy which a grammar shows if it generates the data observed for a particular language correctly. The second type is *descriptive* adequacy which applies if the grammar expresses all linguistically significant generalisations concerning the language in question. The third type is *explanatory* adequacy which a grammar can be said to possess if it offers a principle basis for deciding between competing grammars all of

which show descriptive adequacy. The search for these three types, above all, for the last, has guided the alternations and mutations which generative grammar has gone through over the past few decades. The major versions will be outlined briefly below (from section 4.4. *The study of syntax* onwards).

4.2 Why analyse sentence structure?

Research on syntax has been particularly intensive in the last 50 years or so. By and large one can recognise three main aims in the analysis of sentence structure contained in this recent literature.

- 1) to reveal the hierarchy in the ordering of elements
- 2) to explain how surface ambiguities come about
- 3) to demonstrate the relatedness of certain sentences

To this end linguists have developed a series of tools which render visible the structure which they assume to lie behind sentences. The mechanisms for analysing sentences vary great from one syntactic model to the next and within a given school of syntax there may well be many changes during its development. This is particularly true of *generative grammar* which has been the subject of detailed research ever since the publication of Noam Chomsky's seminal study *Syntactic Structures* in 1957. Whatever the devices used to represent sentences in linguistic studies, the goal of the technique is to uncover internal structure, accounting for the particular orders of words found in the sentences of a language. To this end linguists normally distinguish between a level of structure which is not visible – what one can loosely call *deep structure* – and a level which corresponds to the actual form of a spoken or written sentence, what one can loosely call *surface structure*. Major syntactic relations in sentences, such as subject, object, predicate are taken to be specified at the level of deep structure while more minor matters such as the order of elements (as in active and passive sentences) are assumed to be determined in the process of generating the surface structure.

When talking about deep and surface structure it is important not to assume that these terms are used in a vertical spatial sense. By 'deep structure' is meant a level of representation where the meaning of the sentence structure is unambiguous and where basic sentence structures are to be found before they have been altered, i.e. gone through possible transformations (movement rules), deletions, etc. Whether this corresponds to some mental level or a stage in a process prior to actually speaking a sentence is not known (Chomsky himself has been very sceptical about this) and there is at present no way of finding out. The validity of deep structure is found in its ability to disambiguate sentences and to show links between types of sentences which are not evident on the surface.

4.2.1 *Acquisition of syntax*

In the first part of the 20th century there was a school of thought in psychology called *behaviourism* which maintained that children gained knowledge of their native language by imitation. This notion became controversial in linguistics with the advent of generative grammar in the 1950s. Basically it was a stand-off between imitation and generation: the first standpoint maintained that sentences are learned by children imitating the language of adults, ultimately learning sentences off by heart, while the second standpoint claimed that adults can produce sentences because of the process outlined in the following table.

Input	Language heard in child's surroundings
Step 1	Abstraction of structures from actual sentences
Step 2	Internalisation of these structures as syntactic templates (unconscious knowledge)

The untenable nature of the behaviourist argument has repeatedly been pointed out and it is worth remembering: if one learns by imitation then one should not be able to produce a sentence which one has never heard before. But this is patently untrue. The majority of sentences which we utter are unique. The point here is not so much that the behaviourists maintained that all knowledge of syntax is acquired by imitation as that they did not apply sufficiently stringent principles to the linguistic side of their arguments and did not think through the consequences of their standpoint to its logical conclusion. But just this was done by the generativists and their conclusion was that knowledge of syntax is acquired in early childhood, stored in abstract form and accessed later any time one wants to utter a sentence.

4.2.2 *Sentence production*

Given that children acquire syntax by abstracting structures from the actual sentences they hear in their surroundings, it is fair to assume that the production of sentences as outlined in the steps below apply to all speakers using their native language.

- 1) Choose a sentence structure (an empty template)
- 2) Fill the slots in with words (lexical insertion)
- 3) Utter the actual sentence

Other steps may be involved in producing particular sentences. Take the case of active and passive sentences. It is obvious that these are related in meaning and there is a clear relationship in form as well, seeing as how the object of the active sentence becomes the subject of the passive one and the subject of the active sentence is expressed (optionally) as a prepositional object. One can

safely say that active sentences in English are statistically more frequent than passive ones – these are used for topicalisation (special emphasis of the semantic object of the active sentence) or to avoid mentioning the semantic subject by omitting the prepositional phrase in the passive sentence. So there is a sense in which active sentences are more basic and passive ones are secondary. This fact has led linguists to imagine that the relationship between the two is one of *derivation*: first speakers choose a template for an active sentence and then alter this into a passive sentence. There is much disagreement here, for example, some linguists maintain that the derivation does not take place during production but is merely a shorthand for expressing the obvious formal relationship between the two types of sentence.

In older models of syntax it was assumed that these sentence types, such as active and passive, were related by so-called transformations, changes in structure which were assumed to correctly account for the observed relationships. These transformations tended to be dropped more and more out of syntactic models in the 1970s and 1980s and replaced by other, simpler devices. Later they came to be termed ‘movement rules’ and were greatly reduced in number. They are seen as notational means of indicating the relatedness of sentence types.

Whether derivation, such as that of passive from active sentences, takes place during production or not, one can nonetheless recognise that many sentence types are related to others which are similar in meaning and form. For instance, interrogative and imperative sentences can be described in terms of a basic sentence from which an interrogative or an imperative one is derived. Whatever the precise status of such relatedness is in our mental grammar, it is fair to assume that we do not store separately declarative, interrogative and imperative sentences like the following – this would be inefficient and unnecessarily block mental resources which could be use for other purposes.

Declarative	<i>Fiona read the new book.</i>
Interrogative	<i>Did Fiona read the new book?</i>
Imperative	<i>Fiona, read the new book!</i>

4.3 The structure of clauses and sentences

4.3.1 *Form and function*

The words in sentences can be classified in various ways and it is sensible to first distinguish between form and function. According to form, a word can belong to a certain lexical class, for example the word *umbrella* is a noun. According to function a noun may typically be a subject or an object (*The umbrella fell off the stand* versus *He bought the umbrella*). The major lexical categories involved in forming sentences are nouns and verbs, they are also

many grammatical words as shown in the following.

Lexical words

Nouns, verbs, adjectives, adverbs

Grammatical words

Auxiliary verbs

may, might, must, will, can, could, should

Determiners

Definite and indefinite articles, demonstrative pronouns, possessive pronouns

Prepositions

on, over, towards, under, against, beside, at, around

Personal pronouns

I, you, he, she, it, we, they; me, his, her, its, us, them

Quantifiers

very, more, too, a lot, all

Qualifiers

maybe, never, almost, always

Conjunctions

and, or, although, but

There is not complete agreement here. Prepositions are regarded by some scholars as lexical words with descriptive content and by others as mere function words. Certainly their lexical status is different from that of nouns or verbs which have maximum descriptive content.

Overlap between certain categories is also found. For instance, some personal pronouns can function as determiners in sentences like *We teachers don't believe you linguists*. One should also remember that varieties of English may have different category assignments than the standard language. The oblique personal pronoun *them* functions as a demonstrative in many varieties, e.g. *Them linguists have no standards*, to mention one well-known example. Other varieties do not require the infinitive particle *to* in the complements of certain verbs, e.g. *Fiona allowed Fergal [to] stay. She helped him [to] get out of bed*.

A key difference between grammatical and lexical words is that the former cannot be 'stacked'. By this is meant that grammatical words occur one at a time but lexical words can have multiple instances at the same point in a sentence, for example *She is a beautiful, elegant, sophisticated, young lady. She stole, deceived, cheated, lied and slept her way into that job*. But this is not possible with grammatical words: **This, her, a new computer*. Cases like *Her one interest in life* contain *one* functioning as an adjective. This can be shown by a simple substitution test where *one* is replaced by the adjective *sole* which retains the meaning of the sentence: *Her sole interest in life*.

The lexical words can furthermore form so-called *phrases*, that is groups of words in which a lexical word is the head or dominant element. For example,

the phrase *this particularly interesting film* is a noun phrase, consisting of a head noun *film*, an adjective *interesting* which is qualified by the adverb *particularly* with the demonstrative pronoun *this* preceding all the other words. The head of a phrase does not have to be the first element. In fact in English it rarely is because in this language the elements which co-occur with heads, so-called modifiers, precede these. Other languages have the reverse order. In Irish, for example, modifiers follow their heads as can be seen from the phrase *an scannán an-suimiúil seo*, lit. ‘the film very interesting this’. Rather than considering position to determine the head of a phrase, it might be advisable to search for the element without which the phrase would be incomplete. In the English phrase just given one can see that *film* is the element which is indispensable for the noun phrase, deleting or substituting other elements will not change the kind of phrase, e.g. *this interesting film* or *a particularly interesting film* are still noun phrases whereas *this particularly interesting* is not.

Because phrases are larger structures which incorporate individual words they occur further up in tree diagrams as will be seen presently.

4.3.2 *Arguments and complements*

Arguments are the constituents which occur in sentences because of the requirements of verbs. A traditional binary division recognises intransitive and transitive verbs, i.e. those without an object – *Fiona smiled* – and those with an object – *Fiona has eaten the potato*. The latter group is in fact more complex and allowance must be made for ditransitive verbs – *Fiona gave Siobhan the new book* – some of which have prepositional or clausal complements – *Fiona spent her holidays in Connemara*. *Fergal regarded her as his potential successor*. Still others can take a past participle in adjectival function, e.g. *He thought the matter closed* or have a prepositional object, e.g. *Fiona cooked a meal for Fergal* or show an infinitival complement, e.g. *Fiona intends to write a novel*.

In connection with argument types one can mention the group of *small clauses* which consist of a noun and a following verbal phrase which can together be regarded as a complement, e.g. *Fiona made [Fergal sit down]*, *Fiona considers [him devious]*. Small clauses include such traditional complement types as *accusative and infinitive*, deriving from Latin, which denote the complements of certain verbs which take a direct object and an infinitival complement as well, e.g. *Fiona asked [Fergal to stop]*, *Fiona ordered [the student to be quiet]*.

In general, the term *complement* can be used to denote constituents which occur in object positions after verbs. Some verbs allow variation among their complements, for example *consider* can take a nominal object – *Fiona considered the matter* – or a small clause – *Fiona consider [the matter difficult]*.

The element which introduces a complement is a *complementiser*, abbreviated to COMP. There are different types, most of which are found before clausal complements (1 to 3 below). A complementiser can also be found introducing a complex nominal (4 below) which acts as the complement of a verb.

Fiona thinks that Fergal is lazy
Fiona wonders whether Fergal is lazy
Fiona questioned if Fergal was sincere
Fiona was concerned for Fergal's safety

The first example show the word *that* acting as a complementiser. This suggests the word belongs to a different category than *that* in its determiner function. Syntactic patterning is the justification for this. One can show that the noun qualified by the determiner *that* can be deleted but the complement introduced by the complementiser *that* cannot, consider the following sentences.

Fiona regretted that move à *Fiona regretted that*
Fiona thinks that move was wrong à **Fiona thinks that*

In many sentences one finds elements that are optional. Here linguists may speak of *adjuncts*, those elements which can be omitted without affecting the grammaticality of a sentence, e.g. adverbial phrases as in *Fiona left (in a huff)*.

4.3.3 *Thematic roles in sentences*

If one now considers the role of elements in a sentence from the semantic perspective one can offer a classification of these semantic roles. Work on such roles began in earnest in the 1960s and in the government and binding model of generative grammar (see below) these were defined explicitly. The following is a list of the most common roles.

- 1) *Theme (patient)* : the entity undergoing an action, change of state, etc., e.g. *Fiona fell asleep*.
- 2) *Agent* : the initiator of an event or action, e.g. *Fergal bought a bicycle*.
- 3) *Experiencer* : the entity which experiences a state, e.g. *Fiona was despondent*.
- 4) *Benefactive* : the entity which benefits from an action *Fergal bought flowers for Fiona*.
- 5) *Locative* : a specification of place, e.g. *Fiona's flowers are in the kitchen*.
- 6) *Goal* : the entity which is the end point (goal) of an action, e.g. *Fergal*

took the rubbish to the bin.

- 7) *Source* : the entity which is the starting point (source) of an action, e.g.
Fiona came home from the office.

Thematic roles are often referred to use the name of the Greek letter theta, i.e. as *theta*-roles or *T*-roles.

4.3.4 *Traces*

A controversial concept in syntactic theory of the past few decades is that of a *trace*. By this is meant that in the formation of a sentence, the underlying structure may have undergone some change by moving an element from one position to another. The original position of the shifted element is assumed to contain a trace and this can affect operations on the derived sentence, notably it can block contraction. Consider the following example.

We have no interest in linguistics \bar{a} *We've no interest in linguistics*
Will we have a party tonight? \bar{a} **Will we've a party tonight?*

To the right of the arrows are contracted forms of the pronoun and auxiliary. This is permissible with declarative sentences, but not with interrogatives. The reason suggested goes something like this. The input sentence is a declarative and that the auxiliary is moved to the left of the pronoun on the derivation of the interrogative. However, the shifted auxiliary leaves a trace behind and this then blocks the contraction of the pronoun and lexical verb to the left and right of it.

We will have a party tonight \bar{a} *Will we [t] have a party tonight?*
[declarative] [interrogative]

4.3.5 *Empty categories*

Closely related to the notion of a trace is that of an *empty category*. This is a category which is assumed to exist in a sentence but without any actual manifestation. Naturally, sufficient justification must be found for positing such a category. To begin with consider the case of the null, i.e. unrealised, subject pronoun in the first of the following two sentences.

Fiona would like [subject PRO] to leave < *Fiona would like Fiona to leave*
Fiona would like Fergal to leave

The assumption here is that where the subject of the complement clause is the same as that of the verb governing it, then this subject need not be realised. Should the two subjects be different, as in the second sentence, then both must be explicitly present. Assuming a null subject pronoun in the first of the above sentences renders it structurally parallel to the second sentence which in itself is

an analytical advantage. But there also evidence from language data that the assumption of a null subject pronoun is correct. Consider variants of the above sentences with a reflexive verb.

Fiona would like to wash herself
Fiona would like Fergal to wash himself

In both sentences, the reflexive pronoun must match the subject of the first verb. In the first sentence, *herself* must be used and this shows that the subject of *wash* is indeed the same as the female subject of the first verb. Hence we can assume that in a sentence like *Fiona would like to leave*, the subject of the second verb remains unexpressed because it is the same as that of the first verb. Where this is not the case, the subject must be realised as in *Fiona would like Fergal to leave*.

Another case where an empty category is justified is that of bare nominals. These are often assumed to be preceded by a null determiner which corresponds to an empty slot in a determiner phrase, this slot being unoccupied in those cases where the nominal is being used in a generic or existential sense (in English but not in all languages).

$$\begin{array}{c} \text{DP} \\ / \quad \backslash \\ \emptyset \quad \text{N} \\ \text{Linguists} \quad [\text{are boring}] \end{array}$$

$$\begin{array}{c} \text{DP} \\ / \quad \backslash \\ \text{D} \quad \text{N} \\ \text{Those linguists} \quad [\text{are boring}] \end{array}$$

The assumption of a null determiner allows expressions like *linguists* and *those linguists* to be treated in like manner, something which is a gain in terms of symmetry and economy of description.

4.3.6 *Similarities in patterning*

Similarity in syntactic patterning often leads linguists to subsume different elements under a single heading. In a well-known suggestion by Chomsky, he proposed allocating both finite auxiliaries and infinitival *to* to a category *Inflection*, abbreviated to INFL or just I. The justification for this that both finite auxiliaries and infinitival *to* share positions and behaviour in sentences as can be seen from the following examples.

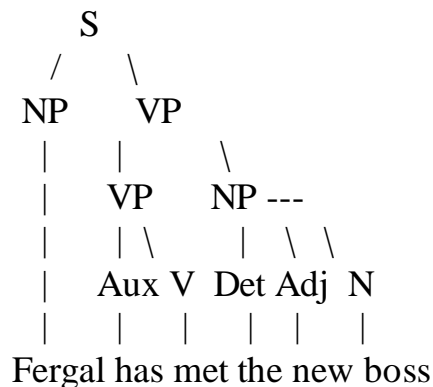
Fiona doesn't want to read the book but she knows she should

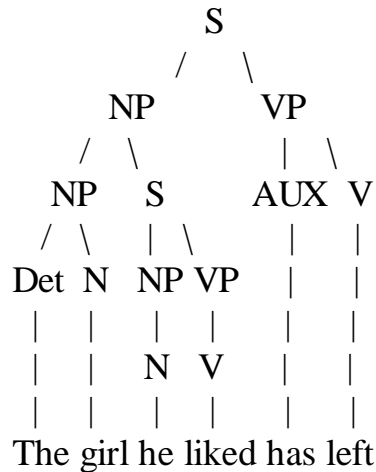
Fiona should read the book but she doesn't want to

4.4 Sentence analysis

In the various models of syntax, diagrams are offered purporting to show the underlying structure of sentences. Among linguists there is much discussion about whether such representations have any psychological reality. It is obvious that we have a mental grammar of our native language, otherwise comprehensible speech would not be possible. The tree diagrams drawn by linguists do not exist mentally, but certain abstract properties which they embody can be taken to have psychological reality. For instance, in diagrams some elements precede others and this corresponds to a temporal precedence in the speaking of a sentence. In a tree diagram of the sentence *Fiona has left the office* the noun *Fiona* would appear at the leftmost position with *left the office* to the right with the verb *has* in between. This ordering reflects the precedence relations of the elements in the sentence. Equally tree diagrams represent dominance relations. For instance, in the sentence *Fergal is [concerned about Fiona]* the phrase in square brackets consists of a past participle, *concerned*, functioning as an adjective. This dominates the prepositional phrase *about Fiona*, in which *about* dominates the noun *Fiona*. It is the relation of elements to each other in sentences which is assumed to hold for our mental grammars, irrespective of how we represent these relations on paper.

Having dealt with these caveats, one can now look at some of the techniques which have been developed in syntactic analysis. Initially, a sentence was broken up into its constituent elements by a process of branching from a single element at the top – the sentence – down to all the individual elements of the actual sentence at the bottom, what is called a *terminal string*. In this type of analysis the function of a word becomes obvious from the label which is used above it within the diagram. Below two sample sentences are given in which the internal structure is shown by means of a tree diagram.





4.4.1 *Phrase structure grammar*

The above diagrams are intended to render visible the structure which underlies the respective sentences. The basis for the branches is what is called *phrase structure grammar*. This is a type of grammar which attempts to show the structure which lies behind a sentence by breaking it down into its component parts. The steps necessary for this involve *re-write rules* which split a larger unit, starting with the sentence itself, into its next smallest components, continuing until one has reached the lowest level which consists of the individual words of a sentence, the terminal string.

Sentence	à	Noun Phrase + Verb Phrase
Verb Phrase	à	Verb + Noun Phrase
	à	Auxiliary and full Verb
Noun Phrase	à	Determiner + Noun

(determiner = articles, possessive pronouns, demonstrative pronouns, numerals, etc.)

From the first re-write rule one can see that this represents the simplest type of sentence, a subject and an intransitive verb as in *Beethoven died*. The second rule breaks down the verb phrase of the first and can be used to deal with a sentence like *Beethoven wrote symphonies*. The noun phrase can be further broken down, for instance, to accommodate the sentence *Beethoven wrote nine symphonies* where *nine* is a determiner. The number of re-write rules necessary is dependent on the complexity of the sentences as these simple examples show.

Readers may well ask whether there is evidence to support the representation of syntax in tree form. To answer that question consider a few

examples of what are known in the trade as ‘garden path’ sentences. These are sentences where the interpretation speakers normally make at the beginning of a sentence has to be revised later.

Fat people eat is dangerous for their coronary system.
The security officers demand costs a lot of money.

The assumption native speakers of English appear to make is that in the above sentences the elements *fat* and *security* are an adjective and a part of a compound respectively. This assumption is abandoned when other words in the sentence are heard (or read) which contradict this. Linguists imagine that what speakers do is to analyse sentences structurally as they are perceived and that in the case of garden path sentences this analysis must be revised midstream so to speak. Such behaviour would appear to justify the notion that we break down sentence structurally as we process them – the mental equivalent of drawing a tree diagram, i.e. the latter can be regarded as a visual representation of the analytical steps and assumptions we go through in the perception and production of speech.

In reality garden path sentences are not a problem for native speakers because, in the above instances, a very slight, but perceptible, pause after *fat* and *security* is made to indicate that the elements do not modify the following nouns. Nonetheless, the conclusions drawn in terms of speakers’ mental representation of sentences would seem to be valid.

4.4.2 *The concept of ‘generation’*

Phrase structure grammar was used by early generative grammarians. It can be employed to explain what the structure of an existing sentence is but does not account for how sentences are produced.

The new grammatical model of the late fifties, generative grammar, had as its express goal to go beyond this and deal with the question of sentence production. For this reason the adjective *generative* is normally given to views of syntax which assume that speakers form sentences by taking a skeleton structure and filling it in with words and that also assume that the number of possible sentences in a language is infinite. However, the term *generative* should not primarily be understood in the simplistic sense of ‘make’ a sentence in one’s brain before speaking but more in the technical sense of ‘describe exhaustively, account explicitly for the steps in a process’. If a deep structure is said to generate a surface structure then this means that, with the deep structure as input, the surface structure is derived by a series of specific steps, without an explicit claim to their mental reality, although deep structure, as seen by the generativists, may indeed approximate to a map of mental linguistic structures. The answer to this consideration is simply that our knowledge of the mental representation of linguistic knowledge is far too inadequate to make any

substantial claims in this direction.

Because generative grammar is concerned with the manner in which sentences are generated it must not only deal with attested, actual sentences but it must also exclude sentences which are not *well-formed*, that which is are not acceptable to native speakers. In syntactic theory much discussion is given over to the relative power of grammatical models. If a model will regard as well-formed sentences which are not acceptable to native speakers then the model is not a valid representation of native speaker competence and must be revised or indeed abandoned.

There are different kinds of well-formedness. In a formal sense this is achieved by simply complying with the rules of sentence structure without taking account of lexical rules of selection so that sentences like *My car is interested in politics* are in a narrow sense well-formed, albeit nonsensical (because ‘to be interested’ only takes an animate subject). This instance illustrates the essential difference between syntax and semantics: the former is concerned with the form and latter with the contents of sentences.

4.4.3 *Surface ambiguity*

Among the goals of generative grammar is the resolution of structural ambiguity (as opposed to the lexical ambiguity of words with more than one meaning). Before looking at examples students should note that formal ambiguity is a very common feature of language. It is tolerated by speakers because the context – pragmatic information – is always sufficient to disambiguate a sentence. For instance, the phrase *old cars and buses* could mean either [*old cars*] and [*buses*] or *old* [*cars and buses*]. But in a given context it should be clear to the hearer what is intended. Nonetheless, the grammarian is concerned with resolving formal ambiguity by semantic paraphrases of sentences and working out the deep structure behind them.

Ambiguities can arise for a variety of reasons. The question of adjective range touched on just now is only one example. Another would be where it is not clear from the surface structure who is actor and who is experiencer as with the following examples

The love of the parents :

- 1) *The love of the children for their parents*
- 2) *The love of the parents for their children*

Brian saw the girl from the library :

- 1) *Brian saw the girl who works in the library.*
- 2) *Brian saw the girl when he was standing at a window in the library.*

The ambiguity here is a consequence of using the preposition *of* in the first sentence and of *from the library* being either a qualifier of the object (*girl*) or

an indication of location for the subject (*Brian*) in the second sentence. With other nouns the distinction between actor and experiencer is expressed by a different preposition as the following instances illustrate.

The affection for/of the parents
The interest of/in the students

The example of adjective range above can be dealt with in some more detail to show how deep and surface structure relate. A sentence like *Young men and women* has one surface structure but two deep structures depending on what is intended, i.e. it either means *Young men and young women* or *Young [men and women]*. This relationship can be displayed graphically in a variety of ways, all of which are all intended to indicate the same matter, i.e. the alternative underlying structures behind the two *meanings* of the sentence *Young men and women*. The sentence with the meaning *Young men and young women* obtains its surface structure by an optional deletion of the second adjective on the assumption that the range of the first one (*young*) is over both nouns which follow (*men* and *women*). This deletion is frequently carried out when the context in which a sentence is spoken is sufficient to exclude any ambiguity.

Another example of such deletion would be the case of what is called *Equi-NP* deletion. By this is meant that if two phrases are joined and both have the same subject then the second subject is usually omitted as in *The man stood up and left the room*. This instance is slightly different from that of *Young men and women* as there can be no doubt that the subject of the conjoined phrase is the same as that of the first one.

The above cases represent potentially ambiguous sentences. There are other cases where the relevance of deep structure can be recognised. Some sentences appear to have an identical surface structure but which can be shown to be quite different in type. Consider the following two instances.

It is likely that Fiona will leave.
It is probable that Fiona will leave.
It happened that Fiona met Fergal.
Fiona happened to meet Fergal.

The difference between these two can be illustrated by a reformulation. In this case one applies a particular type of transformation known technically as *raising*.

Fiona is likely to leave.
 **Fiona is probable to leave.*

Another type of alteration is what is called *tough* movement. By this is meant that the object of an embedded clause is raised to the subject of a higher clause

as in the following example:

It is difficult to convince the Irish. The Irish are difficult to convince.
It is not easy to find good people. Good people are not easy to find.

The structure behind sentences can sometimes be shown by reformulating (paraphrasing) them using a more explicit construction, often one beginning with *It is...* The results are still permissible sentences but with decidedly different structures.

Fiona is easy to please. It is easy to please Fiona.
Fiona is eager to please. It is the case that Fiona wishes to please.
Fiona seems to be successful. It appears that Fiona is successful.
Fiona tries to be successful. Fiona attempts to be successful.

One can now recognise that, in the sentence on the left with *easy*, Fiona is the object whereas in the sentence with *eager* she is the subject. These situations in which an underlying subject and object both appear as subject on the surface are good illustrations of the difference between deep and surface structure. It is also interesting that children have difficulty in acquiring the correct interpretation of the underlying object type (*Fiona is easy to please*) as was shown in a well-known case study by Carol Chomsky in the late 1960s.

4.4.4 *Impossible sentences*

As a result of first language acquisition, speakers know what is permissible and what is not in their native language. But we don't produce grammatically ill-formed sentences, except in exceptional circumstances, such as when we are extremely tired. Speakers of English are unlikely to produce sentences like the following.

**He considers the answer was inadequate*
**She won't this think is unfair.*

These sentences are incorrect in different ways. In the first sentence the combinatory rules of a particular verb – *consider* – have not been adhered to. This verb takes an adjective preceded by an optional infinitival complement as in *He considers the answer [to be] inadequate*. The use of a tensed verb is not permitted here though the related verb *think* does allow this, e.g. *He thinks the answer was inadequate*.

The second sentence is not permissible because of the overlap of the phrases *She won't think* and *this is unfair*, that is two components of a sentence have been cross-wired

She will not this think is unfair
 [_N_V_Neg_] ---- [_V_]

 [_N_] ---- [_V_Adj_]

The first sentence above illustrates a type of mistake which learners of English might make. However, the second sentence is very unlikely to be produced by anyone because the kind of cross-wiring of clauses which it shows is not characteristic of human languages in general.

It is important that grammars constructed by linguists do not allow such structures to be generated. If they do, they are too powerful and clearly do not match the mental grammar of speakers.

4.5 The study of syntax

The study of syntax has had a chequered career. In the heyday of Indo-European studies in the latter half of the 19th century syntax was neglected as linguists were mainly concerned with phonology and morphology. With the advent of structuralism the situation looked better, particularly with the Prague school of linguistics in the 1920s, because syntagmatic relationships in language (those between elements in sequence) were discussed. However, American structuralism in the inter-war years did not devote its attention to syntax chiefly because Leonard Bloomfield – the main figure in linguistics at the time – was concerned with matters of phonology and morphology; there was a neglect of both syntax and semantics. It was not until the 1950s with the reaction to classical structuralism that syntax came into its own as an autonomous level of linguistics.

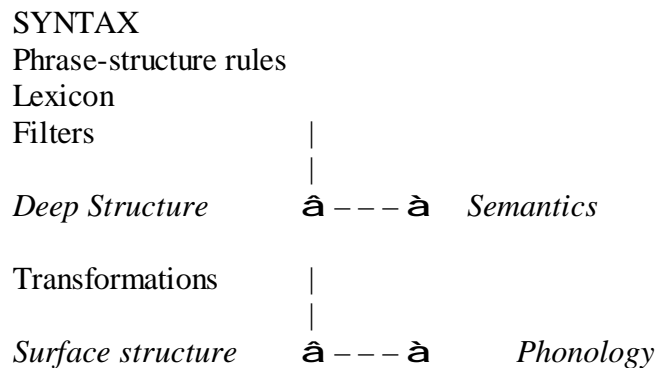
4.5.1 *The early model of generative grammar*

The school of transformational-generative grammar, as it was originally known, was the first to have syntax as its main concern. It began with Chomsky's *Syntactic Structures* (1957) and triggered an unprecedented rise in interest in syntax. The two basic tenets of this school of linguistics are obvious from its name. It maintains that sentences are generated on the basis of stored patterns and a lexicon (to put it very simply) and that various sentence types are related to each other by a process of transformation. For example, passive sentences are said to be derived from active ones by a transformational process. As mentioned above, this notion is controversial as it implies that some types of sentences are more primitive or fundamental than others (the derived sentences). Furthermore, it seems to assume when during sentence production a basic type is taken and a transformation is applied to it. Direct evidence for this assumption has not been forthcoming as the mechanisms of language production are not accessible to observation. Nonetheless a large amount of indirect evidence has been offered,

such as slips of the tongue, the semantic equivalence of certain sentence types, and the intuitions of native speakers.

4.5.2 *The standard theory*

Generative grammar has undergone several major revisions since its initial introduction in the late 1950s. The term *standard theory* has been used to refer to the model of generative grammar as expounded in the 1965 book by Chomsky *Aspects of the Theory of Syntax* (a review of his thought on the nature of grammar, particularly syntax, since the publication of *Syntactic Structures*). The conception of sentence generation put forward in this book can be displayed graphically as follows. The surface structure corresponds to actual sentences, terminal strings in the terminology of generative grammar, and deep structure to the assumed structure which underlies the actual sentences.



Initially, grammatical information was assumed to be specified on the syntactic level of a language. However, there is convincing evidence that in many cases the syntactic information is specified in the lexicon. Take for instance those verbs which allow what is called *dative movement*. This is a shift of the indirect object to a position before the direct object with the deletion of the preposition previously before the indirect object.

We sold our house to the Murphys. + dative movement à
We sold the Murphys our house.

There are, however, a number of verbs which are ditransitive, i.e. which take two objects, but do not allow this type of movement as in the following two examples.

The Murphys transferred the money to us.
 **The Murphys transferred us the money.*

The Murphys explained the matter to us.
 **The Murphys explained us the matter.*

Such instances have led linguists to assume that the lexicon is a repository for specifications on the syntactic behaviour of verbs. Various properties of verbs, especially what are called *subcategorisation restrictions*, i.e. what objects go with what verbs, were then taken to be properly in the domain of the lexicon.

4.5.3 *EST and REST*

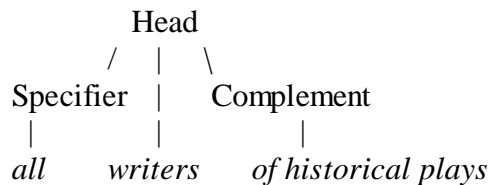
Extended standard theory (= *EST*) is a term for the model of generative grammar which evolved in the early 1970s and derives from the so-called standard theory as put forward in *Aspects of the Theory of Syntax*. The essential nature of the extension is the increase in the range of semantic rules, some of which are suggested by Chomsky as applying to surface structure. Features which are taken to apply on the surface level are those of stress and intonation, aspects of quantification (the use of such elements as *all*, *some*, *each*), for example, *The boys have eaten all their dinner* vs. *All the boys have eaten their dinner*. Further aspects of semantics, dealt with on the surface level, are the focus of the sentence, presuppositions implied in the sentence, etc. It was no longer the case that deep structure determined the semantic representation of a sentence in its entirety. This led later linguists, particularly semanticists, to abandon the notion of syntactic deep structure altogether.

Revised extended standard theory (= *REST*) The uncertainty of just what the nature of semantic representation is, led to a further revision of the extended standard theory, known as the ‘revised extended standard theory’ in which the notion of shallow structure is introduced (yielding a three-fold distinction in structure: deep, shallow and surface). There are two semantic levels, termed logical form and full semantic representation. In *REST* the number of transformations is greatly reduced and the question of movement rules (‘wh’ movement, for instance, as in *Fiona is speaking* ⇔ *What is Fiona doing?*) was given increased attention with the adoption of the *trace* convention which implies that elements after they have been moved by transformation leave a ‘trace’ of their former position which is discernible in the surface structure. This notion refers to the formal means of marking the place which a constituent once held in a derivation before it was moved to another position by transformation. The position which the element originally occupied is called the trace and is said to be bound by that constituent, e.g. *It is unlikely [Fiona will come]* → *Fiona is unlikely [t] to come* (raising transformation, ‘[t]’ symbolises the trace). The term is of essential importance in government and binding theory (see below) where different types of traces are distinguished, such as noun traces or *wh* traces.

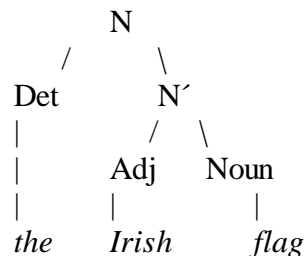
4.5.4 *X-bar theory*

Various refinements have been suggested to the manner of representation in phrase structure (see the examples in 4.2 above) and the most important is undoubtedly what came to be known as X-bar theory. This is a system designed to deal elegantly with heads, specifiers and complements in sentences and clauses. It strives to recognise intermediary levels of phrase structure and assumes that syntactic categories are projected from lexical heads. It can encompass several levels of structure between a head, the topmost element, and a terminal string, the surface structure of a phrase. There are many versions of the theory, several of which are alternatives of each other, and nearly all theories of syntax today have taken on board the basic premises of the original system – proposed by the American linguist Ray Jackendoff in 1977 – and modified them subsequently.

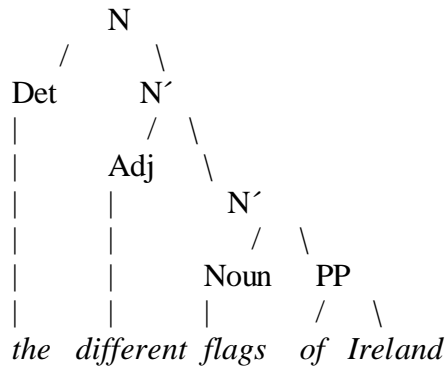
Consider for a moment a typical phrase structure representation. This begins from a head, often abbreviated to XP, to stand for NP (Noun Phrase), VP (Verb Phrase), PP (Prepositional Phrase), etc. The normal rewrite rule is XP → (specifier) X (complement) and would look like the following for a typical phrase.



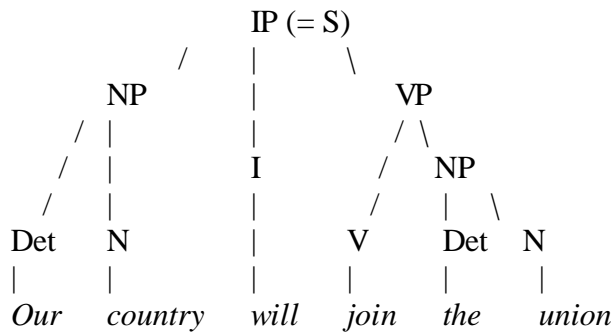
The advantage of X-bar theory is that it allows a simple and economic classification of levels and so captures generalisations about structure which had not hitherto been expressed formally. Take, for instance, the phrase *The Irish flag*. The word *flag* is obviously a noun but what is *Irish flag* in this phrase? The answer is a complement of a lexical head N and this can be indicated in the phrase structure as follows.



Complements of a lexical head expand into X-bar and modifiers expand an X-bar into a further X-bar. Specifiers, typically determiners before nouns or the subjects of verb phrases, stand to the left of a lexical head, i.e. a non-barred X element.



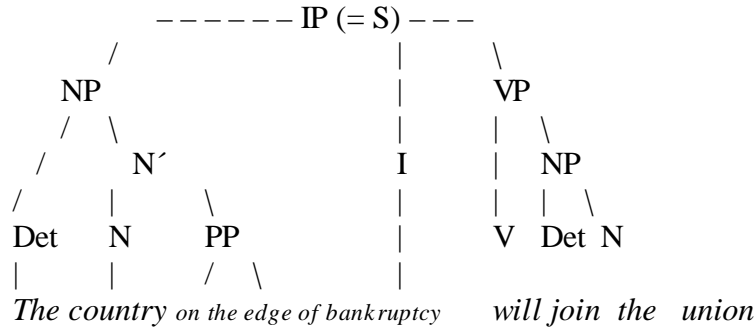
Sentences can be represented as having, as head, a category INFL, an abbreviation for ‘inflection’. This stands for the tense of a sentence, sometimes written IP for ‘inflected phrase’. A sentence is now seen as no different from a phrase (part of a sentence) except that it is obligatorily inflected because all sentences show tense. To reanalyse a sentence as a structure of the type (specifier) X (complement) with X = I(NFL) one needs a tensed element at the top. Take the sentence *Our country will join the union*. This can now be represented with IP as the head and the elements to its left as specifier and those to its right as complement as follows.



Representations can be refined to accommodate more complex sentence types. Assume that the re-write rule for lexical heads is expanded into two steps as follows.

- XP → (specifier) X'
- X' → X (complement)

How does this help in the analysis of sentences? Consider the following example: *The country on the edge of bankruptcy will join the union*. It is obvious that the specifier is complex consisting of *The country on the edge of bankruptcy*. Allowing for the multi-step phrase structure rules can lead to a representation which accommodates this complex sentence as follows.



After the original formulation of X-bar theory in the late 1970s a whole series of variations arose as linguists grappled with analysing the syntax of various languages and various stages of language using this notation. The next model to dominate syntax theory is discussed in the following section.

4.5.5 *Government and binding theory*

This model of generative grammar by Chomsky derived from the various revisions of extended standard theory of the 1970s. It began with the article ‘On Binding’ in the journal *Linguistic Inquiry* in 1980 and was expanded in the comprehensive work *Lectures on government and binding* which appeared in 1981. Since then the theory has gained a great number of supporters, although those linguists who were prepared to acquaint themselves with the technicalities of the standard theory became increasingly more reluctant to spend the time and energy necessary to come to grips with the new theory. The net result of this is that government and binding is a direction in linguistics which has perhaps as many followers as the standard theory but far fewer linguists who are *au fait* with the details involved.

The term *government* refers to the principle whereby the positions from which movements in sentences can occur are restricted by the constraints which traces place on potentially movable elements. The term *binding* refers to those conditions which formally relate or bind elements of a sentence such as co-indexed noun phrases.

In government and binding theory the assumption is made that sentences have three main levels of structure: D-Structure, S-Structure and Logical Form. The S-Structure is derived from D-Structure, and Logical Form from S-Structure by a single transformation, Move Alpha (a movement rule which combines all previous movement rules and transformations such as active to passive, declarative to imperative sentence type, etc.). Various so-called sub-theories interact with the main government and binding theory to yield the correct structures for an individual language. Because of its arrangement (general theory with specific subtheories), government and binding is regarded as a fitting framework for describing the syntax of all languages, i.e. the syntactic component of universal grammar (see below). Given this approach, linguists

speak of *parameters* rather than *rules* in grammar. Thus for any given language each of the universal set of parameters will have a certain value. For example, the ‘adjacency’ parameter would specify that in English adjectives precede nouns but in Irish they follow. A child learning Irish will know on hearing *mála Sheáin* ‘bag John-GENITIVE’ that Irish is a post-specifying language, with modifiers after heads and will then correctly predict that adjectives come after nouns as in *mála mór* ‘bag big’. Another example is the ‘pro-drop’ parameter which allows a language to leave out personal pronouns with certain verb forms, e.g. Italian *capisco*, Irish *tuigim* ‘I understand’.

Certain links may exist between certain parameters, for instance the parameter ‘unmarked word order’ with a value SVO (subject verb object in non-topicalised declarative sentences) would co-occur with a value Left Placement (adjective normally precede nouns) for the adjacency parameter. This is true of English, Dutch, Swedish, German, etc. In Irish, Welsh or Arabic, on the other hand, an unmarked word order VSO (verb subject object) would link up with a Right Placement for the adjacency parameter. In this context one should consider the implicational universals of language typology (see section ??? below), particularly those developed by the American typologist Joseph Greenberg.

Terms in Government and Binding

- 1) **PRINCIPLES** Types of grammatical statements which are much broader in their scope than rules, e.g. statements about the basic structure of sentences, or about the existence of major lexical categories like nouns and verbs. In government and binding theory the assumption is made that there are no rules but principles which take a somewhat different form in each language.
- 2) **PARAMETER** A type of variation across languages. Parameters constrain the range of structural variation, in fact parameters are limited to one of two options, i.e. parameter settings are binary choices (see the examples just discussed above). Parameters can furthermore be set correctly on the basis of minimal linguistic input. Combined with the previous term, the name ‘Principles and parameters’ is often used to refer to this theory of grammar.
- 3) **UNIVERSAL** A property which is claimed to hold true for all attested languages and for any conceivable (human) language. There are basically two types: 1) *Formal universals* which are the necessary conditions which have to be imposed on the construction of grammars in order for them to operate and include such features as types of rules, transformations, ordering restrictions, etc. 2) *Substantive universals* which are the primitive elements in any grammar and which are required for the analysis of linguistic data. Universals can occur in various components of grammar, e.g. syntax, phonology, semantics.

4.5.6 *Universal grammar*

The more advanced generative grammar has become the more it has tried to raise its goals. With advances in analytical techniques and the range of languages examined, generativists felt that they were gradually in a position to make claims about grammar as it applies to all languages. This is the technical meaning of the term *universal grammar*. It is the body of structure which is common to all languages and specific to none. Universal grammar is furthermore concerned not just with saying *that* languages have certain structural features but with accounting for *why* this is the case.

The details of universal grammar are quite complicated as they involve a highly formal analysis of possible syntactic structures and avail of terminology with which the reader is not initially acquainted. The following is a selection of some principles of universal grammar. These principles are concerned with the form of a possible human grammar, with restrictions on what is permissible and with generalisations which apply to several word classes.

Subjacency A moved element cannot be separated from its trace by more than one binding element.

Tensed S constraint No rule involves two elements respectively inside and outside a tensed S.

Bound anaphora interpretation This associates reflexive pronouns with potential intrasentential co-referents.

Disjoint co-reference No two NPs may be interpreted as intersecting in reference.

Cross-categorical generalisation Verbs and prepositions take formally similar arguments (for instance the traditional accusative case).

Any model of universal grammar, if it is to achieve the higher goal of explanatory adequacy, must have three attributes:

- 1) universally valid
- 2) psychologically real
- 3) maximally constrained

The first feature is obvious and refers to the fact that universal grammar applies to all human languages, both present-day languages and those which are extinct as well as possible future languages. The second feature is more elusive. It maintains that the postulates of the linguist's universal grammar must be in keeping with what one knows about the psychology of language. Universal grammar must be congruent with the facts of first language acquisition, it must seek confirmation from such peripheral areas as aphasia where language

breakdown can be observed and must be in accord with what one knows about temporary dysfunctions such as slips of the tongue. The last attribute above refers to a necessary feature for models of universal grammar to ensure that they do not allow the generation of sentences which are obviously non-grammatical in any language. The model must ban rules which are universally impossible.

4.5.7 *Modular organisation of language*

Language organisation would seem to be modular, i.e. the different areas are initially independent and meet at certain interfaces. Chomsky, when discussing syntax, has formulated this as the autonomous syntax principle by saying that ‘no syntactic rule can make reference to pragmatic, phonological or semantic information’. What this implies is that all generation operations and transformations which are involved in getting from the deep structure of a sentence to the surface do not involve any other rules than syntactic ones. This notion has been the cause of much controversy in linguistics in the past few decades but is something which ties up elegantly with other parts of the human organism such as organs which are self-contained functional units with interfaces through which they communicate.

In discussing universal grammar, Chomsky has stressed repeatedly that the data which children are presented with in first language acquisition is not just degenerate (poor performance on the part of those around them) but also underdetermined. What this means is that children receives no help from their surroundings for many of the structural principles which they later acquire. If no help is forthcoming externally then the knowledge must be there to start with. All the items of linguistic knowledge which are not supplied from an external source must be located in universal grammar, i.e. that amount of (unconscious) knowledge about the structure of language in general with which we are born.

Again a comparison with another faculty may serve to help, this time from the field of vision. No one teaches a child how to recognise geometrical patterns, no one tells a child how to recognise someone from the side, how to extrapolate the limited information in a side view into a hypothetical front view. These are tasks the knowledge of which the child is born with. Equally one can postulate that the knowledge one requires for many general syntactic structures, which are found in all languages, is innate and not later acquired.

4.5.8 *The minimalist program*

During the 1990s a further model of syntactic analysis, which addressed many questions of X-bar theory, was proposed. This is the *minimalist program* developed by Chomsky. It largely does away with X-bar notation because it is assumed to contain redundant elements in tree representations. An express goal of this program in syntax is to remove superfluous steps in derivations and much research in recent years has been devoted to testing this model on data from

various languages to determine if it has inherent advantages over previous proposals.

This research program demands that grammars constructed for human languages be minimal, i.e. they should involve the smallest number of constructs to account adequately for the intuitions of native speakers about their language. The more minimal the apparatus to describe a language is, the more it is likely to be maximally learnable by children in the first few years of life.

Summary

- *Syntax* concerns the possible arrangements of words in a language. The basic unit is the *sentence* which minimally consists of a main clause (containing at least a subject and verb).
- Linguists distinguish between *deep structure* – the level on which the unambiguous semantic structure of a sentence is represented – and *surface structure* – the actual form of a sentence.
- Sentence structure is normally displayed by means of a *tree diagram* (the so-called ‘phrase structure’) and by a system of *re-write rules* one can move from an initial unit (the entire sentence) to the individual elements (a so-called ‘terminal string’).
- The term *generation* is used in linguistics to *describe exhaustively* the structure of sentences. Whether it also refers to the manner in which speakers actually *produce* sentences, from the moment of conceiving an idea to saying a sentence, is disputed.
- *Generative grammar* can be divided into three main periods. An early one dating from Chomsky (1957), a central one which was initiated by Chomsky (1965) and a more recent one which reached its maturity in the 1980s with the development of the *government and binding* model. The *minimalist program* is a radical departure from previous models of analysis which is not supported by all syntacticians.
- *Universal grammar* represents an attempt to specify what structural elements are present in *all* languages, i.e. what is the common core, and to derive means for describing these adequately.
- Language would appear to be organised modularly. Thus syntax is basically independent of phonology for instance, though there is an *interface* between these two levels of language.

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5 Semantics

RH: Possible include section on formal semantics, truth-conditional semantics, propositional logic – though probably too much for beginners.

Semantics is the study of meaning in language. Meaning is a much less tangible notion than those introduced in the above chapters on phonology, morphology and syntax. Meaning has a strong subjective element to it and it is spread across other levels of language as will be discussed below. It is also a contact area with other disciplines such as philosophy and logic. Philosophical semantics looks at the relations between linguistic expressions and the phenomena in the nonlinguistic world to which they refer and examines the conditions under which they are true or false. This type of semantics goes back to Classical Greece, to the three main philosophers Socrates, Plato and Aristotle. In the sphere of logic, semantics is important as a system of logical analysis where it is not so much the relation between language and the outside world which is of concern but rather the internal formal relationships between terms in a logical system.

The history of linguistics shows periods in which semantics received more or less attention. In the nineteenth century linguists concentrated more on phonology and morphology and semantics suffered from comparative neglect. With the advent of structuralism at the beginning of the 20th century, it looked as if semantics might achieve the status it deserved. However, the development of American structuralism between the two world wars did nothing to further linguistic interest in semantics. Such prominent linguists as Leonard Bloomfield (active in the 1920s and 1930s) regarded semantics as too difficult to deal with scientifically and left it to one side. The same is true of early transformational grammar in the 1950s. Only in the mid 1960s did the interest of linguists turn to semantics once more. Since then there have been many works on semantics both within models of grammar and outside. Despite these efforts there are no coherent theories of semantics on a par with those in syntax and phonology.

5.1 The meaning of ‘meaning’

One of the first difficulties one comes across in semantics is with the definition of the term *meaning*. Two common misconceptions are involved here. The first is that what one refers to by ‘meaning’ does in fact have some real existence (apart from our idea of it); the second is that the word ‘meaning’ refers to the same thing each time it is used. These two situations are termed 1) the presupposition of existence and 2) the presupposition of homogeneity.

There are standard examples to illustrate these two phenomena. For instance, although the words *unicorn* and *dragon* exist there are no such

animals. What one imagines on hearing the terms depends on the images (usually pictorial depictions) which one may have come across during one's lifetime. For example, a unicorn is often thought of as a horse with a twisted cone-shaped horn protruding from the forehead; a dragon may be thought of as a reptile-like animal which breathes fire.

The presupposition of homogeneity can be illustrated easily with words which denote quality. For example, there is a saying in English that 'Beauty is in the eye of the beholder' which rests on the assumption that the notion of 'beauty' varies from individual to individual. Another sphere from which one could illustrate question of homogeneity is that of words with moral overtones. The sentence 'Your country expects you to do your duty' sounds very simple. But in fact semantically it is quite complex as the notion of 'duty' is not easily defined. In the context of an impending war, it could mean that one group in society – a higher one – expects another group – a lower one – to fight and possibly die for them without any betterment of their own lot.

When an idea or concept is encoded in language one cannot always be sure that this will lead to the transfer of just that idea or concept from a speaker to a hearer. This fact is intuitively recognised by language users, as in the statement 'I don't quite understand what you mean', which shows that meaning can vary from speaker to speaker. Nonetheless, the most successful means of defining meanings is via the use of words. It is the clearest way at arriving at a consensus on what constitutes the meaning of a word and has the additional advantage of excluding attempts at defining meaning by appealing to other, often obsolete factors, such as the historical source of a word (its etymology). For instance, the word *culture* is used in present-day English to refer to general social behaviour, as in 'today's holiday culture'. Although 'culture' is used to refer to art and customs of a society it now also means 'social behaviour', just as philosophy means 'general policy', because it is commonly used in this sense, for instance in industry.

5.1.1 *Presupposition and entailment*

The central idea behind *presupposition* is that a sentence by its very meaning presupposes that something else is true which preceded the utterance of the sentence. For example, the sentences *Have you given up linguistics?* and *Did you enjoy your dinner?* both imply that the person addressed was studying linguistics and did in fact eat dinner respectively.

The second notion – *entailment* – refers to situations where, if one sentence is true, another related sentence is also true. If you like, entailment can be regarded as a type of inclusion. If one sentence is semantically included by another – usually by a relation of hyponymy – then the truth of the included one implies the truth of the including one. A simple example can illustrate this: if the sentence *Cathal has two daughters* is true then the sentence *Cathal has children* is also true.

5.2 Types of meaning

When laypeople think of meaning it is first and foremost lexical meaning which comes to mind, that is, meaning which can be captured by the question 'What is an X?' where X often stands for an object in the outside world. But this is only one kind of meaning. It is possible to distinguish at least four types of meaning: lexical, grammatical, sentence and utterance meaning.

- 1) LEXICAL MEANING is that of individual words or of compound words, for instance, *What is the trachea? What is lexicology? What is a drumlin?*
- 2) GRAMMATICAL MEANING is that of form words which only obtain significance when used in connection with lexical words. Such form words are the many prepositions, conjunctions or determiners in a language. Their meaning is only evident in a sentence or phrase containing lexical items. For instance, the word *to* has no independently specifiable meaning but in the sentence *He gave a lovely present to his wife* it has grammatical meaning as it precedes the beneficiary of an action. It is typical of these elements that they have many functions, for example, *to* is commonly used as an infinitive marker as in *They decided to come*.
- 3) SENTENCE MEANING results from the combination of words in a sentence. This can vary even with the same words as with a sentence where the subject and the object are exchanged. Meaning can furthermore depend on the scope of an element, deriving from its position in a sentence, compare that of *all* in the following sentences *All the boys ate the food* and *The boys ate all the food* which contain the same words but in a different order.
- 4) UTTERANCE MEANING is that of a sentence in a particular spoken context which is not necessarily the same as its literal meaning, cf. *Can you pass me the salt?* which is not a question but a request. Utterance meaning is closely linked to the area of linguistics called speech act theory which examines the use and classification of language in concrete situations (see section ??? below).

5.3 Meaning relationships

Apart from the question of types of meaning, just dealt with, there are various ways of classifying meaning relationships. At the most basic level one can distinguish relationships which apply within language and those which obtain

between language and the outside world. To capture these two types linguistics avail of the terms *sense* and *denotation*.

Basic meaning relationships

- 1) SENSE refers to the semantic relations between linguistic items. For instance, the words *man, woman, boy, girl, child, adult* are related to each other (and of course 'point' to beings outside of language, see next paragraph). The distinguishing factor may be gender or age, depending on the items in question. Other constellations of words exist in which the distinguishing features between items are different. Consider the related words *car, van, lorry*. Here the items are distinguished by size and purpose, i.e. whether used to transport people and/or goods. From these simple examples it can be seen that sense relations typically hold between items in word-fields (see section 3 *Lexicology* above), i.e. in groups of words which refer to objects which are viewed as related in meaning. The word-fields to be found in language do not always correlate with the situation in the 'outside world', e.g. the term *vitamin* is used to denote a group of chemicals which only have in common that one requires relatively small quantities of them. The apparent unity which the name suggests does not correlate with reality.
- 2) DENOTATION refers to the relation between words and the non-linguistic world. The word *bicycle* 'denotes' a mechanical device with two wheels with a rider and propelled by human muscular effort. The Irish word *rothar*, the Russian word *velosiped* and the German word *Fahrrad* all refer to the same thing. From this one can see that the relation is arbitrary, that is there is no necessary connection between the sound shape of the word and what it denotes. However, for each language the relation is fixed by social convention as pointed out by de Saussure at the beginning of the 20th century (see section 3.1 *Structural notions in linguistics* above). Denotational meaning is sometimes refers to as conceptual meaning.

The object or concept which a word denotes is not its entire meaning. For most words one can also recognise finer shades of meaning especially the positive or negative aura which a word has. To capture this aspect the term *connotation* (or sometimes *associative meaning*) is used. For instance, *Hallo, old boy!* exploits the connotation of 'old boy' as someone with whom one is acquainted. In strictly denotational terms it would refer to an old boy, which is not the case in this example. However, in most cases the denotational reference of a word is not in conflict with the connotation. These instances are more subtle and more likely to be manipulated by speakers for their effect on hearers. For example, the sentence *He referred to the dangers of the scheme* could be phrased in a number of ways, say by using *pointed out* or *drew attention to* or *highlighted* or *stressed*

as the verb. The connotation of urgency in *stress* might be deliberately aimed at or avoided depending on what the speaker intends. Equally the relative neutrality of *refer to* might be chosen in order to downplay a situation, maybe one which hearers feel should be taken seriously. The range of connotation is often from negative to positive with a given selection of words. For instance, the word ‘stench’ has a negative connotation but the word ‘scent’ a positive one, although both refers to sensations of smell. Because positive associations exist, words are frequently used more for their connotations rather than their primary meaning, their denotation. Take for instance the words *fair, just, righteous, impartial, objective* all have connotations – overtones – of moral goodness. In this context one could consider the language of politics or advertising for the use of words with positive connotations. An example of this would be a cigarette advertisement such as *Exclusive tobacco hand-picked for your pleasure from the house of XXX*. Now *exclusive* has the connotation of ‘very special, not everyday’. *Hand-picked* implies ‘conscientious attention to quality’. *House* in the phrase above suggests ‘a level of personal commitment to customers’, all of which may well not apply to the product at all.

The basic meaning relationship of sense can be further differentiated by examining the precise nature of this relationship. By these means a further fourfold division can be reached as outlined in the following paragraphs.

Internal meaning relationships

- 1) **SYNONYMY** Sameness of meaning. Not an absolute category as the degree of sameness is a relative matter, for instance *fair* and *just* are similar but not quite the same; the difference is often one of collocation, i.e. the combinations of other words which an item may occur in, e.g. *He was given a fair trial* and *He is a just man* but not **He was given a just trial* (though *He is a fair man* is quite acceptable). In fact one can maintain that if two words are exactly the same in meaning then in the course of time one will drop away as has happened with Old English *guma* ‘man’ or *niman* which was replaced by the Scandinavian borrowing *take*. What may happen is that two originally synonymous words may become distinguished by style as with the many French loans in the Middle English period which came to be characteristic of a more formal style of English, cf. *work* and *labour*; *freedom* and *liberty*.
- 2) **ANTONOMY** Difference in meaning. There is a distinction between graded and non-graded antonyms. The former are not a matter of ‘yes’ or ‘no’ but of ‘more’ or ‘less’, e.g. *small, interesting, talkative, clumsy*. The latter can only have one of two values, e.g. *dead, alive; pregnant, not pregnant*.
- 3) **HYPONYMY** This is the relationship which obtains between specific and general lexical items. For instance, *flute* is a hyponym of *instrument*.

Flute, clarinet, oboe are co-hyponyms of each other. Hyponymy is typical of word-fields, collections of words which are related in some general sense and which show an internal hierarchy. Furniture, food, buildings, clothes are typical word-fields which contain hyponyms, many of which are co-hyponyms if they are on the same level, as with the examples just given which all belong to the wind section of an orchestra; *chair, stool, couch, sofa* are co-hyponyms in the word-field 'furniture' as they are all items of furniture on which people sit as opposed to *table* which one sits at.

5.4 The figurative use of language

Human cognition operates on various levels of abstraction, our consciousness is quite removed from the physical layers of nerve stimuli on which it is based. A central part of this abstraction is the use of symbols and the treatment of intangible phenomena as objects. This cognitive behaviour is reflected in language, nowhere as clearly as the way in which we refer to language itself. It is common to talk of 'the English language' as if it were an object like a tree or a flower which it is not. The language is an abstraction from the collective linguistic behaviour of those individuals who learned certain words and rules in their childhood. This type of abstraction enables discussion which would otherwise be much more difficult. We can follow conversations about abstract entities because we conceive of them as if they were objects.

An essential part of abstract thought, and hence language, is the figurative use of literal terms. Just as it is helpful to treat abstract entities as if they were objects, so it is often useful to use literal terms to refer to less tangible entities. For instance, a *computer virus* is not a virus in the biological sense – a parasitical organism which preys on a host. But the general behaviour of biological viruses – preying on a host – is typical of computer viruses too as these are unwanted bits of software which prey on the operating system of your computer. The same figurative use is found in *software bug*, a dysfunction in a computer programme.

The figurative use of a literal term is called a metaphor (in linguistics as in literary studies). Metaphors are useful because they allow us to use known literal terms for concepts which may be less known or less tangible but which are parallel to the known terms. For instance, *the foot of the mountain* is a figurative use of *foot* which symbolises the lower end of the mountain just as *the brow of the hill* shows *brow* in a figurative use to indicate the top ridge of a hill.

All languages have metaphors which derive from the human body, which is the primary source of such items. Just think of phrases like *the head of the company, the president's right-hand man, on the back of the others, have an ear for his employees, keep an eye on the stock market, with his nose to the ground, to keep a stiff upper lip, she can't stomach the man, have a heart for*

linguists, he put his foot down on the matter. Such lists could be extended at will, for English just as for any other language.

Metaphorical use of language is not confined to nominal phrases like as those just listed. There are many verbs and verbal usages which owe their meaning to metaphorical extensions from literal meaning (see section ??? *Grammaticalisation* below), e.g. the verb *go* in English where its spatial meaning has come to be used metaphorically for temporal contexts as in *Fiona is going to learn Russian.*

Because metaphors rest on parallelisms with some literal term which is known, it is particularly common to find them in comparisons. A frequent type of metaphor in language is found with the name of an animal for a human, e.g. *He is strong as a bear/an ox.* Verbs can also derive from animal names – via implicit comparison – as in *He chickened out at the last moment.* A use of an adjective in this context would be *He's very cocky these days.*

Closely related to the metaphorical use of language is *metonymy* by which is meant the use of an associated phenomenon/object (or part of this) for the phenomenon/object itself, e.g. *The Crown* for the monarchy. Cities or key buildings for governments are a common source of metonymy, e.g. *Dublin* for the Irish government, *The White House* for the American administration. There are many different subtypes of metonymy, e.g. container for contents as in *a glass of wine, the whole bottle*, or part for whole as in *farmhand* ‘agricultural labourer’.

5.5 Analysing meaning

The meanings of individual words can be analysed in a number of ways. Among the various suggestions there are two which have been particularly favoured. The first, componential analysis, was common into the early 1970s when it came to be complemented, if not in fact replaced, by prototype theory. In the following a bried outline of each of these models is offered.

5.5.1 Componential analysis

This type of analysis is based on the notion of identifiable semantic features which are usually the grounds for distinguishing quasi-synonyms, e.g. *lie* [+intentional] : *fib* [-serious] : *untruth* [+neutral]. These are formalised by the linguist as terms in square brackets but, importantly, are grasped intuitively by native speakers as well.

This insight has led to a semantic model which assumes that the overall meaning of a word is made up of smaller, basic units, the semantic components. The model has a counterpart in phonology, developed from the mid 1930s to the late 1960s, where phonemes are said to be a bundle of phonemic features, such as [±voice], [±nasal], etc.

In componential analysis a word like *bull* would made up of the features

[-female], [-human], [+adult], and [+bovine], whereas *cow* would differ from *bull* only in that it is [+female] (or [-male], as it may be) with other components having equal value. The difference between *girl* and *boy* also lies in the value of the component [\pm female], but they are both [+human] and the component [\pm bovine] is not contained in the set of components used to define them. Equally the feature [\pm adult] can be used to distinguish *boy*, *girl* on the one hand and *man*, *woman* on the other.

Componential analysis requires that one use binary features and that there is clear agreement on which features apply to what objects / beings. It is indisputable that [\pm bovine] does not apply to humans or [\pm feline] or [\pm canine] for that matter. But what about the feature [\pm able to fly], is this a necessary component for defining *bird*? For some people it undoubtedly is and it can be argued that the first idea that comes to mind when hearing *bird* is an animal that flies. However, there are animals – such as penguins or ostriches – that do not fly but that are in other respects like most birds. Those speakers for whom such animals count as birds (in a subjective sense) do not have the component [+able to fly] as a necessary feature in the bundle describing *bird*. The problem here is that there is no way of objectively determining just what features do or do not belong to the componential description of objects / beings. In order to overcome this difficulty many linguists have turned to an alternative model, prototype theory.

5.5.2 *Prototype theory*

The word *prototype* has a few meanings. One common use of the word is to denote a draft or model of a product which is not yet available on the commercial market. This usage is seen in a sentence like *At the car show XXX showed a prototype of their new sports model which is expected to be available early next year*. There is another usage of the word to denote a typical member of a class of objects, e.g. *A lion is a prototypical hunting animal*. Why is the lion regarded as a typical member of this class? Perhaps because it is only a carnivore (as opposed to humans which are omnivores), i.e. lions don't eat leaves. It is a particularly good hunter in open spaces and so salient to humans considering the class of hunting animals. Other hunters may behave differently, e.g. leopards drag their booty up a tree and consume it there, hyenas hunt at night and so are not normally visible to humans, crocodiles are also hunters but from water and we generally think of hunters as operating solely on land.

The second use of 'prototype' has had a considerable influence on semantic studies. The notion was introduced in the 1970s and was seen as successful in avoiding many of the problems of available semantic models, such as *componential analysis* (see below). The latter ran into difficulties as far as the number of components, required to describe an object sufficiently, is concerned.

Prototype theory proposes that concepts, such as the words *bird* or

chair, are not sets of semantic components bundled together, as in componential analysis, but prototypes, that is typical instances of the object concerned. Furthermore, the notion of component is binary by definition, i.e. either a component is present or it is not. But semantic information does not seem to be organised in this fashion. The prototype of *bird* would be a typical bird, as for example a blackbird, robin or sparrow. This may then account for the fact that a penguin does not (in European culture) automatically come to mind when hearing *bird*. Prototypes may be stored in memory as a set of typical features or a visual image.

People from different countries and cultures would seem to have different prototypes. By and large one can say that the prototypes people entertain result from the members of certain classes to which they were exposed in the formative period of their lives. It may well be true that north Europeans regard medium-sized birds like blackbirds or sparrows as prototypical birds, but people from countries with many rain forests, like Brazil, may well think of more colourful birds, like parrots, as prototypical. This also applies to prototypical *values* for certain categories. It is uncontested that a prototypically tall person would be of greater height in Norway than in, say, Thailand. Equally a dark-skinned Scot is likely to be of a fairer complexion than a dark Iranian, for instance.

5.5.3 *Basic-level concepts*

This term was introduced by Eleanor Rosch, a prominent psychologist, in connection with the question of how languages organise and express meaning. Rosch argues that there is a universal tendency across languages to structure the world into several hierarchical layers. She observes that in the world features are not chaotically distributed but tend to occur in clusters, as with the notion of prototype just discussed, and goes on to say that some of these concepts are more 'basic' than others. To say *I have a pen* is more informative than *I have some stationary item*, which gives us only the vaguest idea of what the speaker possesses. *I have a fountain pen*, however, only provides us with only one more feature in comparison with just *pen*. Therefore, it can be argued, *pen* is a basic-level concept, below which more and less informative concepts are arranged. It is interesting that the overwhelming majority of basic-level concepts are expressed as single words, while more informative concepts are often compounds or phrases. What is regarded as a basic-level concept by speakers depends, of course, on their knowledge of and acquaintance with the object(s) in question: while European languages only have one word for *rice*, there are Asian societies that have different noncompounded words for (i) rice growing in a field, (ii) rice as it is sold on the market, and (iii) cooked rice. Again, in the vertical organisation of concepts, a town-dweller is more likely to treat *tree* as a basic concept, while country-dwellers, who are more familiar with plants, might treat *pine* as basic in the class of evergreens (bar the *larch*).

5.6 Semiotics

Related to the notion of semantics is that of semiotics. The latter term refers to the study of signal or sign systems in general. For example, a set of traffic lights is a semiotic system as is the machine instruction code of a computer. Natural language semantics can be viewed as a subset of semiotics. All such signs are used in communication systems, between humans or between a machine and humans. The signs in semiotic systems are symbolic, i.e. they stand for something, rather than being the thing itself. For example, the colour green stands for 'permission to proceed' in a traffic-light system, yellow for 'prepare to stop' and red for 'do not proceed'. However, this colour scheme is arrived at by a set of conventions and is not demanded by the nature of the colours. Usually the symbolic value of signs in a certain system are derived from their more common value on a general level, take again the instance of red in traffic lights which is derived from red as a symbol of danger. This in turn may ultimately derived from the colour of blood. As blood should not be seen, then if it is this implies injury and danger. Green is the colour of healthy plant growth and hence is taken as the opposite of red in semiotic systems.

It is a truism to say that semiotic systems are intended to communicate a message. Obviously traffic signals are installed to convey messages to drivers. This leads on to a very simple model of semiotic behaviour.

Sender → Message goes through Channel → Receiver

The signal has a particular form and conveys a certain meaning. Form and meaning together constitute the *code*. Consequently the *message* is encoded by the *sender* and decoded by the *receiver*.

This is a very general and much simplified description of a communication system and it applies to very diverse systems such as road traffic signs. And of course it can be taken to hold for language as well as the latter is naturally a system of communication. One can find mirrors of the semiotic model in language on a variety of levels, for instance in phonetics.

Phonetics
/ | \
Articulatory – Acoustic – Auditory

The above three types can be taken to correspond to the sender – message – receiver components in semiotic terms.

Within the field of linguistics, semiotics is not usually treated in great detail, though countries have different traditions in this respect – Germany has a strong tradition of research into semiotics. Because it deals with sign systems in

the most general sense, semiotics is often incorporated into courses of study such as sociology and/or communication studies.

5.7 Sign language

There is, however, one semiotic system, which is of particular interest to linguists: the sign language used by people who are mute. Mute individuals are frequently deaf from birth and hence have never learned to speak. There is also acquired deafness, due to irreparable damage to both ear drums. Those who suffer from the latter usually abandon speech as they have no feedback for what they say. Before abandoning speech, deaf people usually go through a period in which the quality of their speech deteriorates continually. Again this is due to the lack of feedback and acoustic control over the sound which they produce with their organs of speech. Alternative systems, such as lip-reading, which at first sight appear to be an answer to the problem of the deaf, are deficient in a number of ways.

The solution for deaf people has been to use sign language, chiefly realised by highly specific and well-coordinated movements of the hands. Recent studies of sign language acquired in early childhood have shown that it is a fully-fledged language with nearly all the elements of natural languages. Furthermore, if deaf children are exposed to an insufficient form of sign language, for instance from nondeaf speakers who use it because the deaf children cannot understand anything else, then these children react by expanding the structure of the fragmentary sign language they are offered from their environment. This process can be compared directly to creolisation (see section ??? below) where the children of pidgin speakers increase the structural options of the input pidgin to make out of this a fully-fledged natural language.

There are two main forms of sign language used for English. *American Sign Language*, also known as Ameslan or ASL, is the form used in the United States. It consists of some 4,000 signs with functions and categories which are similar to spoken language. In Britain there is a different forms and the two types of sign language are not readily comprehensible for users of opposite types.

Summary

- *Semantics* is concerned with the study of meaning and is related to both philosophy and logic. *Semiotics* is the study of communication systems in general. *Sign language* is a common means of communication among those who are deaf and can, if learned from childhood, approach natural language in terms of scope and flexibility.
- There are four recognisable types of meaning: *lexical* meaning, *grammatical* meaning, *sentence* meaning and *utterance* meaning which refer to the areas of derivational morphology, inflectional morphology, syntax and pragmatics respectively.

- External meaning relationships involve *sense* (relationships between words) and *denotation* (relationship of word to what it signifies).
- There are various internal meaning relationships such *synonymy* (sameness of meaning), *antonymy* (difference in meaning), *hyponymy* (hierarchical order of meaning).
- Different models for semantic analysis are available: *prototype theory*, where a central concept is taken as typical and less central ones are peripheral, and *componential analysis* which seeks to break words down into their component semantic parts.

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6 Pragmatics

Pragmatics the study of language use in interpersonal communication. It is concerned with the choices made by speakers and the options and constraints which apply in social interaction. It examines the effects of language use on participants in acts of communication. Pragmatics is closely related to semantics, the study of meaning, with which it is often associated. For this reason the current chapter follows that on semantics.

Just as semantics covers a range of levels – grammar, syntax and the lexicon – so pragmatics is spread across a number of fields within linguistics and interfaces most clearly with semantics and sociolinguistics. The boundaries cannot, however, be always clearly defined. Depending on the type of emphasis one places in the field of pragmatics at least three subgroups can be recognised.

Pragmalinguistics deals with the more linguistic end of the pragmatic spectrum. Usage is seen from the view point of the structural resources of a language, i.e. it concerns aspects of context which are formally encoded in the structure of a language. These would be part of a user's pragmatic competence (compare this with competence in syntax).

Sociopragmatics would see usage as primarily determined by social factors in communication.

Applied pragmatics refers to practical problems of interaction in situations where successful communication is critical, e.g. medical interviews, law courts, interrogations, official counselling.

One should also mention that there is a philosophical type of pragmatics, as developed in the late 19th century by American philosophers such as William James and Charles Peirce and which is a precursor to linguistic pragmatics. There are typical themes which one finds treated in discussions of pragmatics. These are dealt with in the following parts of the present section.

6.1 Speech acts

A speech act is an utterance spoken in an actual communication situation. The notion stems from the British philosopher John Langshaw Austin (1911-1960) who worked in Oxford and elaborated his ideas in a series of lectures given shortly before his death and published in 1962 as *How to do things with words*. Austin was a representative of the school of ordinary language philosophy and maintained that one of the chief functions of language was to carry out socially significant actions. This explains his concern with language in use.

Speech acts are realised certain verbs and attempts have been made to classify these according to type of speech act. Austin begins his treatment by introducing a distinction between *constative* and *performative* verbs. The

former are those which describe reality, e.g. *rain* in *It rained heavily all through the week-end*. Such sentences have a truth value as they can be evaluated as true or false. Performative verbs are quite different. They are instrumental in achieving an interactional goal between two or more speakers. A typical example would be the verb *promise* which realises a purely linguistic act. In the sentence *I promise to help you with the work* no work is done but the sincere intention to do so in the near future is expressed by the speaker.

FELICITY CONDITIONS A closer look at different types of speech acts reveals that the success of the act is dependent on a number of extra-linguistic conditions. For instance, the act of baptising can only be performed by someone who is entitled to do this by virtue of an ecclesiastical office. A priest can baptise a child or the wife of a mayor can baptise a ship if there is agreement that she is the person to do this. Furthermore, such actions have generally a ritual structure: there are special phrases involved and they must be spoken correctly and completely, otherwise the speech acts misfires.

Apart from such ritualised acts there are many which require conforming to knowledge about how they are performed and what is necessary for them to succeed. If you attempt to insult someone and they laugh at you, then the perlocutionary act (the effect of the insult, see below) is unsuccessful. If on going into a restaurant you ask your companion which of the two of you is going to cook then this utterance is infelicitous inasmuch as it is not a successful piece of communication.

6.2 Types of speech acts

Speech acts can be classified and subclassified. The first division leads to a triad of basic types one of which applies to all possible utterances.

- 1) **LOCUTIONARY ACTS** These express sense or reference as in *A cow is an animal* or *The earth is round*.
- 2) **ILLOCUTIONARY ACTS** Here the intentions of the speaker are expressed by using a performative verb such as *I baptise this ship 'The Spirit of Galway'*.
- 3) **PERLOCUTIONARY ACTS** With this type the effect of the linguistic action is central. Perlocutionary acts include those which have a visible effect on the speaker, such as insulting or persuading someone.

The second and third type above are concerned with intention and effect and are thus the more prototypical type of speech acts. Depending on the precise action which is performed one can reach further subdivisions as shown in the following brief list.

	<i>Label</i>	<i>Example</i>
Directives	commanding, requesting	<i>Do your homework! Can I offer you a drink?</i>
Commissives	promising	<i>I promise to come in time this evening.</i>
Expressives	apologising	<i>She's sorry about the trouble her remarks caused.</i>
Representatives	asserting	<i>I maintain that he is guilty.</i>

INDIRECT SPEECH ACTS A frequent situation in language use is where the literal meaning of a sentence is not that which the speaker wishes the hearer to use in his/her interpretation. A simple example illustrates this. The sentence *It's very draughty in here* is not normally intended as a simple statement but as an indirect request to close a window or door in a room. For reasons of politeness (see below) speakers may choose this indirect method of realising a directive speech act. Such acts leave the addressee the option of not complying with the implied request without losing face.

6.2.1 *Further developments*

The American philosopher John R. Searle expanded Austin's ideas in a significant publication, *Speech Acts* (1969), in which he stressed the necessity of relating the function of signs and expressions to the social context in which they occur. The development of speech act theory has led to a split in philosophical semantics into truth-based semantics (involving constatives) and speech-act semantics (involving performatives). The distinction can be seen as that between meaning in communication as opposed to meaning in language, hence the assignment of the former to the field of pragmatics.

6.3 **Conversational implicatures**

The English philosopher H. Paul Grice (1913-1988) was concerned with the task of accounting for how human beings behave in normal conversation. To this end he introduced the notion of 'conversational implicatures' which are implications deduced by speakers during conversations. In order to be successful in deducing the intended meanings of one's interlocutors the latter must abide by certain maxims of conversation. Grice recognises four main maxims of conversation

MAXIMS OF CONVERSATION

<i>Quality</i>	What you say is assumed to be true
<i>Quantity</i>	Be informative but not too much so
<i>Relevance</i>	Be relevant to the purpose of the exchange

Manner Be perspicuous, avoid absurdity and ambiguity

Grice furthermore assumes that speakers keep to the *cooperative principle*. This is an unspoken agreement between speakers in conversation to follow the maxims of conversation, to interpret sensibly what is said by one's interlocutor and in general to abide by the conventions of linguistic interaction in conversation. Occasionally, the maxims may be flouted for deliberate effect, for instance when one is being ironical or sarcastic or indeed when lying.

A further development of the conversational implicatures of Grice is what is termed *relevance theory*. The linguists Dan Sperber and Deirdre Wilson applied the notion of relevance to the structuring of conversation and maintain that a contribution is relevant if the effort required to process it is small, i.e. if it matches the context and concurs with the assumptions of the addressee.

6.4 Politeness

In general politeness is an aspect of a speaker's social behaviour which shows deference towards the wishes and concerns of the addressee. There is a linguistic manifestation of politeness, investigated seminaly in a book by the English linguists Penelope Brown and Stephen C. Levinson (1979), which involves strategies for maximising deference in exchanges, e.g. by employing indirect speech acts or by using formal address terms. These strategies aim at a certain goal, to save the face of the addressee. The term *face* refers to the public self-image of speakers and can be subdivided into two main types. Positive face refers to an individual's wish to be respected and appreciated by others. Negative face refers to the wish not to be restricted or impeded in the choices one makes concerning social behaviour. Politeness is hence understood as a means of showing awareness of another's face. Social behaviour can constitute *face saving acts* by being deferential to others, emphasizing the importance of their wishes and concerns. On the contrary a *face threatening act* tends to encroach on another's freedom of action and may be interpreted as an imposition or indeed an insult. There are many linguistic strategies for minimising the threat to negative face, for instance by apologizing in advance for disturbing someone, and for maximising the enhancement of positive face, for instance by pointing out a common interest in some suggestion made to an addressee.

Languages provides devices or strategies for reducing the potential loss of face in social interactions. For instance, *hedges* are devices, used in conversation, which serve the purpose of weakening the force of a statement, e.g. *He is perhaps the culprit after all. Could you possibly give me a hand? He's not up to scratch, I suppose. She won't leave us, will she?*

The face of one's interlocutor can be supported in conversation by *back-channelling*, a strategy in communication whereby the listener confirms his/her attention to what the other person is saying (see section ??? below).

There are significant differences between language in terms of what is regarded as polite or impolite. For example, a simple but often important difference between English and German is that the latter allows the neutral use of third person pronouns when referring to someone who is present. If, say, more than two people are in a conversation in English then it is good manners when two are talking to each other and referring to someone else in the conversation to use the name of this individual, e.g. *Well, as George was saying, we could always come back early.* In German it would be entirely acceptable to say *Naja, wie er sagte, wir können auch früher zurückkommen* where *er* = 'he' is used for George, even if he is standing beside the people talking and listening to what they are saying.

6.5 Terms of address

The major European languages use different personal pronouns depending on the degree of acquaintance which speakers have with those they address. The systems found in Europe show a twofold distinction: one form for addressing acquaintances, friends and relatives and one for addressing strangers or more distant acquaintances. The formal means for realising this distinction vary from case to case. Each language uses the second person singular for informal address but there are a variety of ways for expressing formality pronominally as can be seen from the following table.

Pronominal distinctions according to formality in selected languages

	Informal	Formal
French	<i>tu</i>	<i>vous</i> (second person plural)
Italian	<i>tu</i>	<i>lei</i> (third person singular feminine)
Spanish	<i>tu</i>	<i>usted</i> (???)
Russian	<i>ты</i>	<i>вы</i> (second person plural)
German	<i>Du</i>	<i>Sie</i> (third person plural)

Because of the differences in realisations, it is practice in linguistic discussions to refer to the informal marker as the T form and the formal one as the V form (corresponding to the first letters of the French and Russian pronouns). Such systems are termed *dyadic* as they have two possible pronouns for addressing individuals.

In those languages with the above distinction the higher levels of society tend to use V-forms more and the lower levels the T-forms. This fact may be a remnant of the historical situation out of which the pronominal distinction arose.

6.5.1 *The development of pronominal systems*

The use of a plural of respect is commonly assumed to reach back to Latin and anecdotally to Julius Caesar. What is true is that the plural came to be used for addressing a single individual and so documents the encoding of social distance in language use. This distinction was picked up by vernacular European languages by the early Middle Ages, in German, for example, the earliest record of *ihr* ‘you-PL’ with singular reference goes back as far as the ninth century. Well into the early modern period this remained the only deferential pronoun of address. Its use was regulated by social status in the feudal system and later by class affiliation. By the end of the sixteenth century the third person singular – *er* ‘he’ or *sie* ‘she’ – appears as an indirect address form indicating deference.

The forms from different languages in the above table have various sources. For instance, the third person singular feminine in Italian *lei* ‘she’ refers originally to *maiestà* ‘majesty’. The German use of *Sie* ‘she-SG’ with plural verb forms is attested and would appear to be a combination of indirect third person address and respectful plural as augmented deference. In French and Russian the *vous* and *вы*, both ‘you-PL’ respectively, attained a double function: as a reference to more than one individual with whom one is on informal terms and as a form for more distant acquaintances and strangers which could be used in the singular or plural.

6.5.2 *Present-day systems*

The factors which determine the use of T versus V forms vary across languages, both in history and at present. By and large today’s European languages have an absolute system where a given form is used for a certain individual and maintained until a possible switch is made. Switches are generally irreversible, indeed the only normal switch is from V to T with the important exception of teenagers becoming adults and experiencing the shift of T to V on the part of adults who address them.

Another orientation of the address system is conceivable. This would be where speakers decide from the actual speech context in which they find themselves what form of address to use. Such systems tend to be unstable over time because of the flux and uncertainty which they generate. The dyadic address system of English did not survive and this may be because it was not absolute. In the early modern period *thou* (the original T form) and *you* (the original V form) could be used for one and the same person, depending on the situation.

Address systems serve the function of giving linguistic expression to fairly stable aspects of social relationships, such as power, distance, solidarity or intimacy. But speakers often feel the desire to be more formal or less formal with certain individuals on certain occasions. If the direction the speakers wish to take is not congruent with the T/V form they use, a tension arises which cannot be resolved simply in absolute systems but which can be mitigated by the use of other features which congregate around the address pronouns, such as colloquial expressions, discourse elements which promote informality (or formality as the

case may be).

Occasionally, a language may consciously abandon an established dyadic address system. This happened in the mid twentieth century in Sweden when the V form, *ni* 'you-PL', came to be replaced entirely by *du* 'you-SG' as the only pronoun of address, irrespective of degree of acquaintance. A similar situation applied, though to a lesser extent, in Norway and Denmark (but not in Finland). A slight swingback can be seen in Sweden where some young people think it fashionable to address other individuals using the *ni* form.

Although the various address systems are formally different, their social functions show considerable similarities. In the following a brief consideration of the German address system is offered to show how forms of address are manipulated by speakers in socially varied situations.

6.5.3 *The German address system*

The general rule in German is that the formal *Sie* 'you' is used for strangers and the informal *Du* 'you' for friends and relatives. However, the matter is considerably more nuanced than this simple statement implies.

Social maturation and the use of T/V A system of address in a language is something which is learned consciously by children in their society. The rule always holds that children use the familiar form with each other and with their relatives. However, they must learn (by 5 or 6 at the latest) that there is a marked formal form which is to be used with strangers. As opposed to the acquisition of other aspects of language (morphology, syntax, etc.) children require a fair degree of correction as they overgeneralise the T form (here: *Du*) to begin with. Because the T form is the original unmarked form, there is a general correlation between age and the use of the formal V form. The T form is used among peers up to their twenties (unless some professional situation forbids this or the parties in a conversation are complete strangers).

Non-reciprocal usage and the notion of power The practice of one partner using one form of address and the second another is dying out quite quickly in European languages. It used to be common where one member in a conversation enjoyed a position of greater social power and thus was entitled to use the T form whereas the other had to use the V form. Originally, this was the situation with the nobility. Occasionally, there may be professional relationships today which reflect a similar type of situation. For instance it is common in German for master craftsmen to say *Du* to their apprentices but not vice versa.

Politeness and the use of formal address From the original use of the *Du* form for social inferiors there developed a secondary usage as a sign of contempt. In this sense it can still be used today. However, this only works in those situations in which the person addressed has an inherent claim to be addressed with the *Sie* form, e.g. an older pupil in school, an inmate in a prison, a worker on a building site, etc. The application of the *Du* form is always felt to be indignifying by the other party as it demonstrates a lack of respect.

The converse of this situation is that where people use the *Sie* form as a sign of politeness and mutual respect. This usage would seem to be confined to the middle classes, probably because with working classes politeness does not have such a high value as solidarity, indeed it is often regarded as being class disloyal, i.e. aspiring to a higher social class, to overuse the *Sie* form. In keeping with the fact that the *Sie* form occurs in socially stratified contexts, there is a greater occurrence of the *Du* form in rural as opposed to urban settings. Indeed languages which have an entirely rural population (such as Irish) may often not have any formal pronominal address at all.

Degrees of acquaintance and the T form There is a general rule in all languages which have a formal/informal distinction that at the level of greatest personal acquaintance, the reciprocal *Du* form is used. This holds for instance between siblings, husband and wife, lovers, etc. Formerly, the age difference could have outweighed this with children using the *Sie* form to their parents or at least to their parents-in-law, however this usage has completely died out.

Because the *Du* form implies close acquaintance it can be used to force this. Very often such a move is taken by one partner in an exchange and frowned upon by the other. Speakers often resist attempts on the part of others to use *Du* so as to keep their social distance from them. Forcing the *Du* form on someone is regarded as bad social behaviour. Retention of the *Sie* form can often occur simply where individuals want to be on the safe side: stick to politeness and you cannot go wrong.

Solidarity and the T form A frequent function of the *Du* form is to demonstrate solidarity, i.e. strong common interests, with another individual or group of individuals. In this environment the requirement of close acquaintance can be waived. This is evident in many groupings in society. For instance, there is a tradition that members of the social democratic party say *Du* to each other. Equally, if one deliberately engages in a special activity with other individuals then joining the group usually involves using the *Du* form, e.g. engaging in various forms of sports. The use of the *Du* form for reasons of solidarity probably has its origin in working class usage. For example among miners, road workers, hauliers, etc. reciprocal *Du* is ubiquitous.

Switching from the V to the T form In all languages with a distinction between a familiar and a formal form of address there is continual switching from the V to the T form. Indeed it is socially codified in many languages, e.g. in German there is a quaint ceremony of *Bruderschaft trinken* 'to drink brotherhood', which is optional. The same term and ceremony also exists in Polish. Once the *Du* form has been established it is impossible to return to the *Sie* form without insulting the other person.

In situations in which there is a disparity in a relationship it is always up to the social superior to take the initiative and propose the *Du* form. This is a residue of the original situation where the more powerful members always said *Du* to the less powerful.

6.5.4 *The English address system*

English is remarkable among the European languages in not having a distinction between personal pronouns used for strangers and non-strangers. Indeed English does not even have a distinction between a pronoun for the second person singular, when addressing one person, and another for the second person plural, when addressing more than one. Both these matters are related.

English used to have a distinction in pronouns for address (see section 3.8.2 *Morphological change* for the original distribution of forms). On the one hand, there was a singular form *thou* ‘you-SG’, which now only survives in a few rural regions in England and in religious usage. On the other hand there was a plural form *ye* ‘you-PL’ which survives in some conservative varieties of English such as Scottish and Irish English. The *ye* form was later replaced by *you*, the original accusative. The singular was used for familiar and the plural for polite address. However, the system did not establish itself, most likely because it was not absolute. In the early modern period – as attested, for instance, in Shakespeare’s *Hamlet* – one could say *thou* and *you* to one and the same person, depending on the situation. Hamlet appears to use *thou* to his mother when he is addressing her in this function and uses *you* when addressing her as queen. This situation contrasts clearly with that in all European languages which have maintained the pronominal address distinction. These languages use it exclusively: one either uses the T form with someone or the V form, one cannot use now one, now the other form.

A further feature of the early modern English address system is that the *thou* form was often perceived as contemptuous, at least in certain varieties of the language (though not in traditional rural usage). The net effect is that the *thou* – *you* distinction did not maintain its function of social differentiation and went into decline. By the 18th century it was gone entirely in the standard language.

6.6 Honorifics

T/V address systems such as those found in Europe are by no means the only cases where social relationships are given pronominal expression. Indeed there are many languages which have far more complicated systems. Where a language goes beyond a T/V configuration linguists speak of *honorifics*. These are morphological encoded elements which are used to express varying degrees of social deference. Languages in east and south-east Asia are well-known for having explicit honorific systems, e.g. Japanese, Korean, Thai.

To give an idea of just what such a system entails in terms of morphological choices, the personal pronouns in Thai are outlined below. The European languages discussed in the previous section only have differences for the second person, but for a language like Thai there are distinct forms for the first person as well. The third person shows less variation. The form *khow* is

most common with a special feminine form *khun-nai* used when referring to married women. The third person is not always distinguished by gender and number, though the general form *khon* does have the combined form *phuak khon* as a polite form to refer to more than one individual.

First person singular forms

<i>shan</i> (m + f)	for close friends / intimates; old to young (strangers and family), young to old (family)
<i>phom</i> (m)	Thai to foreigners and vice versa; young to old
<i>di-shan</i> (f)	as <i>phom</i> , but used by females
<i>kraphom</i> (m)	younger male to older person; commoner to nobility
<i>kha</i> (m + f)	peasants amongst each other
<i>kha-pha-chao</i> (m + f)	most formal level, both genders

Second person singular/plural forms

<i>tai-thao</i>	addressing someone in high office, nobility, etc.
<i>than</i>	particular polite form; junior to boss, employee to customer, etc.
<i>khun-naai</i>	equivalent forms for addressing females, especially married women
<i>khun</i>	general address pronoun for strangers, and for people of differing ages groups; also found between husband and wife
<i>theu</i>	used between siblings, friends; otherwise only where person addressed is considerably younger; otherwise offensive
<i>phi</i>	equivalent form but without age difference implied with <i>theu</i> . increasingly used as a polite form for 'you'
<i>kae</i>	belittling form, implying inferiority of person addressed

There also exist specially pronouns used when speaking to Chinese who were born in Thailand: *ah-check* for men and *ah-sim* for women. When speaking to Chinese, Thais may use *oua* 'I' and *lue* 'you', but these forms can be construed as offensive and are not generally regarded as polite.

The distinction between the genders is important in Thai, not only for personal pronouns as seen above. There are certain forms which are used exclusively by men or by women. For instance *cha*, *khrap* is 'yes' (used by men) while *cha*, *khah* [short low tone] is 'yes' (used by women). *Khrap* is also a polite particle used at the end of sentences by men and *khah* by women, with a short high tone it renders the sentence a question.

The other parameter which is important in the Thai honorific system is age which is seen in the context of family relations. For example, *loung* 'uncle' and *pa* 'aunt' are common forms of address for people who are considerably older than the speaker. The form *na* is found for addressing female who are a

little younger than one's mother. This issue will be considered in detail in the section on kinship terms below, see ???.

6.7 Deixis

Very much in language is concerned with pointing or referring. This section of language is referred to as *deixis* from the Greek word meaning 'display, reference'. Deixis (read: /deiksəs/, sometimes /darksəs/) occurs in various guises. An obvious form is that of pronominal reference where pronouns serve the function of referring to nouns which have already been introduced in the discourse. In a synthetic language like Irish the articles and pronouns serve to refer back to nouns mentioned in a previous sentence as in *Cheannaigh mo athair capall agus cráin an seachtain seo caite*. 'My father bought a horse and a sow last week'. *Bhí sí an-daor cathfidh mé a rá*. 'It (i.e. 'the sow') was very dear'. Personal pronouns form another group of elements which have a deictical function as in *I suppose he has left by now* where a male person must have been previously mentioned in the discourse otherwise the sentence is not interpretable.

There are two other major areas where deixis plays a central role. This is in the temporal sphere of language, just consider the many expressions in any language to express points in time: *today, now, later, before, tomorrow*. The tense system of a language, such as English with present, past, pluperfect, future and future perfect tenses, can be interpreted as fulfilling deictic functions along a time axis.

The second area is that of spatial deixis. Apart from the many prepositions and adverbs, such as *up, down, over, under, across, underneath*, English has a two-way system of demonstrative, or 'pointing', pronouns: one for objects/beings close to the speaker and one for those further away as in English *this/that*. There is also an archaic term for distant objects/beings which were nonetheless still in sight: *yonder* as in *Yonder building is the town church*. The use of demonstrative pronouns has been extended to express degrees of relevance where greater distance correlates with a decrease in urgency, consider the sentences *This matter must be dealt with immediately. We can turn to that question later*.

6.7.1 Location and existence

There is an essential relationship between space and time inasmuch as location presupposes existence. Consider sentences like *There are biscuits in the cupboard* and *There are modern translations of his plays*. Such sentences use locative expressions – introduced by *There are...* – to imply existence. Other languages document the interrelationship of the temporal and spatial axis in a similar manner. For instance, in Irish the word *ann* 'in-it' expressed existence as

in *Níl ach drochsheans ann*, lit. ‘there is only a bad chance in-it’. The sentence means that only a slight chance exists. Such meanings arise from concluding that location somewhere automatically implies existence. The same is in German where the sentence *Die Übersetzungen sind da* can mean ‘the translations exist’, i.e. they have been made, or ‘the translations are there’ (*da* = ‘there’), e.g. they are in the office. The connection between space and time can be seen even more clearly in the word for ‘existence’ in German, *Dasein*, lit. ‘to be there’.

6.7.2 Anaphora

A further set of deictic elements can be found which have the function of referring back to something which has already been mentioned in the current discourse. These elements are known collectively as anaphora (from Greek *ana* ‘back’ and *pherein* ‘carry’) and usually have the forms of prepositions. It is a feature of discourse that we mentioned something or someone explicitly, i.e. by name, the first time it occurs, but that after that we refer to the person or thing using pronouns. Consider the following sentence: *Fiona_i bought a new car_j recently but she_i is not satisfied with it_j*. Here one can see that the elements which share a subscript letter are co-referential, i.e. *Fiona & she* and *a new car & it*. It is a fact that in most languages third person pronouns fulfil this anaphoric function of pointing back to someone/something already mentioned. The latter may be in a different sentence, indeed often is. Personal pronouns are not the only elements used for anaphoric purposes, frequently synonyms are found with this function, e.g. *Fergal_i got cash for the building work and that way the old fox_i managed to escape tax* where *Fergal* and *the old fox* are co-referential. Such examples show that by using anaphora to reference what has been introduced earlier one can create cohesion in discourse and texts (see next section). In some cases there is a kind of zero-element anaphora. Consider the sentence *Fergal wants to propose to Fiona but doesn’t have the courage* in which the finite verb *doesn’t* is co-referential with *Fergal* and so points backwards. However, the subject of this verb is suppressed and so one can speak of a zero-element which nonetheless has an anaphoric function.

Occasionally, an element points forward in a text. Such elements are called *cataphora* and can be seen in a sentence like *Fiona didn’t see him until he came around the corner, but it was indeed her long lost cousin*.

6.8 Discourse analysis

Discourse analysis is an area of linguistics which is involved with the examination of stretches of language which are larger than single sentences. Such stretches usually form a unit which is defined by the topic of discourse, e.g. a conversation about a football match, cracking a joke, a political interview or a lecture on historical linguistics.

A discourse with a recognisable structure can be analysed on two levels. The first is the semantic one and the term used to refer to whether a discourse make sense or not is *coherence*. Successful discourse depends largely on hearers recognising the context in which it takes place, i.e. what the so-called universe of discourse is. This leads to a restriction of the expected themes and hence makes the comprehension of the discourse a lot simpler. Furthermore, humans have encyclopedic knowledge about the world they live in and can draw on that to achieve the necessary level of contextualisation when interpreting a discourse. Incidentally, computers do not have such knowledge which makes automatic translation such an unreliable business.

The second level is the formal one. The main issue here is: how does one string together sentences? If this is done successfully then the discourse shows *cohesion*. There are various means to establish sentence connectivity: by the use of intersentential links in which anaphoric elements play a central role (see previous section).

6.8.1 *Back-channeling and turn-taking*

Discourse involves at least two individuals so the hearer or hearers can influence the discourse when someone is speaking. One important role which the hearer has is to offer feedback to the speaker. This is term *back-channelling*, communication by the listener to the speaker. Typically this would involve such elements as supportive noises, uttering short phrases like *yes; I see; of course; right; sure; indeed*. Back channelling is important for successful conversation as it encourages the speaker to continue. Even negative back channelling, e.g. *I don't think so; I'm not so sure; hmm, maybe not* can have this effect of support. The total lack of back channelling is often regarded by English speakers as disconcerting, especially in situations in which there is no eye contact, e.g. on the telephone. Cultures differ in this respect, e.g. Finns engage in much less back-channeling than, say Italians.

This issue is closely linked to the attitude towards silence in different societies and cultures. In some cases, silence is taken as dissatisfaction with the discourse and is avoided, e.g. among speakers of Irish English. Other societies, such as Finland, do not interpret silence in this way and so much more of it is found in personal contacts. If one looks further afield one can find communities, e.g. among some native Americans, where long periods of silence occur quite regularly, especially at the beginning of a social contact.

It is normal in discourse for the speaker to change throughout. The manner in which this change is affected varies across countries and cultures. Some allow a fair degree of overlap, with the person who wishes to speak pushing his/her way forward by talking more loudly, sometimes, but by no means always, showing that he/she does not want the present speaker to continue, e.g. with expressions like *Well whatever, Be that as it may*. In Irish English overlap of this kind is very common and not interpreted negatively. Other varieties of

English and other languages see such behaviour as impolite.

Even if the discourse remains with one speaker, he/she may wish to change the topic of conversation. This is technically known as *turn-taking*. A turn is an event during a conversation when a change in topic is made. There are various mechanisms for doing this, usually by signalling the change to the hearer, e.g. *Oh by the way, I saw Fiona in town yesterday. On the subject of cars, I had to bring mine to the garage last week.*

6.8.2 *Highlighting in sentences*

Much of what occurs in discourse not only conveys information in a matter-of-fact manner but also places some kind of emphasis on certain aspects of the bundle of information. This is technically known as *topicalisation*.

Languages differ in the means which they use to convey what is new and what is given information in an utterance. For instance, Irish tends to use syntactic methods whereby the stressed element is brought to the beginning of the sentence. Technically this syntactic device is known as *clefting* which basically involves the positioning of the element to be stressed in a main clause with a form of *be* in the third personal singular neuter and the rest of the non-clefted sentence in a subsequent subordinate clause.

Is i gCorcaigh a bhfuil sé ina chónaí faoi láthair.

‘It is in Cork that he is living at present.’

S’í a bhean chéile a rachaidh mé san ollscoil.

‘It is his wife that I saw at the college.’

The grammaticality of clefting varies greatly within the varieties of present-day English (intonation – a rise in the tone of voice – is normally used for topicalisation purposes). In more standard forms only subjects and objects can undergo clefting. But in Scottish and Irish English, so-called ‘Celtic’ varieties, many elements can be the object of clefting, e.g. a prepositional phrase as in: *It’s to Glasgow she went yesterday.*

A sub-type of cleft sentences occurs when a single-clause is broken up into two clauses in which the topicalised element is brought to the front of the entire sentence. Such instances are termed *pseudo-cleft sentences*.

They’re no good. → *No good is what they are.*

He bought a bicycle → *What he bought was a bicycle.*

Summary

- *Pragmatics* is the study of language from the point of view of *usage*. It has various sub-forms depending on the emphasis given by linguists, for instance it can be investigated from a strictly linguistic stance or with regard to social factors.

- *Presupposition* means that something is taken for granted in a sentence whereas *entailment* implies that some other fact(s) apart from that stated in the sentence also hold(s).
- In the analysis of *conversation* various *implicatures* – ‘rules’ if you like – are taken to apply. They refer to the quality, quantity, relevance and manner of conversation and are assumed to be almost universally valid.
- A *speech act* is a classifiable and structured utterance spoken in an actual communication situation. There are preconditions for speech acts such as *felicity conditions* which must be met for a speech act to be successful.
- Speech acts are classified according to their *effect*. *Locutionary* acts simply express sense or reference. *Illocutionary* acts express the intentions of the speaker whereas for *perlocutionary* acts the effect is of greatest importance. There are further subdivisions in type such as *directives* (commands for example) or *commissives* (promises for instance). An *indirect* speech act is one where the intended meaning of a sentence is different from the literal one.
- *Deixis* concerns the various types of *pointing* which is possible with language. This can be direct, with adverbs of direction, or indirect, for instance with different types of pronoun.
- *Discourse analysis* is concerned with the analysis of spoken language in sections larger than the sentence. The two main features for successful discourse are *coherence* (based on semantic transparency) and *cohesion* (achieved through formal mechanisms such as sentence connectors and anaphoric elements).
- Emphasising sentence elements is achieved mainly through *topicalisation* (movement of highlighted elements, normally to the beginning of a sentence) and *clefting* (moving an element to the beginning by placing it in a dummy sentence with the rest in a subordinate clause).

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