

## CHAPTER 10

# Word fields

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## CHAPTER 10

# Word fields

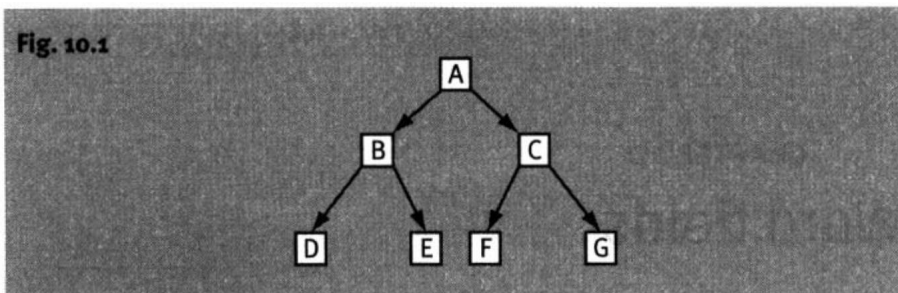
### 10.1 Introduction

The vocabulary of a language is not just a collection of words scattered at random throughout the mental landscape. It is at least partly structured, and at various levels. In this chapter we look at some of those structures. There are various modes of structuring. It is useful, at the outset, to distinguish two major types of structure, the linguistic and the psycholinguistic. No one with a cognitive linguistic bias would be willing to concede that these might be independent; however, the connection might well be indirect. Linguistic structures in the lexicon are defined linguistically—those which we shall be concerned with here are defined semantically, in terms of meaning relations; psycholinguistic structures are defined in terms of such properties as associative links, priming characteristics, and patterns of speech error. Obviously a semantic structure will be reflected in some way in patterns of language use, and in that sense is necessarily ‘psychologically real’. But the specific and characteristic psycholinguistic techniques of investigation may not reveal it as a coherent structure. The position taken here is that the two approaches are complementary; the rest of this chapter will concentrate on aspects of linguistic structuring in the lexicon.

Linguistic structures in the lexicon may have a phonological, grammatical, or semantic basis. Obvious examples of grammatical structuring are word classes (grouping of words according to their syntactic properties) and word families (sets of words derived from a common root). Here we shall be concerned with semantically defined structures, particularly those generated by sense relations, or sets of sense relations. We begin with those based on paradigmatic sense relations.

### 10.2 Hierarchies

One of the most important types of paradigmatic structure in the lexicon is the **branching hierarchy**, which prototypically has the form shown in Fig. 10.1.



A given type of hierarchy can be characterized in terms of two relations, a **relation of dominance** and a **relation of differentiation**. The relation of dominance is the one which holds between A and B, A and C, B and D, B and E, C and F, and C and G in Fig. 10.1, and is symbolized by the lines joining the **nodes** (branching points). The relation of difference is the one which holds between B and C, D and E, and F and G. In a well-formed hierarchy, the relations of dominance and differentiation are constant throughout the structure.

A further characteristic of a well-formed hierarchy is that the branches never come together again as one descends the hierarchy; to put it in another way (the so-called unique mother constraint), for any element in the hierarchy except the highest (**A** in Fig. 10.1, sometimes called the **beginner**), there is one and only one element which immediately dominates it. Only certain types of relation guarantee this state of affairs.

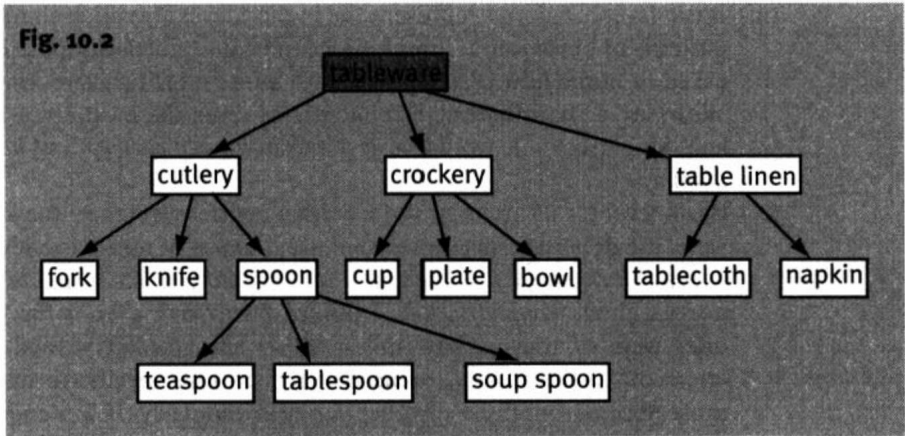
In a lexical hierarchy, which is the sort that concerns us here, A, B, . . . G correspond to lexical items (or more accurately, units of sense). There are two main sorts of lexical hierarchy, (i) taxonomic (or classificatory) hierarchies, in which the relation of dominance is taxonomy (or, more accurately, its converse, for which there is no special name) and the relation of differentiation is co-taxonomy, and (ii) meronomic (or part-whole) hierarchies, in which the relation of dominance is meronymy (or more accurately, holonymy) and the relation of differentiation is co-meronymy. We shall consider each of these in turn.

### 10.2.1 Taxonomic hierarchies

Taxonomic hierarchies are essentially classificatory systems, and they reflect the way speakers of a language categorize the world of experience. A well-formed taxonomy offers an orderly and efficient set of categories at different levels of specificity. An example of (part of) a taxonomy is given in Fig. 10.2.

#### 10.2.1.1 Levels

A characteristic of taxonomic hierarchies is that they have well-developed levels. These can be clearly seen in Fig. 10.2. As illustrated, *tableware* is at level



L *cutlery*, etc. at level 2, *fork . . . tablecloth* at level 3, and so on. Only four levels have been shown, but it is arguable that this is only a fragment of a larger hierarchy of something like *household goods*, in which the sister nodes to *tableware* would be occupied by such items as *appliances*, *furniture*, *soft furnishings*, and so on. Levels can be established in two ways, which in a prototypical hierarchy give the same answer, but in real-life hierarchies sometimes diverge. To determine the level of an element by the first method one simply counts the nodes to the top of the hierarchy (the unique item which dominates all the others in the hierarchy, the **beginner**) including the element in question. By this method, one can easily determine that *tablespoon* is at level 4. Levels established by counting nodes are called **technical levels** in Cruse (1986). The other approach to levels consists in looking for distinctive characteristics of the items at different levels. This approach yields **substantive levels**. The substantive level displaying the richest set of characteristic properties is undoubtedly what psychologists call the **basic level**, and anthropological linguists, the **generic level**. The basic level in the hierarchy illustrated in Fig. 10.2 is level 3.

### 10.2.1.2 The basic level

The main characteristics of the basic level and the items which occur there are as follows:

- (i) Basic-level categories maximize two properties of ‘good’ categories: resemblance between members, and distinctiveness of members from those in sister categories. In categories at higher levels, internal resemblance diminishes; at lower levels, external distinctiveness diminishes. Basic-level categories are thus the most efficient in the whole hierarchy.
- (ii) Basic-level categories represent the highest level for which a clear visual image can be formed. It is easy to visualize a spoon, but less easy to visualize an item of cutlery (without selecting one representative example). Likewise, a dog is easy to visualize, but an animal is not.

- (iii) Basic-level categories represent the highest level for which characteristic patterns of behavioural interaction can be described. Suppose one were asked to mime how one behaved with an item of furniture. Impossible. With, say, a chair (a basic-level item), however, there would be no problem. Similarly, *knife* would be easier than *item of cutlery*, and *horse* than *animal*.
- (iv) Basic-level terms are used for everyday neutral reference; they are, as it were, the default terms for normal use: the use of non-basic-level terms needs to be specially motivated. Thus, *Would you like an apple?* is more normal than *Would you like a Golden Delicious?*, even if the fruits on offer were of that variety, unless either the speaker wished to draw attention to the variety, or needed to be more specific to distinguish those apples from those of other varieties. Similarly, *Who's going to feed the dog today?* is generally more appropriate as a neutral question than *Who's going to feed the animal today?*, even in a situation where the less specific designation would be referentially successful, unless, of course, the additional emotive overtones observable with the more general term are intended.
- (v) Anthropological linguists point out that basic-level items tend to be morphologically simple (this applies to all the items in our example except *tablecloth*) and not borrowed by metaphorical extension from other areas of the vocabulary.

### 10.2.1.3 Other levels

Vocabulary items at levels below the basic level are more likely to be compound words than those at the basic level (think of *teaspoon*, *tablespoon*, *soup spoon*, *coffee spoon*, *butter-knife*, *steak knife*, *cake fork*, etc.). In hierarchies where the basic-level items are count nouns, the items at higher levels are frequently mass nouns. This is particularly the case for artefacts (or more generally, words in whose meaning functional rather than perceptual features are dominant), that is, not for biological species: *cutlery*, *crockery*, *furniture*, *stationery*, *underwear*, *hosiery*, *poultry*.

### 10.2.1.4 Number of levels

Research by anthropological linguists has shown that taxonomic hierarchies which appear in everyday language rarely have more than five or six levels, and even this number is uncommon: they mostly occur in small fragments. Our example has four levels, five if we include *household goods*. The number limitation does not apply to expert, technical vocabularies.

### 10.2.1.5 Gaps and autotaxonomy

Lexical gaps are not infrequent in taxonomic hierarchies, especially in levels above the basic level. We speak of a lexical gap when there is intuitive or other

evidence of the existence of a well-established concept corresponding to the point in the structure where the gap occurs. For instance, there is no superordinate (in English) for the set of verbs of “going under one’s own steam on land” (for an animal or human), whose hyponyms would be *crawl*, *walk*, *run*, *hop*, etc. Nor is there a word for the general notion of “going under one’s own steam”, whose hyponyms would include the (missing) word just mentioned, together with *swim* and *fly*, and so on. There is no everyday term for devices for telling the time (*timepiece* belongs to a different register from *clock* and *watch*). There is no everyday term in English for members of the animal kingdom (equivalent to *bête* French, or *beastie* in Scottish): *creature* is from a more formal register, and *animal* in this sense (as in *the animal kingdom*) only occurs in technical registers.

Sometimes (what would otherwise be) a gap in a hierarchy is filled by an extended sense of an item immediately above or below it, thus creating an example of autotaxonymy: one reading of a lexical item functioning as a taxonym/superordinate of another (it is not always easy to tell which is the original sense and which the extended sense). The following are examples of this:

- (ia) A: Haven’t you got any trousers<sup>1</sup> to wear?  
B: Yes, I’ve got my new jeans.
- (ib) A: Are you going to wear your jeans?  
B: No, I think I’ll wear my trousers<sup>2</sup>
- (2a) Potatoes<sup>1</sup> are one of the most nutritious of all vegetables.  
(2b) Do you want any vegetables, or just potatoes<sup>2</sup>?
- (3a) A: I hear they’ve bought a house<sup>1</sup>?  
B: Yes, a lovely cottage near Netherfield.
- (3b) A: Do they live in a cottage?  
B: No, in a house<sup>2</sup>.

In all the above, the readings marked with a superscript 1 are superordinates of those marked 2.

#### 10.2.1.6 Real-life taxonomies

We have so far been discussing what in some ways are ideal taxonomies. However, real-life taxonomies are often not so straightforward: branches seem to converge and the position in the hierarchy of common lexical items may seem obscure. One of the complicating factors is the existence of terms with a restricted perspective alongside the purely or predominantly speciating (‘kind-forming’, i.e. taxonymic) terms. The field of clothing will be used to illustrate these points. We shall take *clothing* as the beginner of the clothing taxonomy (notice that there is arguably a more inclusive taxonomy of “things you can wear”, which would include, for instance, watches and perfume). The first true

taxonyms we encounter as we go down the hierarchy are those at the basic level: *trousers, jacket, dress, skirt, shoe, bra, knickers*. There seems to be no intermediate level corresponding to *cutlery* and *crockery* in the tableware hierarchy. However, the picture is complicated by the existence of various sorts of restricted perspective-terms, which look at first as though they were the counterparts of *cutlery* and so on. Some of the perspectives are:

where worn relative to body:	<i>underwear, footwear</i>
when worn:	<i>evening wear, nightwear</i>
who wears it+only visible to intimates:	<i>lingerie</i>
worn while doing what:	<i>sportswear, slumberwear</i>

There is no term for everyday, publicly observable, not-for-special-purpose clothing; this type functions as a kind of unnamed default category, only deviations from which are lexically distinguished. Notice the following points. A further specification of 'lingerie' would need to mention *vest, knickers, nightie, pyjamas*. But the first two are underwear, and the latter are night/slumberwear. However, men's vests and men's pyjamas are not lingerie. If we call the default clothing *neutralwear*, then a reading of *dress*, let's call it *dress*<sup>1</sup>, will appear amongst its taxonyms/hyponyms. But this is a hyponym of a more general reading of *dress, dress*<sup>2</sup>, which includes both *dress*<sup>1</sup> and *evening dress*. *Tennis shoe* is a hyponym of *sportswear*, but *shoe* is also hyponymic to *evening wear* and *footwear*. All this makes it virtually impossible to construct a well-formed hierarchy from clothing terms. The appearance of chaos can be mitigated if we bear in mind the following points:

- (i) Neat hierarchies appear only if the perspective is kept constant; if this is not the case, cross-classification can occur.
- (ii) Each perspective potentially yields a separate hierarchy.
- (iii) Different hierarchies can intersect in various ways
- (iv) With the possible exception of hierarchies with unmarked perspective, the elements in taxonomic hierarchies are not full lexical senses, but contextually circumscribed subsenses.

We might thus expect to be able to establish well-formed, but partial, hierarchies under specific perspectives. An example might be the WHERE WORN perspective, whose beginner would not be lexicalized, but which would have as hyponyms:

*underwear, footwear, headwear*

These all seem to be mutually exclusive, with no common descendants/ convergent branches. Another perspective might be OCCASION/FUNCTION, again with a non-lexicalized beginner, whose hyponyms would include:

*evening wear, sportswear, leisurewear, slumberwear, outdoor wear*

These are less obviously distinct, in that some items could arguably fall under

more than one heading (e.g. *anorak*). But if we say that the nodes of the hierarchy are occupied by subsenses (that is to say, for example, that a leisure-wear anorak is different from a sportswear anorak), then the well-formedness of the hierarchy can be preserved.

### 10.2.1.7 Contrastive aspects

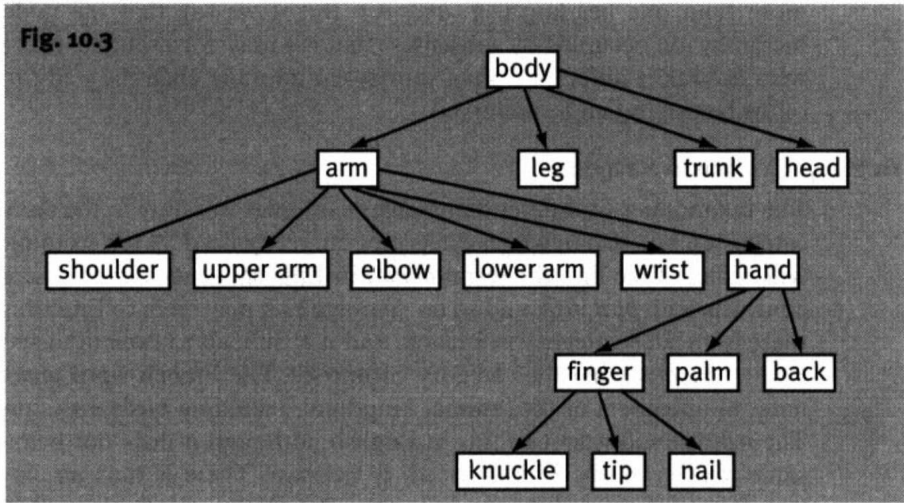
The taxonomies of different languages can differ not only in the names of the categories, but also in which categories are recognized. A few examples of this will suffice. Take first the term *animal* in English, in its everyday sense which contrasts with *bird*, *fish*, and so on. Strange as it may seem to English speakers, there is no such category in French, and it is difficult to explain to speakers of French exactly what the category comprises. The French word *animal* designates all members of the 'animal kingdom', including birds, fish, insects, etc. The nearest equivalent to this in English, although it does not belong to the same register as the French word, is *creature*. There is thus no single word translation of *animal* in, for instance, *The Observer's Book of British Wild Animals*, it has to be rendered as something like *Les Mammifères, Reptiles et Amphibiens Sauvages de la Grande Bretagne*. Another similar case is *nut* in English, which again has no equivalent in French (nor in German). For English speakers, *walnuts*, *hazelnuts*, and *almonds* belong to a single category, namely that of *nuta*; there is no such category for a French speaker (or thinker!). (There is a **botanical** category of 'dry fruit', but most French speakers do not know it.) Other examples: in French, *une tarte aux pommes* is a kind of *gâteau*, but an *apple tart* is not a kind of *cake*, in French, *la marmelade* belongs firmly in the category of *confiture*, but *marmalade* is felt by English speakers not to be a kind of *jam*, in German, an *Obstgarten* is a kind of *Garten*, but an *orchard* is not a kind of *garden* for an English speaker. These sorts of examples could be multiplied indefinitely.

### 10.2.2 Meronymic hierarchies

The second major type of lexical hierarchy is the meronymy, in which the relation of dominance is (the converse of) meronymy, and the relation of differentiation is co-meronymy. Probably the most familiar of the extensive meronomies is the segmental version of the human body as seen from the outside, as shown in Fig. 10.3.

Some of the details of this hierarchy are disputable; for instance, whether shoulders are parts of arms, as shown, or parts of the trunk. Commonly encountered machines also have well-developed meronomies associated with them, but few people who are not experts could give a full account of the parts of a car, washing machine, or computer. Most of our knowledge is in the form of fragments of meronomies.





### 10.2.2a Levels

The major formal difference between a taxonomy and a meronymy is the lack of clear generalized levels in the latter. In a sense the body meronymy illustrated is uncharacteristic because of the homologies between the arm and the leg: *knee* corresponds to *elbow*, *sole of foot* to *palm of hand*, *toes* to *fingers*, etc. But this does not extend to other parts of the body. Speakers have no intuitions as to whether, for instance, *this fingernail* is or is not at the same level as the *anus*, or, in a different domain, the *hub-cap* to the *seat cushions* or the *carburettor jets*. For this reason, there seems to be no equivalent to the basic level of a taxonomy, no unmarked level of specificity independent of context. Of course there are unmarked levels of specificity in particular contexts, but these appear to be governed by something like Gricean principles (see Chapter 17). For instance, one would be more likely to say *Mary felt someone touching her arm* than *Mary felt someone touching her upper arm*: the latter would require special contextual conditions. (Even though the arm is part of the body, *Mary felt someone touching her body* would be interpreted differently.) On the other hand, *Ahmad came into view, the falcon chained to his wrist* would be more likely than *Ahmad came into view, the falcon chained to his arm* (it is not immediately clear why this is so).

#### 10.2.2.2 Lexical gaps

In a taxonomic hierarchy, the beginner is frequently not lexicalized. This is never the case in a meronymy. Gaps do occur, however, and most often in a characteristic position: not infrequently, the main functional part has no name, and speakers are embarrassed if they are asked to supply it. For instance, what do we call the part of a *teapot* to which the *spout*, *handle*, and

*lid* are attached? Some people reply: *But that is the teapot* other responses are ZMWZ and *body*. But there seems to be no fully established term. Another example: a *spoon* has two main parts, the *handle* and the ??????. Again the response is usually hesitation and embarrassment, with some again suggesting *bowl* and *body*. Yet another example concerns the part of a pair of spectacles to which the arms are attached.

Some apparently ‘accidental’ gaps are found, such as the part of a *fork* to which the *prongs* are attached (or, indeed, the part of the *hand* to which the *fingers* are attached, and of which the *palm* and the *back* are parts). These are, however, relatively rare. In some cases we find **automeronymy**, that is, when part and immediate whole have the same name (but distinct senses, cf. autohyponymy). A good example of this is to be found in the human body meronymy. The term *body* is used both (i) for the whole ensemble and (ii) as a close equivalent to *trunk* (it is, in fact, perhaps the more usual term). It is *body* in sense (ii) which is the metaphorical source of the suggestions of *body* for the main parts of *teapot* and *spoon*. Other possible examples of this are *arm*, in two senses, one which includes *hand* and one which excludes *hand*, and *wheel*, which has two senses, one including and the other excluding *tyre*.

### 10.2.2.3 Contrastive aspects

Languages typically show differences in respect of the way wholes are divided into lexically distinguished parts, although there are reasons to believe that the underlying principles are more or less universal. This means that differences are mostly confined to (i) different groupings of the same smaller units, and (ii) differences in how far subdivision is carried. Radically non-congruent divisions are rare. An example of (i) is provided by English and Modern Greek in respect of divisions of the arm. In English, *hand* extends to the wrist and no further; in Modern Greek (which is not unique in this respect), *xeri* goes up to the elbow. There is a parallel relation between *foot* and *podi*: the latter extends to the knee. Notice that both systems respect the joints as natural boundaries for parts. Which part of *xeri* is being referred to in a particular instance is left to context to determine (there is rarely any ambiguity). But since the part of *xeri* which corresponds to *hand* is the most salient part, and overwhelmingly the most frequently involved in activities and so on, in the vast majority of contexts, little is lost by translating, or otherwise equating *hand* and *xeri*.

The other type of difference appears when one language provides finer divisions than another. One might say, for instance, that *pommlette* in French is a subdivision of the part denoted in English by *cheek* (and French *joue*). The *pommlette* is the rounded part of the cheek over the cheekbone; *cheekbone* will not do as an equivalent, because one cannot say *She has red cheekbones*, whereas in French one can say *Elle a les pommettes rouges* (this would go into English as *red cheeks*). Another example is the Turkish word *ense*, which means “back of the neck”. It is worth asking whether the absence of an English equivalent for *pommlette* or *ense* represents a **lexical gap** or a

**conceptual gap.** This distinction is by no means always easy to make, although there are clear cases. For instance, for French speakers, there is no natural category to which peanuts, almonds, and walnuts belong (English “nuts”), nor one which includes rabbits and frogs and crocodiles, but excludes birds and fish (English “animals”). Here we have a conceptual gap. On the other hand, English speakers would probably agree that there was a useful concept of “animal locomotion”, but since we have no verb denoting just that, we can speak of a lexical gap. In the case of *pommette*, there is probably a conceptual gap: English speakers feel no need to single out this area of the cheek. The case of *ense* (cf. French *nuque*) is less clear. The concept is easy enough to grasp for English speakers, but then so are concepts like “the right side of the head” and “the underside of the tongue”, which English speakers can construe when necessary, but which would not be felt to be salient enough to merit lexical recognition. It might also be relevant to ask whether there is any sign of (incipient) lexification of *back of the neck*, such as non-compositional specificity of meaning (as in the case of *blackbird*), or morphological evidence such as the existence of  *fingertip*, but not \**nosetip* alongside *tip of the finger* and *tip of the nose*: these would point to the emergence of a lexifiable concept. All things considered, my intuition is that *ense*, like *pommette*, does not designate a viable concept for an English speaker.

Meronomic systems of different languages also differ in the way analogous parts of different wholes are grouped for naming purposes. For instance, in French, the handle of a door, the handle of a suitcase, and the handle of a pump would be given different names (for a door, *bouton* (if round, otherwise *poignée*), for a suitcase, *poignée*, for a pump, *manivelle*). They may also differ in the way similar parts of the same whole are grouped for naming purposes. For instance, in English, we distinguish one of the digits of the hand from all the others by means of the term *thumb-*, there is a sense of *finger* which excludes *thumb*: *The hand has four fingers and a thumb* (as well as one which includes *thumb*: *five-finger exercises*). In Turkish, no such distinction is made among the digits of the hand, although the thumb, like the other digits, can be distinguished by the expression *büyük parmağı* (“big finger”—cf. English *big toe*).

One further point deserves mention. Many languages designate the digits of the hand and those of the foot by unrelated terms (*finger, toe*), many others, however, call the digits of the foot by a name equivalent to *foot-fingers* (e.g. *doigts de pied* in French). It is claimed that the reverse process, naming the fingers *hand-toes*, never occurs, and that this is motivated by the cognitive salience of the hand as opposed to the foot. This may well be the case, but perhaps the claim should not be made too strongly. I would not find it unnatural to refer to the *heel of the hand*.

## 103 Linear structures

### 103.1 Bi poles

The simplest kind of linear structure is a pair of opposites. But there is perhaps not a great deal to say about these as structures, other than what has been said under the heading of opposites in Chapter 9.

### 103.2 Bipolar chains

However, the scale on which a pair of opposites operates is often host to a number of terms which denote different degrees of the property. The most frequent pattern is for **implicit superlative** terms of opposite polarity at each end of the scale (there is a polarity switch between the basic antonym pair):

minuscule tiny small large huge gigantic

Implicit superlatives in English can be recognized by a number of features:

- (i) They are resistant to verbal grading compared with normal antonyms: *very huge, huger, extremely tiny, very minuscule*, etc. are all to some degree (some more than others) odd (although comparatives are usually happier with *even*: *The first one was huge, the second one was even huger*).
- (ii) They can be prosodically graded, by varying the pitch range of an intonational fall carried by the adjective—the greater the fall, the higher the degree of the underlying property; normal antonyms sound odd with this intonation.
- (iii) They can be modified by a low-pitch unstressed *absolutely*:  
absolutely huge! absolutely tiny! ?absolutely large!
- (iv) They resist affixation of *-ish*:  
largish, smallish, \*hugish, \*minusculish

Further examples of such chains are:

spotless clean dirty filthy

fantastic excellent good bad awful abysmal

beautiful pretty plain ugly

adore love like dislike hate abominate

The temperature terms in English illustrate two much less frequent phenomena in bipolar scales: **attenuative** terms as well as implicit superlatives (i.e. *warm* and *cool*), which occupy a position on the scale between the basic antonyms, and a term which covers the mid-point between the basic pair of

opposites (*lukewarm*), which has no polarity (does *more lukewarm* indicate a higher or lower temperature than /utoiw?):

freezing cold cool lukewarm warm hot scorching

### 10.3.3 Monopolar chains

In monopolar chains, there is no sense that terms at the ends of the chains are oriented in opposite directions. There are various different types of monopolar linear lexical structures. There are also various possible ways of describing and classifying them. The following system largely follows Cruse (1986).

#### 10.3.3.1 Degrees

Degrees incorporate as part of their meaning different degrees of some continuously scaled property such as size or intensity, but there is no relation of inclusion. Their boundaries are typically vague, and they have intuitively not lost all their gradability. We can distinguish cases where the terms actually designate values of the underlying property from those which do not, but encapsulate values of a gradable property. Examples of the former type are:

fail pass distinction

An example of the second type is:

mound hillock hill mountain

Notice that these encapsulate some notion of size, but do not actually refer to sizes, but to types of earth protuberance. Other examples are:

haze	mist	fog	pea-souper	
chuckle	laugh	guffaw		
glance	look	stare		
puddle	pond	lake	sea	ocean
breeze	wind	gale	hurricane	

#### 10.3.3.2 Stages

Stages are points in a lifecycle (taken in a broad sense) of something and normally involve the notion of progression:

primary secondary undergraduate postgraduate  
infancy childhood adulthood old age  
egg larva pupa butterfly

#### 10.3.3.3 Measures

Measures are based on a part-whole relationship, with each whole divided into a number of identical parts; there is typically a geometrical relationship between values of the scaled property designated by adjacent terms:

second minute hour day week month (etc.)

inch      foot      yard (etc.) mile  
 ounce    pound stone (etc.) ton

#### 10.3.3.4 Ranks

In ranks the underlying property does not vary continuously, but in discrete jumps; there is none the less something that a term has more or less of than its neighbours:

lecturer senior lecturer reader professor  
 private corporal                      sergeant

In the above cases, the underlying property can be considered to be something like “seniority”. But notice that this does not vary gradually: one sergeant cannot outrank another.

The cardinal integers can be considered to fall under this heading, the variable property being “numerosity” (which again, does not vary continuously: no group of twelve items can outnumber another group of twelve items). The levels of a taxonomic hierarchy are also ranks:

variety species genus family

#### 10.3.3.5 Sequences

In all the above cases, there is some property which an item has more of than items which precede it in the sequence, and less of than items which follow it. However, there are also ordered terms for which this does not seem to be the case; these are called sequences. There is nothing that Tuesday has more of than Monday:

Monday	Tuesday	Wednesday	Thursday
January	February	March	April
Spring	Summer	Autumn	Winter
morning	afternoon	evening	night

These categories should not be taken too seriously: it will be noticed that several sets could be considered under more than one heading. There may be a satisfactory taxonomy, but it has not been found yet: it may be better to think in terms of features which cross-classify.

## 10.4 Grids

Grids are generated by recurrent concrete sense relations, or, which comes to much the same thing, by recurrent (and therefore independent) semantic components. The unit of a grid is the cell, which consists of four lexical items, any one of which must be uniquely predictable from the remaining three. The following are examples of cells:

- |           |        |           |        |
|-----------|--------|-----------|--------|
| (i) man   | woman  | (ii) hand | finger |
| ram       | ewe    | foot      | toe    |
| (iii) dog | puppy  | (iv) take | steal  |
| cat       | kitten | kill      | murder |

These can be given componential analyses as follows:

- |       |            |                     |
|-------|------------|---------------------|
| (i)   | [X] [MALE] | [X] [FEMALE]        |
|       | [Y] [MALE] | [Y] [FEMALE]        |
| (ii)  | [X]        | [X] [DIGIT]         |
|       | <b>m</b>   | [Y] [DIGIT]         |
| (iii) | [X]        | [X] [YOUNG]         |
|       | [Y]        | [Y] [YOUNG]         |
| (iv)  | [V.(i)]    | [V.(1)] [ILLEGALLY] |
|       | [V.(2)]    | [V.(2)] [ILLEGALLY] |

Notice that the following is not a well-formed cell: :

flower tulip  
animal cat

In a sense, the relation of taxonomy recurs, here. But the criterion of full predictability of any item from the other three is not met. Prediction is possible in one direction:

flower tulip  
? cat

But in the other direction prediction is not possible:

flower tulip  
animal ?

A word needs to be said about the relations involved in these structures. In many cases, these are simply concrete versions of already familiar relations. Consider (ii). The relation between *hand* and *finger* is (a concretely specified version of) the familiar one of meronymy, and that between *hand* and *foot* is (a concretely specified version of) co-meronymy. But what of the relation between *finger* and *toe*? They are not co-meronyms, because they are not parts of the same (immediate) whole. This is a new relation, which appears only in connection with recurrent concrete relations: in Cruse (1986) terms related as *finger* and *toe* are, are termed **analogues** (the relation may be called **analogicity**). Another example of analogicity is:

captain	team
headmaster	school
vice-chancellor	university
boss	business
governor	prison

The terms on the right are analogues (of one another).

It is clear that the introduction of concrete relations has brought with it whole new dimensions of structuring in the lexicon. An important and interesting question is whether there is a finite number of such structures, or whether the number is indefinitely large. Even if the number turns out to be indefinitely large, there is still a question of whether the number of distinct relations is finite (indefinitely large structures could in principle be generated from a finite number of relations). No firm position will be taken on this point here; but it bears mention that some linguists believe the number to be limited (one suggestion is 53!).

All the grids illustrated above have been paradigmatically consistent. But there is nothing in the notion of a grid which imposes paradigmatic constraints. The following are well-formed grid cells:

pen	write	bird	fly	dog	bark
spade	dig	fish	swim	cat	miaow

However, there must be a paradigmatic relation between analogues; for instance, anything which bears the same relation to something else as *pen* does to *write*, or *spade* to *dig*, must be a noun.

## 10.5 Clusters

Clusters are essentially groups of synonyms. The name is intended to indicate that the sharpness and complexity of structuring is much less than in other types of field: they are somewhat informal groups. There are two main types of cluster, the centred cluster and the non-centred cluster.

### 10.5.1 Centred clusters

A centred cluster has a more-or-less clear core of one or two items, and a penumbra of more peripheral items. Among the characteristics of the core items are:

- (i) They are expressively neutral.
- (ii) They are stylistically unmarked, that is, they occur in a wider range of registers than any of the other terms.
- (iii) They are propositionally superordinate.

In the set: *die, pass away, pop off, decease, breathe one's last, kick the bucket*, *die* is clearly the core member: it is expressively neutral, and stylistically unmarked. Feature (iii) is not applicable, since the members of the set are all propositional synonyms.

In the set: *walk, amble, stroll, stride, saunter, walk* is the core item: there is no marked expressive variation in this set, but *walk* is stylistically unmarked, and



is a superordinate of all the others. Although *amble*, *stroll*, and so on are hyponyms of *walk*, they do not form a satisfactory hierarchy, because the relation of difference is too weak: there is considerable overlap between, say, *amble* and *stroll*, which can be differentiated only by examining their prototype centres.

In the set: *brave*, *courageous*, *intrepid*, *gallant*, *fearless*, *valorous*, *heroic*, *plucky*, there are two candidates for the core, *brave* and *courageous*. The criteria do not favour either one of these, they are both relatively unrestricted contextually compared with their fellows, so we must recognize a two-member core.

### 10.5.2 Non-centred clusters

In non-centred clusters, the items spread over a spectrum of sense, but there is no superordinate item. Typically they display very slight propositional differences, which do not destroy synonymy as long as the items are reasonably close together on the spectrum, but may not be felt to be synonyms if they are widely separated. Typical examples are (taken as referring to sounds):

*rap*, *tap*, *knock*, *slap*, *thwack*, *crack*, *bang*, *thump*, *bump*, *pop*, *tick*, *click*, *ring*, *tinkle*, *clink*, *clank*, *jingle*, *jangle*, *ping*, . . .

Clusters may overlap: this is unusual and non-canonical in taxonomic and meronomic hierarchies. For instance, the following two clusters overlap:

- (i) *unusual*, *rare*, *uncommon*, *infrequent*, etc.
- (ii) *odd*, *queer*, *strange*, *weird*, *peculiar*, *extraordinary*, *alien*, etc.

Group (i) consists of words denoting low frequency of occurrence, whereas the words in group (ii) denote unfamiliarity (of course, these notions are not unconnected). Although the groups are in a sense distinct, intuitively, *unusual*, *odd*, and *strange* (at least) are felt to be synonyms.

## 10.6 Miscellaneous types

We have now dealt, albeit briefly, with the major types of word field that can be treated in terms of characteristic structures. There are other important groupings of words, for which the notion of structure seems less appropriate. Two examples will be mentioned. First, there are the so-called **word families**. These are words derived from a common root, like *cook* (v.), *cook* (n.), *cookery*, *cooker*, *cooking* (n.), etc. Of course there are semantic processes at work here which recur with other roots, but there does not seem much to say about this group of words (or other similar ones) **as a group**. Second, there are groupings of words by, for instance, register, as in colloquial or formal use, or by field of discourse, such as the vocabulary appropriate for (and possibly

restricted to) a religious sermon, a legal document, or a medical textbook. Again, as structures these have no particularly striking properties.

## Discussion questions and exercises

1. Construct the best lexical hierarchies you can from the following sets of words, noting any difficulties. For Set A you will need to supply a number of superordinates.

- (A) *tablecloth*      *wine glass*      *table mat*      *salt*  
*napkin*      *teaspoon*      *breadknife*      *coaster*  
*tumbler*      *vinegar*      *water jug*      *fork*  
*cake dish*      *saucer*      *napkin ring*      *knife*  
*butter-knife*      *corkscrew*      *cake-slice*      *pepper*  
*breadboard*      *butter dish*      *soup spoon*      *teaspoon*  
*serving spoon*      *soup bowl*      *dessertspoon*      *mug*
- (B) *jacket*      *knickers*      *sportswear*      *T-shirt*  
*shirt*      *blouse*      *underpants*      *trousers*  
*jeans*      *cardigan*      *coat*      *pyjamas*  
*sweater*      *suit*      *evening wear*      *vest*  
*overcoat*      *waistcoat*      *clothes*      *underwear*  
*skirt*      *anorak*      *nightwear*      *tracksuit*  
*shoes*      *slippers*      *sandals*      *boots*  
*socks*      *stockings*      *tights*      *top*  
*bodysuit*      *kilt*      *dress*      *knitwear*  
*dressing gown*      *nightdress*      *jeanswear*      *leggings*  
*blouson*      *blazer*      *trenchcoat*      *briefs*  
*bra*      *stole*      *gloves*      *sporrán*
- (C) *book*      *novel*      *headline*      *section*  
*booklet*      *paperback*      *textbook*      *review*  
*programme*      *volume*      *thesis*      *title*  
*preface*      *catalogue*      *hardback*      *periodical*  
*pamphlet*      *footnote*      *encyclopaedia*      *biography*  
*index*      *brochure*      *questionnaire*      *memorandum*  
*journal*      *circular*      *manifesto*      *magazine*  
*handbook*      *article*      *tract*      *page*  
*newspaper*      *dictionary*      *thesaurus*      *editorial*  
*leader*      *paragraph*      *leaflet*      *letter*  
*note*      *chapter*      *leader*      *monograph*  
*paper*      *sentence*      *advertisement*      *glossary*

## Suggestions for further reading

The topics covered in this chapter are covered in greater detail in Cruse (1986), chs 5-8.

For discussion of Tolka taxonomies' by anthropological linguists see Berlin *et al.* (1973), Brown *et al.* (1976), Berlin (1978), Hunn (1983), Brown (1995) and Brown (forthcoming *a*). Lehrer (1974) contains a detailed study of the field of cooking terms in English.

Meronomies are discussed in Brown (1976) and Brown (forthcoming *b*). Brown (forthcoming *a*) and (forthcoming *b*) are especially interesting on the general principles of naming.