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Nicolai van Wijk Dedicata

edenda curat
C. H. van Schooneveld
Indiana University

Where Have All the
Adjectives Gone?

and other essays in
Semantics and Syntax

R. M. W. Dixon

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<i>Part D Nominal classification</i>	157
5. Noun classes	159
5.1 Introduction	159
5.2 Criteria	160
5.3 Characteristics	166
5.4 Evolution	170
5.5 Semantics	173
5.6 Semantic basis of noun classes in Dyirbal	178
6. Classifiers in Yidiny	185
6.1 Introduction	185
6.2 Use	186
6.3 Criterion for recognising classifiers	189
6.4 Semantic basis of classifiers	191
6.5 Yidiny classifiers and Dyirbal noun classes	203
7. Olgolo syllable structure and what they are doing about it	207
8. Noun classifiers and noun classes	211
8.1 Types of classifier	211
8.2 Criteria	213
8.3 Correlation with morphological type	218
8.4 Unusual cases	219
8.5 Semantics	226
8.6 Origin and development	230
<i>Part E</i>	
9. Semantic neutralisation for phonological reasons	235
References	239
Index	251

PART A

1. Where have all the adjectives gone?

1.1 Introduction

In writing the grammar of any language, a linguist will recognise a number of parts of speech, or word classes. There will usually be a number of minor parts – small, closed classes such as Pronoun and Preposition – and a number of major parts of speech – large, open-ended classes such as Noun, Verb and Adjective. The recognition of word classes within a language depends on morphological and syntactic criteria; linguists have devoted considerable attention to discussion of suitable criteria.

Similarities can be recognised between word classes in different languages – for instance, the term Noun can be used for major classes in two different languages, even though these classes may have rather different morphological and syntactic properties (compare English – where a noun is partly defined in terms of its potential for co-occurrence with an article – with Latin – where a noun is defined partly in terms of its possibilities of case inflection). Recognition of such inter-language correspondences involves semantic, and perhaps universal-syntactic, criteria. Linguists have paid almost no attention to the formulation of criteria of this kind (this has been at least partly due to the lack of any adequate semantic theory).

It is a fact that inter-language class correspondences *are* made, on an intuitive basis, and *are* valuable. When a linguist works on some new language he will first set up word classes, using grammatical criteria internal to the language. He will then name the classes. It is an empirical fact that there is *always* a major class that is aptly termed Noun: there is *never* any doubt as to the applicability of this traditional label, and *never* any question as to which class should be called Noun. Readers of the grammar find the class names helpful, and are able to make predictions on the basis of them, that are in most cases realised.

§1.2 discusses the theoretical basis for inter-language class correspondences. The remainder of this section presents some suggestive data and delimits the topic of the paper.

It is interesting to enquire whether all languages have the major classes Noun, Verb and Adjective. It seems that they do all have Noun and Verb – at least, I know of no convincing counter-examples to this assertion.¹ However, not all languages have the major word class Adjective. Either they have no Adjective class at all, or else there is a small non-productive

1. A number of languages which have been reported to have no Noun/Verb distinction have been looked at in some detail. In the case of Fijian (Milner, 1956) the author has stated (private communication) that the non-recognition of a Noun/Verb distinction was a feature of the descriptive model used rather than of the language – the distinction can in fact be drawn on syntactic/morphological grounds. The best-known ‘examples’ of languages lacking a Noun/Verb distinction are the Wakashan family – Nootka, Kwakiutl, Nitinat, and so on (Whorf, 1956:98; etc.). But in all these languages it seems that, although noun and verb classes have many grammatical properties in common, there are enough differences to justify the recognition of separate parts of speech. Thus Boas (1947:205) on Kwakiutl: ‘while stems cannot readily be divided into a nominal and a verbal class, the distinction between personal and possessive pronominal suffixes proves that the two classes are distinct’ and ‘the noun derived from a verb retains its verbal character insofar as it may take an object or instrumental’. In addition, ‘nominalising suffixes’ can only occur with verbal stems. The point here is that each root is, in Kwakiutl (as in other languages), *basically* a noun or a verb or etc. (we are here referring to the ‘deep level’, explained in §§1.2.4-6); but Kwakiutl is rich in derivational processes and each root can have surface membership of both major parts of speech. Similarly, in Nootka, we can have ‘man-VERBAL ENDING large-NOMINAL ENDING’ meaning ‘The large one is a man’ or else ‘large-VERBAL ENDING man-NOMINAL ENDING’ meaning ‘The man is large’ (Swadesh 1938:78). Swadesh insists that ‘normal words do not fall into classes like noun, verb, adjective, preposition, but all sorts of ideas find their expression in the same general type of word, which is predicative or non-predicative according to its paradigmatic ending’; he does however notice (1938:98-9) that there are seven sets of ‘special reference stems’ and that each lexeme selects just one set (each set involves a pronominal-like ‘indirect reference stem’, a ‘relative stem’ and an ‘interrogative stem’). He then mentions that ‘the seven sets of special reference stems suggest a semantic classification of lexemes, which also has significance in the internal syntax, since different implicit derivations and other syntactic peculiarities are limited to combinations of lexemes of given categories of meaning, some of which correspond to these’. Swadesh then sets up seven classes – four closed ones (Location, Time, Quantity and Indication) – and three open ones (Entity, State and Action). Of the open classes, ‘Entity’ – containing ‘a considerable number of stems referring to species of flora and fauna and supernatural beings, age and other classes of people and other beings, body parts, groups of classes of objects according to shape, and other entities’ – would be very aptly termed ‘noun’; ‘State’ – expressing ‘quality, condition, color, size, position, mental state or attitude, condition of the weather, and other notions’ – could be termed ‘adjective’, and ‘Action’ – expressing ‘movement and various other activities’ – appears to correspond to what is called ‘verb’ in other languages. Thus, far from it being impossible in Nootka to distinguish Noun and Verb, perfectly good criteria can in fact be given for distinguishing Noun, Verb and Adjective.

minor class that can be called Adjective. In either of these cases it is interesting to ask how the language gets along without a full Adjective class. That is, how does it express concepts that are expressed through adjectives in languages, like English, which do have this major class. There is no simple answer to this question. Some adjective-deficient languages express all adjectival concepts through intransitive verbs² (as in the case of Chinese), others express some through nouns and some through verbs (for example, Hausa), and others invoke further means (Chinook renders adjectival concepts through the major classes Noun and Verb and the minor class Particle). In this paper we examine these various means, and attempt to draw some conclusions concerning universal semantic ‘types’ and their part-of-speech associations in languages of different typological kinds. We restrict ourselves to ‘descriptive adjectives’ (Bloomfield 1933:202). Some of the adjective classes we mention also contain a few ‘limiting adjectives’ – numbers, ‘some’, ‘this’, ‘other’, ‘how many’ and the like; these are entirely ignored in the present study.

For languages which have the major class Adjective, the semantic content of the class is fairly constant from language to language. Thus an adjective in English will normally be translated by an adjective in the Australian language Dyirbal, and vice versa.³

Languages that have only a limited class of adjectives show considerable similarity in the concepts that are expressed through adjectives. For instance, in the case of Igbo (from the Kwa subgroup of the Niger-Congo ‘family’) formal criteria support the recognition of an adjective class with just eight members, making up four antonym pairs (Welmers

2. ‘Intransitive’ is here used in a wide sense, and includes those verbs which must take an obligatory indirect object but no direct object. For a language with syntactic case inflections the criterion would be ‘any verb which cannot occur with both a nominative NP and an accusative NP (or an ergative NP and an absolute NP, in an ‘ergative’ language) is intransitive’; this can be extended in appropriate ways for languages that show syntactic function solely by word order.
3. Almost every adjective in Dyirbal would be translated by an adjective in English and vice versa. There are some exceptions – Dyirbal has some verbs describing ‘feeling ill’ or ‘tired’ that would have to be rendered by adjectives in English; and in one dialect of Dyirbal the concept ‘hungry’ is rendered by a verb rather than an adjective – but they are extremely minor. It is interesting to note that (on a dictionary count) about 12-15% of the most frequent roots in English are adjectival, and about the same percentage of the most frequent 2,000 in Dyirbal are adjectival.

and Welmers 1969; Welmers 1973):

úkwú	'large'	ńtà	'small'
óhý'rú	'new'	ócyè	'old'
ójí'í	'black, dark'	ócá	'white, light'
ómá	'good'	ójó'ó	'bad'

The Chadic language Hausa – which, although spoken only a few hundred miles from Igbo, is not known to be genetically related to it – has a small, closed adjective class with about twelve members:⁴

babba	'big'	qarami	'small'
dogo	'long, tall'	qanqane	'small'
danye	'fresh, raw, unripe'	gajere	'short'
sabo	'new'	tsofo	'old'
baqi	'black'	fari	'white'
		ja	'red'
		mugu	'bad'

All Bantu languages have a minor class Adjective, with membership ranging from less than ten items to forty or fifty (and with about thirteen descriptive adjective roots reconstructable for Proto-Bantu). The Southern Bantu language Venda (Doke 1954:166/7), for instance, has the following adjectives:

-hulu	'big'	-tuku	'small'
-lapfu	'long'	-pfufhi	'short'
-denya	'thick'	-sekene	'thin'
-nu	'wet'		

4. Grammars of Hausa basically agree on these twelve adjectives. Abraham (1959) mentions that *babba* 'big' and *ja* 'red' do not have separate masculine and feminine forms; the other forms given have distinct masculine and feminine endings in the singular. Migeod (1914) lists *baba* 'big' as an adjective but then says that it 'is in reality a noun meaning "greatness"'. Taylor (1923), Robinson (1925) and Migeod also include several more colour adjectives – for instance *rawaya* 'yellow' which is more appropriately classified as a noun, being primarily the name of 'a plant with a tuberous rhizome from which a yellow dye is obtained . . .' (Bargery, 1934:848). Some of the grammars also mention a few further 'borderline adjectives' but do not agree concerning these.

-vhisi	'raw, green'	-tete	'soft'
-swa	'young, new'	-lala	'old'
-rema	'black'	-tshena	'white'
-tswu	'black'	-tswuku	'red'
-setha	'yellow'	-khwivhilu	'red'
-vhuya	'good-natured'	-vhi	'bad'
-hulwane	'important'		

Languages with very small adjective classes are found in other continents – Birk (1976) reports a class of only seven items for the North Australian Malak Malak (they are 'large, small, short, young, old, good, bad'); and study of Sapir's (1930/31) materials on Southern Paiute reveals an adjective class of about a dozen items ('large, small, long, short, new, old, good, high, strong, hard, cold').

Some languages may have slightly larger classes. Burrow and Bhattacharya (1970) report about 20 for the Dravidian Pengo, Samarin (1967) lists 30 or so 'adjunctives' (words which function as adjectives and/or adverbs) for the Central African Creole Sango, and Hoff (1968: 259) mentions that his material 'contains not more than 43 monomorphemic words' belonging to the adjective class in the Guianese language Carib.

In some languages that have a major class Adjective, a few members of the class are set off from the rest by virtue of a certain morphological property. For instance, in the Austronesian Rotuman (C. M. Churchward, 1940:39), just twelve members of the open-ended adjective class have distinct singular and plural forms:

ti'u	'big'	mea'me'a	'small'
roa	'long'	luka	'short'
hepa	'broad'	jiakjika	'narrow, thin'
'atakoa	'whole, complete'		
kele	'black'	mafua	'old'
		fisi	'white'
		mi'a	'red'
		hani	'female'

Yurok, an Algonquian-affiliate from California, has only two major classes, Noun and Verb; English adjectives are translated by Yurok intransitive verbs. A small subset of the verb class is set off from the rest of

the class by a special property: members of the subset have variant stem forms, selected by the covert category of the noun they qualify (the covert categories include 'humans', 'tools', 'long things', 'flat things', 'houses', etc. — see §8.4.2 below). The subset includes numbers, and about eleven adjectival roots (nine are quoted in the form for the category 'human'; 'grey' and 'flat, smooth' for the category 'round things' — Robins, 1958):

11	peloy-	'big'	cey(kel-)	'small'
	knewolep-	'long, tall, 'high'	tkʷep-	'short, low'
	to' moh	'thick, wide'	mesi?r(on-)	'thin, slender'
	sk̩wihk̩iy-	'flat, smooth'		
	lo?ogey(ow-)	'black'	muncey(ow-)	'white'
	p̩lkʷrh	'grey'	p̩k.yi?ry(-)	'red'

The Nilo-Saharan language Acooli has a closed class of about 40 adjectives. Seven of these are set off from the rest of the class by having distinct singular and plural forms (Crazzolara, 1955):

7	d̩it	'great, big, old (of persons)'	t̩edi	'small, little'
	dwóðñ	'big, large (of volume)'		
	boòr	'long, high, distant (of place and time)'	ceèk	'short'
	beér	'good, kind, nice, beautiful'	raàc	'bad, bad tasting ugly'

The other adjectives in Acooli include 'new', 'old', 'black', 'white', 'red', 'deep', 'shallow', 'broad', 'narrow', 'hard', 'soft', 'heavy', 'light', 'wet', 'unripe', 'coarse', 'warm', 'cold', 'sour', and 'wise'.

The lists we have given — of complete adjective classes, and of morphologically-determined subsets of larger classes — show a good deal of similarity of content. All contain 'large (= big)' and 'small (= little)', all but Igbo have 'long' and all but Igbo and Malak Malak 'short'. 'Black' and 'white' occur in each list save that for Acooli (and these are in the full adjective class for Acooli).

When the sample of languages is widened, the pattern of recurring

1. Where have all the adjectives gone

semantic types is confirmed. A survey of 17 languages with small adjective classes, together with the morphologically-determined subsets in Rotuman, Yurok and Acooli, yielded the following result:⁵

'large' occurred in all 20 languages	Dim	Value
'small' in 19	Dim	Value
'long' in 14	Dim	color
'short' in 15	Dim	color
'new' in 15	Age	color
'old' in 14	Age	color
		unripe' in 7

The size of the classes in the 20 languages ranged from 7 to 24, with an average of 13. Other glosses that recurred in more than a single language were wide (2 languages); thick (2), thin (3); sharp (4), blunt (2); heavy (5), light (5); soft (2); strong (3); hot (3), cold (2); wet (2); sour (2); whole (= complete) (2); fierce/angry/wild (3); generous (2); female (3) and beautiful (3). Note that Xhosa has 'pretty/beautiful' and 'bad/ugly' (in addition to 'large, small; long; new, old') but the adjective class has no term glossed simply 'good' (McLaren 1936:63).

We have noted, firstly, similar semantic contents of major adjective classes in languages which have these. Secondly, similarities of content between minor classes and, to a degree, between minor classes and morphological subsets of major classes. These similarities are suggestive of the existence of some type of syntactico-semantic universals and these we attempt to investigate in the remainder of the paper.

5. Besides the six languages exemplified above, and Malak Malak and Southern Paiute, the sample included seven from Africa: proto-Bantu (supplied by the late Malcolm Guthrie — see also Guthrie 1967-71), Bemba (see §1.4.2), Ndebele (data from Owen Nancarrow) and Xhosa; Gbeya from the Adamawa-Eastern branch of Niger-Congo (Samarin, 1966); the Nilo-Saharan language Kanuri (Lukas 1937); and the Togo-Remnant tongue Avantine (data from Kevin Ford). Also the Australian Tiwi (data from Charles Osborne — and see Osborne 1974); the Uto-Aztecian Tarahumara (Thord-Gray 1955); Algonquin (data from T. S. T. Henderson); Hua, a language spoken in the eastern highlands of New Guinea (data from John Haiman); and the Munda language Sora (data from Stanley Starosta).

1.2 Theoretical preliminaries

1.2.1 The priority of semantics

We work from the assumption that the syntactic properties of a lexical item can largely be predicted from its semantic description. Semantics is thus held to be prior to syntax. The ways in which syntactic properties can be predicted on the basis of semantic representations are complex, and are not yet fully understood; in the following subsections we provide informal exemplification of some of the known ways.

First, imagine a mature speaker learning a new word. Suppose that he initially acquires a fullish knowledge of its semantic possibilities, without encountering it used in very many complex constructions. On the basis of his semantic competence, and his understanding of the general connections between semantic types and syntactic properties in that language, he immediately knows how to use the word in a syntactically acceptable manner. That is, he is able to predict its syntactic properties on the basis of the semantic specification. All this is fully in accord with the ‘semantics prior’ position.

Now, let us consider the alternative ‘syntax prior’ position, which asserts that syntactic information is essentially independent of, and not inferrable from, semantic specifications. In terms of this position, the semantic information the speaker has acquired will be of little use to him in his syntactic sub-categorisation of the new word. Suppose that the item is a verb; then in order to work out which types of object noun phrase complements, say, it could occur with, the speaker would just have to keep his ears open. After a year or so he might subconsciously muse ‘I have heard the verb used with THAT complements but never with FOR-TO or with POSS-ING complements’ and would thus mark the item ‘+ THAT, - FOR-TO, - POSS-ING’ in his mental lexion. Only then would he be able to use the verb productively and correctly. Obviously, this bears little relation to what happens when a speaker learns a new word, demonstrating the untenability of the ‘syntax prior’ position.

There will of course be a few residual exceptions in syntax (items which have idiosyncratic properties, that have to be learnt point-by-point) just as there are often irregularities in morphology. But we maintain that the overwhelming majority of syntactic properties of lexical items are predictable from their semantic descriptions, once an adequate semantic theory is evolved and the general principles of semantic-syntactic correspondence for each particular language are worked out.⁶

1.2.2 Semantic types

I suggest that the lexical items of a language fall into a number of ‘semantic types’ (each item belonging to just one type). The division into types can be justified in terms of the syntactic/morphological properties of the members of each type; in addition, a non-disjunctive definition can be given for the overall semantic content of each type. These types are almost certainly linguistic universals. By this I mean that each language has the same array of types, with more-or-less the same overall semantic contents; however, the morphological/syntactic properties associated with particular types will vary from language to language, and must be learnt for each individual language. (My ‘semantic type’ is similar to Whorf’s notion of ‘cryptotype’ – for instance, Whorf 1956:70, 92-3).

Each semantic type has, in a particular language, certain ‘norm’ syntactic and morphological properties. *Each* member of the type exhibits the norm properties. In addition, there will be a number of ‘extensional’ properties, each applying only to *certain* members of the type. There are at least two kinds of factor determining whether a certain member of a type has a particular extensional property. First, just those members of the type that bear a certain semantic feature may have a certain extensional morphological or syntactic property; there is in this case a clear division between those members of the type that have the extensional property, and those that lack it. Second, just the most frequent – and usually semantically most general – members of the type may have a certain property; here there will be no clear cut-off point – some members of the type will quite clearly have the property, others will barely have it, and a final set will almost certainly lack it.

6. This is acknowledged to be a more-or-less heretical doctrine at the present time (when syntax is held to be the central area of linguistics, even by those scholars who pride themselves on being ‘semantically oriented’). The lack of syntactic-semantic congruence (when viewed from the syntactic end) is admitted by most modern workers to be an unfortunate but unavoidable fact of language, about which nothing can be done. There is perhaps an analogy to the state of comparative linguistics before the neo-Grammarians – linguists were not at all concerned at the plethora of exceptions; but once the neo-Grammarian doctrine was expounded, explanation was found for most (although by no means all) of these. Similarly, I believe that if semantic types are taken as prior, and their syntactic implications examined in detail, the number of words which have to be admitted to show ad hoc syntactic properties will be very greatly reduced.

1.2.3 Examples of syntactic properties

A particular property may be the norm pattern for a certain semantic type, an extensional property according to one criterion for a second type, and an extensional property according to some other criterion for a third type. Thus the class of all the words which have the syntactic property is semantically quite heterogeneous (and it is undoubtedly this sort of readily observable heterogeneity that has suggested to some linguists that syntax is largely independent of semantics).

For instance, the class of verbs that can take an object FOR-TO noun phrase complement (with optional extraposition) is, as listed by Rosenbaum (1967:121), extraordinarily heterogeneous. Occurrence in this construction appears to be an extensional property for several different semantic types. For instance, the LIKING type has the norm property 'taking POSS-ING complement'; all the members of this type – *like, hate, love, dislike, loathe*, and so on – take this complement. However, only certain of the most common members of the type can, extensionally, take FOR-TO complements – *like, hate, love* have the extension whereas *dislike* and *loathe* are lacking it. We can say *I like (John's) drinking beer, I dislike (John's) drinking beer, I like (John) to drink beer* but hardly **I dislike (John) to drink beer*.

In the case of a number of other types, only those members which have the additional semantic feature 'futurity (or something similar)' can take FOR-TO object NP complements. For instance, the norm construction for the SAYING type is with a THAT complement. But from this type *promise* – which has the feature 'futurity' – can, extensionally, take a FOR-TO complement as well. Other members of the type – *state, answer, assure, hint* and so on – lack this extensional property.

Thus the class of verbs that can take FOR-TO object NP complements includes odd items from a number of different types. The class itself has no semantic homogeneity; but the property of taking FOR-TO complements can be predicted on the basis of semantic type, and so on. Note that in the case of LIKING verbs there is no fixed cut-off point. Most speakers are unhappy with **I dislike (John) to drink beer* and even less happy with **I loathe (John) to drink beer*. But this is a matter of degree, and individual thresholds vary. For SAYING verbs the cut-off point is somewhat clearer – **I assured (John) to go* is quite unacceptable, for all speakers.

These examples are tentative, and the details might need revision after more detailed work on verb types and complement properties. But they

should serve to exemplify the theoretical point being made. More detailed examples are given in §1.3 'Adjective types in English'.

1.2.4 Part of speech membership

Many words in English (as in some other languages) belong to more than one part of speech: *laugh* is both a noun and an intransitive verb, as is *rain*; *march* is a noun, an intransitive verb, and a transitive verb; *narrow* is an adjective, an intransitive verb and a transitive verb; and so on. However, speakers have fairly strong intuitions that *laugh* and *march* are basically intransitive verbs, *rain* is basically a noun, *narrow* basically an adjective, and so on.

Decisions as to which of several part-of-speech memberships is 'basic' for a given word can also of course be made on analytic grounds. For instance, we can note that the adjective *wide* is the morphologically unmarked member of the pair *wide, widen*; there is here a derivational affix *-en* that derives verbs from adjective roots, giving *widen, deepen, shorten*, and so on. *Narrow* is plainly a member of this semantic type, leading us to set up the equivalence

verb *narrow*: adjective *narrow*
:: verb *widen*: adjective *wide*

Thus, taking *narrow* as basically an adjective leads to a maximally simple general statement of syntactic properties for the natural semantic class of 'dimension' words. In all cases I have investigated, intuitive judgements as to basic-part-of-speech membership coincide with analytic decisions.

I assume that each semantic type has basic or 'norm' connection with a single part of speech. Each member of that type belongs to that part of speech. In addition, some members of the type may, by extensional derivation, also be associated with other parts of speech. The terms 'deep' and 'surface' can conveniently be used to refer to norm, and norm-plus-extensional class memberships. Thus *laugh* is a deep verb; at the surface level it is both verb and noun; and so on.

Extensional derivations are in some cases morphologically marked – for instance, surface noun *decision* is derived from deep verb *decide* – at other times not. In some cases a particular derivation may be overtly marked for certain words but not for others; we have seen that *narrow* patterns like *wide*, but whereas the inchoative and causative forms of *wide* are *widen*, those of *narrow* have the same form as the adjective

(there are phonological/historical reasons for this, discussed in §1.3.4).

It should be noted that syntactic derivation has little effect on the semantic content of a word. *Decision* has almost exactly the same content as *decide*, this being a particular restriction from the overall content of a semantic type associated with the part of speech Verb. Similarly, the surface verb *rain* has the same semantic content as the noun *rain*, which belongs to the type WEATHER, along with *snow*, *hail*, *fog* and so on; note that the extensional property of verb derivation also applies to *snow* and *hail* but not to *fog* (on this see §4.2.2 below) while the extensional property of adjectival derivation through the suffix *-y* applies to *rain*, *snow* and *fog* but not to *hail*.

Just as we have homonyms – words with the same form but unrelated meaning – so there are some words that are related together in a regular morphological paradigm but have only a tenuous semantic connection (rather than the regular semantic connection normally associated with this morphological pattern). This is often the case with very common words, where historical shift has effected a degree of semantic separation between forms that were once related by a productive process – thus verb *do* and noun *deed*; verb *act* and noun *action*; adjective *pure* and adverb *purely*. All these must, within a description of present-day English, be considered distinct lexical items; there is of course some semantic similarity but it is not stateable in terms of a general derivational process.

1.2.5 Semantic types and parts of speech

We began by suggesting that semantic types were probably linguistic universals. In the last section it was asserted that each type has, in a particular language, ‘basic’ (or ‘deep’) association with a single part of speech. We also remarked that the major parts of speech vary from language to language – all languages appear to have Noun and Verb but some lack a major class Adjective. From this it is clear that some semantic types must be associated with different parts of speech in different languages.

The universal semantic types probably include MOTION (items like *go*), AFFECT (*hit*, *cut*), GIVING (*give*, *donate*, *lend*), CORPOREAL (*laugh*, *sneeze*), OBJECTS (*stone*, *tree*), KIN (*uncle*, *son*), DIMENSION (*large*, *deep*), COLOUR (*black*, *white*, *red*), VALUE (*good*, *bad*), and so on. Now each language arranges the types into a small number of groups – these groups are its major parts of speech. MOTION, AFFECT, GIV-

ING, CORPOREAL, and other types seem almost always to be classed together – this is the class that is in all languages called Verb. OBJECTS, KIN, and other types are almost always classed together – this is the class that is in all languages called Noun. There are some exceptions to this: for instance, KIN, is grouped with AFFECT and MOTION into the verb class for the Hokan language Yuma, so that the nominal ‘father’s father’ is derived from an underlying root *napaw* ‘to call someone father’s father’ (Halpern, 1942). However, the exceptions are fairly rare, and do not seem very extensive in the case of any single language. Whatever the extra types included in a particular grouping for a given language, ‘Noun’ is always used for that grouping which includes the criterial type OBJECTS, and ‘Verb’ for that grouping which includes the criterial types MOTION, AFFECT, GIVING and others.⁷

The greatest variation is found in the adjective class. Languages – like English and Dyirbal – that have an open class of adjectives include in this a constant array of types: DIMENSION, COLOUR, VALUE, and four or five others. Languages which have no adjective class, or only a small closed class, tend to distribute some of the normal adjective types amongst the other parts of speech. In this chapter I attempt to isolate those semantic types that are associated with the major class Adjective, for languages that have this class; and to make generalisations about their typical part-of-speech associations in languages lacking the major class.

1.2.6 Summary

I have thus distinguished three levels of description. They are:

(I) UNIVERSAL SEMANTIC LEVEL. A dictionary item in a certain language first of all belongs to a certain universal semantic type. For instance, English *black* belongs to the type COLOUR and *march* to the type MOTION.

(II) BASIC OR ‘DEEP’ LEVEL. The semantic type to which the item belongs will have norm association with a single part of speech in the language. In English, COLOUR is grouped with the major class Adjective, and MOTION with the class Verb. Thus *black* is a deep adjective and *march* a deep (intransitive) verb. These associations can be justified

7. Other, interlocking, criteria for universal ‘noun’ and ‘verb’ classes concern universal-syntactic functions, and so on; no attempt is made to discuss these here.

on internal grounds – they yield an optimally simple and revealing statement of semantico-syntactic correspondences for the language – and accord well with speakers' intuitions.

(III) SURFACE LEVEL. In addition to its norm syntactic and morphological properties – common to all members of its type – a word may have some extensional properties, including derivational membership of other parts of speech. These extensional properties can be predicted from the semantic representation of the item. *Black*, and some of the other colour terms in English, form inchoatives/causatives – *blacken* (for discussion see §1.3.4). A number of verbs of motion – including *march* – form nominals that have the same phonological shapes as the verbs. Thus we have, at the surface level, adjective *black* and verb *blacken*, verb *march* and noun *march*.

These examples may have implied that surface part-of-speech memberships in each case include the deep membership. This is in fact usually, but not always, so. For instance, the surface noun *opinion* is, like *decision*, related to the class Verb at the deep level; but whereas the verb *decide* is as common as noun *decision*, the semi-archaic verb *opine* occurs in probably a minority of present-day English dialects. As a member of the same semantic type, the surface noun *verdict* must also relate to a deep verb, and in this case there is not even an archaic verb to lend surface plausibility to the deep assignment. *Opinion* and *verdict* are said to be deep verbs on both intra- and inter-language criteria. Within a grammar of English, we can make the correct generalisations about their and other items' syntactic behaviour only in terms of such an assignment.⁸ Looking outside the language, the assignment is confirmed by recognition of certain universal semantic types, with certain typical semantic contents and part-of-speech associations.

1.2.7 Procedure to be followed

In the rest of this paper I attempt to discover the typical Adjective types,

8. For instance, HUMAN PROPENSITY adjectives (see §1.3) can qualify nouns referring to humans (and certain higher animals, etc) and also nominals derived from certain types of verbs – we have *clever man*, *clever decision*. If *opinion* and *verdict* were held to be deep nouns, rather than surface nominals derived from deep verbs, then we would have to set up a third class of items that can be qualified by human propensity adjectives, in order to account for *clever opinion* and *clever verdict* – thus weakening a generalisation.

and to investigate their word class affiliations in adjective-deficient languages. I have insisted that each semantic type has, in a particular language, its own particular norm and extensional grammatical properties. This implies that we *should* be able to delimit universal semantic types on the basis of an examination of syntactic and morphological properties in just one language. I attempt to do this in §1.3.⁹ Examining all those forms in English that appear to be *basic members* of the adjective class,¹⁰ I set up seven universal semantic types, on the basis of the semantic and grammatical properties of the forms. Then, in §1.4, I look at a sample of sixteen other languages – most of which have small, closed adjective classes – and examine the part-of-speech associations of the seven types in each language.

The discussion above of semantic types, parts of speech, and the rest, has been extremely general and in many respects oversimplified. I have outlined what seem to be the main, underlying patterns, but have not touched on likely complications and eccentricities. For instance, I have implied that all members of a semantic type always have norm association with the same part of speech in a particular language. This is so in most cases, but there are instances of a type being split between two parts of speech in certain very particular circumstances. Examples of this will be found in §1.4, when we discuss the special circumstances of a language having a very small adjective class.

1.3 Adjective types in English

Those monomorphemic English forms which have basic membership of the part of speech Adjective can be classified into seven types on seman-

9. This is not to imply that there was any procedure involved in the research reported here. In fact I was simultaneously investigating adjectives in English (§1.3) and in a large number of other languages (§1.4). I began with a number of hypotheses – based on my semantic intuitions and the languages I knew – and gradually revised these as the work progressed.

10. That is, I examine *loud* but not *noisy* (which is a deep noun), and *hot* but not *burning* (which is a deep verb).

tic, syntactic and morphological criteria.¹¹ The following subsections discuss some of the criteria, which are briefly summarised in Table 1. Note that in what follows (as for the examples in §1.2) all judgments of grammaticality are those of British English.

The seven semantic types which make up the word class Adjective are:

1. DIMENSION – *big, large, little, small; long, short; wide, narrow; thick, fat, thin*, and just a few more items.
2. PHYSICAL PROPERTY – *hard, soft; heavy, light; rough, smooth; hot, cold; sweet, sour* and many more items.
3. COLOUR – *black, white, red*, and so on.
4. HUMAN PROPENSITY¹² – *jealous, happy, kind, clever, generous, gay, cruel, rude, proud, wicked*, and very many more items.
5. AGE – *new, young, old*.
6. VALUE – *good, bad* and a few more items (including *proper, perfect* and perhaps *pure*, in addition to hyponyms of *good* and *bad* such as *excellent, fine, delicious, atrocious, poor*, etc.).
7. SPEED – *fast, quick, slow* and just a few more items.

1.3.1 Kind of semantic opposition involved

Three kinds of semantic opposition can be distinguished (Lyons, 1968:460-470) – antonymy, complementarity and converseness; adjectives show only the first two of these three kinds of opposition. In the case of complements the denial of one term implies the assertion of the other, and vice versa – for instance, *single* and *married*. Whereas complements provide absolute descriptions, antonym pairs – such as *large* and *small* – are always ‘relative’ to some implicit norm. One can quite felicitously say *The small elephant is large* – the animal is small with respect to the elephant norm but large with respect to some wider norm

11. I am omitting ‘position’ adjectives such as *high, low* (and *right, left, near, far* etc.); POSITION can be justified as a further semantic type associated with the class Adjective in English but is most frequently dealt with through Adverbs in other languages, even when they do have an open Adjective class. POSITION would thus not be a useful addition to our comparative survey in §1.4.

A few other adjectives which pose particular difficulties (and which I am still investigating) are also omitted from this discussion. They include *familiar, strange, curious, important, easy, difficult*.

12. Some of the HUMAN PROPENSITY adjectives can be applied to higher animals, particularly domestic pets, depending on the degree to which the speaker personifies any particular species. And in fact a number of terms which are used primarily to describe animal behaviour should perhaps be included under this type – thus *frisky* is normally used to describe a kitten or puppy, with the extension to humans being a metaphorical one.

Table 1: Summary of some of the semantic, syntactic and morphological properties of the semantic types in English

semantic type	§1.3.1			§1.3.2			§1.3.3			§1.3.4			§1.3.5			§1.3.6			§1.3.7		
	inchoatives/ causatives (allowing for phonological restriction)	within NP	place item	same meaning as Adj.	meta- phorical meaning	adverb function	manner verb adj.	sentence	topic-	manner verb adj.	topic-	manner verb adj.	topic-	manner verb adj.	topic-	manner verb adj.	topic-	manner verb adj.	topic-	manner verb adj.	topic-
DIMENSION	all antonym pairs (strong marking)	—	yes	most	2	Noun	(?)	some (varied possibilities)	—	yes	—	—	more + adverb	—	—	—	—	—	—	—	—
PHYSICAL PROPERTY	antonym pairs (weak marking) (some complement sets)	a few	yes	yes	3	Noun	few	most	—	yes	yes	—	more + adverb	—	—	—	—	—	—	—	—
COLOUR	complement set and hyponyms	—	yes (but not hyponyms)	only black, white, red and yellow	7	Noun	—	some	—	yes	—	—	more + adverb	—	—	—	—	—	—	—	—
AGE	antonym pairs	—	yes	one	6	Noun	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
VALUE	antonym pairs and hyponyms	some	yes (good, bad only)	only good and bad	1	*a non-value Adj.	yes	—	—	yes	*yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
SPEED	antonym pair	—	yes	yes	4	Noun	yes	—	? yes	yes	—	?	yes	—	yes	yes	yes	yes	yes	yes	yes
HUMAN PROPENSITY	single terms (with some characteristics of antonyms)	many	rare	very rare	5	Noun	yes	—	yes	yes	—	—	more + adverb	—	—	—	—	—	—	—	—

*The value adjectives *good* and *bad*, when qualifying a non-value adjective, assume adjectival and not adverbial form

(all animals? all moveable objects?). In fact, given any object one can describe it in terms of either pole of an antonymy, merely by placing it in the appropriate milieu. A wooden table, if placed in a collection of lead artifacts, would be called light; in a room of cardboard props it would be termed heavy. Antonyms typically occur in comparative constructions, and then establish a converse relation: if *A* is smaller than *B* then it follows that *B* is larger than *A*. True complements cannot occur in comparative constructions.

All DIMENSION, POSITION and most PHYSICAL PROPERTY adjectives occur in antonym pairs, with the positive member of each pair – *long, high, heavy*, etc. – the unmarked member. The unmarked term must be used in a neutral question (one without any particular presupposition). Thus *How long is the stick?* implies nothing about the stick's length, whereas *How short is the stick?* carries an expectation that it is fairly short. In addition, the nominalisation used to describe the parameter – say, in asking a neutral question – is derived from the unmarked member, at least for the DIMENSION type. Thus *length* can occur in the unmarked *What is the length of the rod?* as well as in the more specific *It won't fit in because of its (great) length*; in contrast, *shortness* can only be used to refer to a polar value – *In a memo, shortness is a virtue*.

Whereas each DIMENSION pair shows one clearly unmarked member, the degree of marking varies for PHYSICAL PROPERTY antonym pairs – from *hot* (plainly unmarked with respect to *cold*) to *rough* (arguably unmarked with respect to *smooth*). There is in some cases a suppletive noun naming the parameter – *weight* for *heavy/light*, *temperature* alternating with *heat* for *hot/cold* (cf *size* for *big/little*, and indeed as a general term covering any DIMENSION pair). But, as a rule, while nominalisations can be formed from both members of a PHYSICAL PROPERTY antonymy – *hardness* and *softness*, for instance – the form corresponding to the unmarked member is more usual and more often used.

With all DIMENSION pairs (except the semi-generic *big/little*) just the unmarked member can occur with a measure phrase – *Seven yards long/wide/deep* but not **Seven inches short/narrow/shallow*. PHYSICAL PROPERTY adjectives do not behave like this – we cannot say *It is 35 degrees hot* or *It is seven pounds heavy* – simply because they are each referring to a one-dimensional scale, whereas DIMENSION terms essentially specify one of the three possible spatial axes. (*Seven pounds (in) weight* or *A weight of seven pounds* are quite different, being

analogous to *A temperature of 35 degrees* or *A distance of seven yards*.)

Antonymy also underlies the AGE, SPEED and VALUE types. Marking is less clear than for the DIMENSION type but, on the grounds of presupposition, *fast*, *old* and *good* appear to be unmarked. The nominals describing these parameters are not derived from adjectives. We have used the nominals as general type names in the case of AGE and SPEED; there is no single nominal describing the syncategorematic *good/bad* dimension.

The basic COLOUR adjectives form a complement set; according to Berlin and Kay (1969) there are eleven basic colour terms and in addition various hyponyms. Comparative forms of colour terms carry quite different meanings from the comparative forms of other adjectives; they involve no converse relation and the term comparative, although morphologically apposite, is perhaps semantically inappropriate. *X is redder than Y* need not necessarily imply *Y is bluer/yellower/greener/etc. than X*; rather *X is redder than Y* is typically used in cases where X and Y are equally 'red', in terms of the crucial parameter of hue, but differ along the parameter of chroma or brightness.

Some items in the PHYSICAL PROPERTY type have some of the characteristics of complements: *sweet, sour, salty, bitter* (the dimension described by the noun *taste*); *solid, hollow*; and others. However, they also have some of the properties of antonyms – some speakers maintain that *X is sourer than Y* implies *Y is sweeter than X*. *Whole* has a range of participial complements – *broken, smashed, split, dissected*, and so on. *Raw* has the participial complement *cooked*. *Raw/cooked* show some antonym properties – of degree – that *whole-broken* lack, merely because *cook* is, unlike *break*, a durative verb.

HUMAN PROPENSITY adjectives – such as *jealous, loyal, merry* – do not appear to have clear (monomorphemic) complements or antonyms (the justification for this statement is given in the next subsection). Yet they behave somewhat like members of antonym pairs, depending on milieu – a certain person could be described as relatively loyal, or as rather lacking in loyalty, according to the company he is in – and forming semantically proper comparatives.¹³ It is as if these adjectives

13. Whether a particular adjective forms a comparative by suffix -er, or by modifier *more*, is well known to be a phonological matter (Jespersen 1965, MEG Vol VII Chap X). Most adjectives can form a comparative in only one way – *heavier* not **more heavy*, *longer* not **more long*, *more difficult* not **difficulter*. There are some adjectives which appear to be able, at least in certain idiolects, to form comparatives in either way: *crueller* or *more cruel*. It may be significant that most of these belong to the HUMAN PROPENSITY type.

specified an antonym dimension of which only one pole is named. A term like *jealous* describes certain human proclivities and is used relative to the human norm, the norm implying lack of the proclivities; it is not clear what the opposite of *jealous*, on the opposite side of the norm, could be.

1.3.2 Derivations with 'un-'

No members of the DIMENSION, COLOUR, AGE or SPEED types can take the derivational affix *un-*. However, many 'positive'¹⁴ HUMAN PROPENSITY adjectives do have *un-*-counterparts – *happy, kind, modest, sincere, honest*, and so on (we are roughly regarding *un-, in-, dis-* as allomorphic variants).

A number of HUMAN PROPENSITY adjectives appear to be in almost antonymous relation: *happy/sad, cruel/kind, clever/stupid, generous/mean, proud/humble, rude/polite* and a few more; however speakers agree far less when asked to give the opposite of one of these terms, than they do in the case of DIMENSION, SPEED and other terms. In fact each HUMAN PROPENSITY adjective is best considered as a singleton, individually specifying an antonym-like parameter. Some of the parameters – as in the pairs just mentioned – are *almost* opposites of each other. The lack of exact opposition is apparent from the triples *kind/unkind/cruel, polite/impolite/rude, happy/unhappy/sad*. *Unkind*, the antonym of *kind*, is not perfectly synonymous with *cruel* (and still less *unhappy* with *sad*) implying that *cruel* cannot be considered the antonym of *kind* (nor *sad* of *happy*, and so on).

Some members of the VALUE type form *un-*-derivatives – *improper, imperfect, impure*; and there are just a few *un-*-forms in the PHYSICAL PROPERTY type – *unclean, unripe*.¹⁵

1.3.3 Occurrence with '-ish'

Berlin and Kay mention that *-ish* can occur with the basic colour adjectives but scarcely with their hyponyms – *reddish* and *pinkish* are much

14. Cf. Zimmer 1964:15: 'negative affixes are *not* used with adjectival stems that have a "negative" value on evaluative scales such as "good-bad", "desirable-undesirable".'

15. Georgia Green has noted that there is a slang term *uncool* but it refers to a human propensity, not a physical property (that is, it corresponds only to the metaphorical extension of *cool*, not to its 'central meaning').

more acceptable than *scarletish*. Similarly, the affix can occur with *good* and *bad* but not with their hyponyms – **terriblish, *excellentish*. *-ish* can occur (especially in the more affected varieties of British English) freely with AGE, SPEED, DIMENSION and PHYSICAL PROPERTY items, but it can occur with few if any HUMAN PROPENSITY adjectives.¹⁶

Another adjective-forming suffix can only be added to COLOUR terms, out of the seven semantic types we are discussing; this is *-y*. Note that it can occur with any of the eleven colour terms except (nowadays) *black* and *white* – thus *greeny, pinky, yellowy* and so on. Like *-ish*, *-y* is less happy with hyponyms of the basic colour terms. (*-y* can of course occur with a fair number of nouns, including names of adjectival dimensions: thus *weighty, tasty* and even – with a de-adjectival nominal – *lengthy*).

1.3.4 Inchoative and causative derivatives

Certain adjectives form inchoative (intransitive) and causative (transitive) verbal forms – *deepen, roughen, darken*, and so on; others do not. Once again, this is a type-dependent property. Thus, almost all HUMAN PROPENSITY adjectives lack inchoative/causative derivatives, although they can occur in verbal constructions – *become rude, make rude* but not **ruden*.¹⁷

For the SPEED type there are inchoative/causative forms *to quicken* and *to slow*. The VALUE type has suppletive forms *to worsen* and *to improve*; *improve* appears to be the inchoative/causative correspondent of the adjective *good* – the form *improve* acquired its present meaning during the period in which the verb *to good* gradually dropped out of use (roughly, around the beginning of the seventeenth century).¹⁸

16. Or if it can, these are recent extensions of function, and vary considerably from dialect to dialect – cf Marchand 1969:306.

17. *Sadden* is the only convincing example of an inchoative/causative derived from a HUMAN PROPENSITY adjective (both *gladden* and *madden* can only be used transitively). Note that these adjectives do end in *-d*, one of the final segments that can accept *-en*. But many other HUMAN PROPENSITY adjectives satisfy the phonological condition on the use of *-en*, yet do not form *-en* derivatives e.g. *bold, proud, modest, kind, fierce, polite*, etc.

18. Anna Wierzbicka points out that two kinds of verbal derivative should be distinguished – 'make(/become) Adj' and 'make(/become) more-Adj'. Thus *widen* can mean 'make wide' or 'make wider'. *Improve* and *worsen* correspond only to the second sense, 'make better', 'make worse' (not 'make good' and 'make bad').

Many DIMENSION and PHYSICAL PROPERTY adjectives have verbal forms; the matter of which items from these types have these derivatives depends almost entirely on phonological constraints associated with the affix *-en*. It appears that *-en* can nowadays only be suffixed to stems ending in -p, -t, -k, -f, -s, -ʃ, θ or -d.¹⁹ All DIMENSION and PHYSICAL PROPERTY items ending in one of these consonants have *-en* derivatives (and see *quicken*, *worsen* given above). For some of the forms not ending in one of the eight consonants – *thin*, *narrow* and a few more – there is an inchoative/causative form that is identical with the adjective root (a retention from an earlier stage of the language). However, most DIMENSION and PHYSICAL PROPERTY adjectives that cannot take an *-en* affix simply do not have verbal derivatives – for instance, *shallow*, *bitter* (taste), and so on.²⁰

In many cases both members of an adjective pair have inchoative/causative forms; where only one member has verbal derivatives it is always the unmarked member – to *deepen* but not **to shallow*, and so on. There is an apparent exception to this – nowadays there is no verb *to heavy* although there is *to lighten*; a possible explanation is that *light* has verbal forms by virtue of the antonym pair *dark/light* (when an adjective enters into two distinct relations of antonymy, it frequently has the same morphological possibilities for each relation – compare *soft*, as antonym of *hard* and of *loud*).²¹

If the phonological form of the unmarked adjective is such that it cannot take *-en*, a verb may be formed from the nominalisation (if this satisfies the phonological condition) – thus *lengthen*, *strengthen*. In the case of the AGE type the nominal itself (without any suffix) is used as verb: *to age* (note that here the adjective, *old*, does satisfy the phonological condition). Neither *new* nor *young* ends in a segment that can take *-en* and, since the passing of time is inevitable and unchangeable, we would scarcely on semantic grounds expect a verb that was the opposite of *to age* (although there is, of course *rejuvenate*, with rather more specialised significance).

19. An account of *-en* is given by Jespersen (1939; 1965 – MEG Vol VI Chap XX) and Marchand (1969:271-3) who discuss some restrictions on final consonants that can take *-en*, although they do not reduce the number to eight, as here.
20. A few isolated adjectives do form verbs through other derivational suffixes – for example *tenderise*. (And note the archaic or semi-archaic *happify*, *uglify*, *prettify*.)
21. In the English of five hundred or more years ago, all or almost all adjective roots also functioned as inchoative and causative verbals; thus *to heavy* is attested until 1581 and *to shallow* until 1510 (NED). Jespersen (1939; MEG VI) gives a fullish account of the restrictions on verbal derivation that have been introduced in recent centuries.

None of *big*, *large*, *small*, *little* can, on phonological grounds, accept the affix *-en*. There is *enlarge*, a formation borrowed from French, but the other three adjectives do not form inchoatives/causatives, a fairly surprising fact since many dimensional terms, that can be considered hyponyms of generic *big* and *little*, do have verbal derivatives.²²

Berlin and Kay (1969) have suggested, from study of about a hundred languages, that there is a universal hierarchy of colour terms. In languages with just two colour terms these are *black* and *white*; if there is a third term it is *red*; the fourth and fifth will be *yellow* and *green* (in either order, depending upon the language); then *blue*; then *brown*; then (without ordering) *purple*, *pink*, *orange*, *grey*. They also found that the referential foci of these terms were constant between languages. Berlin and Kay's hierarchy applies not only on an inter-language basis, but also has relevance within a language, especially with respect to the gradual acquisition of colour terms.

Of the colour terms in English only four have inchoative/causative forms.²³ There are the regular *-en* derivatives *blacken*, *whiten* and *redden* (where the final segment is one of the set that takes *-en*); and in the case of *yellow* (which does not end in a member of this set) the adjective form simply functions as a verb. It is interesting to note that these are the first four terms in the Berlin and Kay hierarchy (this data suggesting that, in the case of English, *yellow* is ordered above *green* in the hierarchy). Of the other seven primary colour terms, only *pink* ends in a consonant that can accept the *-en* affix; but in fact there is no form *pinken*. This may be explained as follows: the colour term hierarchy is rather strict, and it is unlikely that a word low in the hierarchy would have morphological/syntactic possibilities that a higher word lacks; but the three terms

22. *Big* was introduced into Middle English from an unknown source, and thus has no morphological history going back to Old English times, like most adjectives; it has never acquired any verbal derivatives. *Small* was an unimportant item with restricted meaning 'slim' in Old English; as it has taken on a wider semantic role it has, surprisingly, failed to extend its range of morphological properties proportionately. *Little* originally had as its comparative *less*, but this has now shifted to a more general meaning, as has the inchoative/causative *lessen*.

Big and *little* are in some ways the superordinate members of the DIMENSION type – *big* can appropriately be substituted for many occurrences of *tall*, *fat*, *wide*, *long*, and so on (a *tall man* is a *big man*, for instance) in a way that *large* cannot be. Superordinate terms usually have all the grammatical properties of their hyponyms, hence our surprise at the absence of verbs based on *big* and *little*. (See Noriko McCawley, 1973, for another exception to this rule – based on the emotive overtones of *delicious* that are lacking for the superordinate term.)

23. The verb *to brown* has very limited use, apparently referring only to cooking.

ordered above *pink* cannot on phonological grounds have *-en* forms (and do not form a verb in some other way, like *yellow*): thus it is quite natural that there should be no inchoative/causative derivative of *pink*.²⁴

1.3.5 Order of adjectives in an NP

An NP can contain three kinds of pre-head elements. From left to right:

A. *pre-adjectival modifiers*: logical qualifiers (*all*, *some*, etc.), determiners (*the*, *this*), possessives (*my*, *John's*), superlatives (*best*, *cleverest*), ordinal numbers (*fourth*), cardinal numbers (*four*), and so on.

B. *adjectives*

1. Value
2. Dimension
3. Physical Property
4. Speed
5. Human Propensity
6. Age
7. Colour

C. *post-adjectival modifiers*: origin/composition – e.g. *oatmeal* in *oatmeal dog food*; purpose/beneficiary – *dog* in *oatmeal dog food*.

There are complexities not covered here, but the list gives a broad general picture of the main elements of an NP. Here we are only concerned with the items under B (those which can be preceded by *rather*, *very* or *quite*), which always follow items A and precede C. Two adjectives from B can occur in either order with marked stress pattern ('comma disjuncture') e.g. *new, white house* (versus *old, white house*) and *white, new house* (versus *réd, new house*). But with normal stress and intonation there appears to be a single preferred left-to-right ordering between adjectives from the different semantic types (cf Whorf 1956.93).²⁵ Speakers show a large measure of agreement on these orderings. Thus,

24. And note also that *scarlet*, a hyponym of *red*, does not have verbal derivatives although it ends in one of the eight consonants. This is one of several examples we have gathered of hyponyms lacking a number of the properties of their superordinates – see §1.3.3.

25. There are a number of 'exceptions' in the form of fixed idiomatic collocations – for instance *big bad wolf* (compare with *good little girl*).

students tested (in London in 1970) by means of a questionnaire²⁶ preferred *old white NOUN* to *white old NOUN*, and also chose *long heavy*, *good clever*, *slow wicked*, *quick clever*, *clever new*, and so on, in preference to the reverse orders. There is not, however, any evidence for a basic underlying order *within* a type – for instance, no consistent picture emerged from the questionnaire responses concerning the relative ordering of *gay*, *proud*, *clever*, *brave* in the HUMAN PROPENSITY type. The fact that there appears to be an underlying order between types but not within types provides further justification for the recognition of these seven semantic types within the part of speech Adjective in English.

The ordering given is that which prevails in semantically unmarked circumstances; it can be deviated from in 'marked' cases. Most students completing the questionnaire preferred *slow old* and *quick new*, but they were equally divided between *slow new* and *new slow*. There seems to be an implicit cultural-semantic connection between *new* and *quick* and between *slow* and *old*; *slow* and *new* is an unusual combination of attributes and it was probably because of this that half the students preferred the marked ordering *new slow* (*new but slow* would be an appropriate way of putting it, with *but* indicating the implicit contrast between the two adjectives).

Items A qualify everything that follows in the NP. Thus *the cleverest two men* is not synonymous with *the two cleverest men*. The first phrase presupposes that the men are grouped into pairs, and indicates the cleverest pair; the second phrase refers to the two cleverest individuals. However, items B – with the exception of the VALUE adjectives – each directly qualify the head noun. Thus *a clever brave man* has similar cognitive meaning to *a brave clever man*, the differences being largely stylistic.

A VALUE adjective qualifies not the head noun, but some other adjective, which is taken out of its normal place in the ordering and placed immediately after the VALUE adjective. Thus *a good new fast car* is a fast car which is new and therefore good; *a good fast new car* is a new car which is fast and in virtue of this good; similarly in the case of *a good hard wide road* and *a good wide hard road*.

Any adjective that can – with extralinguistic appropriacy – describe

26. Each line of the questionnaire involved one pair of adjectives. They were given in one order on the left, and in reverse order on the right – in each case a blank was left for the head noun. Students were asked to choose the best order by filling in a suitable head noun in the appropriate blank; there was no correlation between different choices of head noun and different choices of adjective ordering.

a given noun can be qualified by a syncategorematic term such as *good* in that context. Thus *a good strong box* – a box which is good because it is strong – *a good long box*, *a good deep box*, *a good shiny box*. We can also have *good* describing *box* without the inclusion of any other adjective. But *a good box* is not an object which is good because it is a box (or because it has *all possible* properties that could ever be expected of a box). Rather, the phrase *a good box* is ‘vague’, being essentially an elliptical version of ‘good for X’ where X ranges over all those properties for which it could be considered good by speaker and hearer (‘good because it is strong’, ‘good because it is long’, and so on). It is as if, in *a good box*, *good* effectively qualifies some implicit non-value adjective, which itself qualifies *box*, rather than *good* directly qualifying *box*. Of course in normal usage the vagueness is likely to be resolved by context (and note the particular institutionalised senses of *good* when used with certain nouns – for instance, *a good girl*, with its implications of moral goodness).²⁷

1.3.6 Derived adverbs

Adjectives differ as to whether or not they form adverbs; and whether the adverb carries the full range of meaning associated with the adjective.

27. It would be fascinating to study the order of adjective types in the NPs of a variety of languages. Little data on this topic is currently available but what there is suggests something in the nature of universal principles.

For instance, John Haiman reports that the ordering of adjective types in Hungarian is quite similar to that in English. In Hungarian VALUE precedes DIMENSION and AGE; DIMENSION usually precedes PHYSICAL PROPERTY; DIMENSION and PHYSICAL PROPERTY precede COLOUR; and so on.

Bh. Krishnamurti reports that in Telugu VALUE comes first, followed by AGE (the main difference from English ordering), then DIMENSION, then PHYSICAL PROPERTY and COLOUR. Ordering between the latter two types depends partly on morphological structure – a derived adjective will normally precede an ‘Aⁿi’ form, for instance. Thus, in ‘heavy red book’, *baruw-ayna* ‘heavy’ (literally ‘heaviness-with’) must precede *erra(ti)* ‘red’; but where both adjectives belong to the ‘Aⁿi’ class (e.g. *sanna(ti)* ‘fine’ and *erra(ti)* ‘red’) either order is possible, it being a little more common to have the physical property term first. (SPEED is normally shown in Telugu by a post-nominal clause, and HUMAN PROPENSITY is dealt with exclusively by nouns.)

K. A. McElhanon (1972:14,81 and p.c.) gives the order in which adjectives follow the head noun in Selepét, from the Morobe district of New Guinea as: Sex, COLOUR, AGE, HUMAN PROPENSITY/VALUE, PHYSICAL PROPERTY, DIMENSION and Number. This is almost exactly the mirror image of the pre-head adjective order in English and other languages, the only important difference being the placement of VALUE.

Hetzron (1978) is a general discussion of the relative order of adjectives in a variety of languages, that supports my conclusions here.

Thus there are no adverbs associated with *old* or *big*. Most occurrences of *warmly* correspond to the metaphorical sense of *warm* – we have *a warm recommendation* and *warmly recommend* but seldom a sense of *warmly* corresponding to *a warm fire* or *a warm day*. We shall show that properties of adverbial derivation can largely be predicted on the basis of the semantic type an adjective belongs to.

All HUMAN PROPENSITY adjectives form adverbs, that cover the same semantic range as the parent adjective. There are usually three functional possibilities, two of which are exemplified in:

- (1) The man laughed generously
- (2) The man generously laughed

In (1) *generously* is a manner adverb, implying ‘a generous laugh’ (longer or louder than strictly necessary); in (2) *generously* is a sentence adverb, implying ‘a generous man’ (generous in that he laughs at all).

The positional possibilities associated with the two functions are as follows:

A SENTENCE ADVERB normally follows the first word of the auxiliary, or if the auxiliary consists only of tense the adverb immediately precedes the verb. Less preferred positions are as first or final element in the sentence, set off by appositional intonation.

A MANNER ADVERB normally comes at the end of the VP.

Thus (3), (4) and (5) involve a sentence adverb, and have pretty much the same cognitive meaning, quite different from the manner adverb sentence, (6). (5) and (6) demand different intonation patterns.²⁸

- (3) The soldier must stupidly have answered the officer’s question.
- (4) Stupidly, the soldier must have answered the officer’s question.
- (5) The soldier must have answered the officer’s question, stupidly.
- (6) The soldier must have answered the officer’s question stupidly.

A HUMAN PROPENSITY adverb, when used in sentence function, involves the same semantic relations as when the corresponding adjective is predicated of the subject of the adverb-sentence; when used in manner function it corresponds to the adjective predicated of a nominal derived

28. A less preferred position for a manner adverb is immediately before the verb. It seems that a sentence adverb can also occur in this position, so that:

(7) The soldier must have stupidly answered the officer’s question
is ambiguous between senses (3-5) and (6). (2) is ambiguous for the same reasons.

from the verb of the adverb sentence. Thus (8) has the same cognitive meaning as (2), and (9) the same as (1):

- (8) The man was generous in that he laughed.
 (9) The man gave a laugh that was generous.

HUMAN PROPENSITY adverbs can also qualify adjectives. In *stupid jealous man* both adjectives qualify *man*, whereas in *stupidly jealous man*, *stupid* qualifies *jealous* which in turn qualifies *man*; similarly for *bravely loyal*, *jealously loyal*, *stupidly thin*, *stupidly slow*, and so on.

The functional possibilities of human propensity items can be summarised:

I. adverbs in sentence function, e.g. (2), (3); correspondingly, adjectives qualifying nouns referring to human beings (with extensions to higher animals and personified artefacts in some circumstances), e.g. *generous man*, *stupid soldier*.

II. adverbs in manner function to verbs, e.g. (1), (6) and *decide cleverly*, *manage astutely*; correspondingly, adjectives qualifying nominals derived from the verbs, either 'process nominals' – *generous laugh*, *stupid answer*, *clever decision*, *astute management* – or 'agent nominals' – *astute manager*.

III. adverbs in manner function to adjectives, e.g. *stupidly jealous*, *stupidly slow*; correspondingly, adjectives qualifying nominals related to adjectives, e.g. *stupid jealousy*, *stupid speed*.

It will be seen that the different functions of HUMAN PROPENSITY adjectives can only properly be described in terms of deep part-of-speech membership. Thus *a clever man* involves Function I, *man* being both a surface and a deep noun. *A clever administrator* involves Function II, *administrator* being related to the class verb at the deep level. The difference is apparent from the fact that a certain person can accurately be described as *a clever man but a stupid administrator*.²⁹

29. Certain nouns are regarded as derived from deep verbs even though there is no corresponding surface verb – thus *a clever carpenter* is someone who 'works in wood' (*carpents) cleverly. As Dwight Bolinger has pointed out, this would lead to extremes such as regarding *husband* as a deep verb (in order to explain *dependable husband*) and so on.

VALUE adverbs – *well* and *badly* – only occur with a manner function. Thus, corresponding to II above for the HUMAN PROPENSITY type, we have the value adverb in *He answered badly*, *He organises well*, and the appropriate adjective qualifying the deverbal noun, as in *a bad answer*, *good organisation*, *good organiser*.³⁰ Value adverbs have no function corresponding to I. Value adjectives can qualify deadjectival nominals – *good speed*, *good depth* – corresponding to the HUMAN PROPENSITY function III; with the corresponding adjective the adjectival form of the value item is still appropriate – *good slow car*, *good deep box* (and not, by analogy with III above, **well slow car*, **well deep box*).

The correspondence between HUMAN PROPENSITY and VALUE functions can be tabulated:

	HUMAN PROPENSITY	VALUE
I	with noun	<i>generous man</i> _____
	as sentence adverb	<i>generously laugh</i> _____
II	with deverbal noun	<i>generous laugh</i> good organisation
	with verb	<i>laugh generously</i> organise well
III	with deadjectival noun	<i>generous loyalty</i> good depth
	with adjective	<i>generously loyal [friend]</i> good deep [box] good [box]

We are suggesting that human propensity adjectives directly qualify nouns, and corresponding to this is the use of the derived adverbs with sentence modifying function. The adverbs can also modify verbs and adjectives, corresponding to the adjectives modifying deverbal and de-

30. Although we can usually infer adjective,-plus nominal₂ from verb,-plus-adverb₁ in the case of value terms, the reverse order of derivation does not always hold. Dwight Bolinger has pointed out that *We had a good laugh at him* does not relate to **We laughed well at him* but to *We had a pleasant (or satisfying) laugh*. This can be dealt with in terms of the suggestion at the end of §1.3.5 – a *good laugh* is elliptical for something like *a good satisfying laugh* (i.e. a laugh that is good because it is satisfying) which in turn relates to *laugh satisfyingly*. (Note that although *good* can modify an adjective, *well* can not modify another adverb.)

adjectival nominals. In contrast, value adjectives directly qualify adjectives, value adverbs directly qualify verbs; corresponding to these two functions value adjectives can modify deadjectival and deverbal nominals. Value adjectives do not directly qualify nouns, and value adverbs cannot function as sentence qualifiers. The crucial part of the table is the correspondence between *generously loyal* – non-value adverb plus non-value adjective – and *good deep* (or *good loyal*) – value adjective plus non-value adjective. A value adjective cannot (I) directly qualify a noun; if it appears in an NP with a noun and no other adjective, then it has manner Function (III) with respect to an implicit non-value adjective.

The discussion of adverb possibilities for the type VALUE, in the last few paragraphs, applies only to the main members of this type – *good* and *bad*. Other VALUE items – *proper*, *pure*, *atrocious* – have the same basic functions, but these are realised in a slightly different way. The derived adverbs Function (II) as manner modifiers to verbs just as do *good* and *bad*, and the adjectives modify the deverbal nominals – *atrociously drawn*, *atrocious drawing*. In Function III the adverbs modify adjectives – like HUMAN PROPENSITY adverbs and unlike *good* and *bad* – and the adjectives modify the deadjectival nominals: *perfectly loyal*, *atrociously rude*, *perfect loyalty*, *atrocious rudeness*. Like *good* and *bad* they lack Function I – the adjectives cannot directly qualify nouns, and the adverbs cannot function as sentence qualifiers. *Perfect*, *pure* and *atrocious*, when used with a true noun, are essentially elliptical, as are *good* and *bad* when used alone with a true noun. Thus *a perfect ball* could imply *a perfectly round ball*, or *a perfectly elastic ball*, and so on (note that the adverb form is used when another adjective is present; when the non-value adjective is omitted then *perfect* takes adjectival form – this is probably due to a surface constraint that adverbs cannot occur with nouns in English).

When a HUMAN PROPENSITY adjective is used with an agentive deverbal noun, it can be taken as being in either Function I or II. Thus *a clever builder* can be either (II) a man who builds cleverly, or (I) a clever man who builds (this could describe a builder who in the evenings is studying for his BA in classics; there is no implication that his actual building work is particularly distinguished). However, when a VALUE adjective is used with an agentive deverbal noun, it must be taken to be in Function II – *a good builder* must be someone who builds well. In order to specify that a particular builder is good in some non-vocational sense – say, a considerate husband – we could only say something like *The*

builder is a good man. A HUMAN PROPENSITY adjective with a true noun (something that is also a noun at the deep level) must be in Function I. A VALUE adjective with a true noun is essentially elliptical, and the underlying construction can be either of Type II or Type III. Thus *a good man* can imply (III) *a good loyal man*, or *a good honest man*, or (II) *a man who works well* (said by an employer) or *a man who can pick locks well* (said by the leader of a gang of safe-breakers), according to the context.

The adverbial possibilities for the other semantic types can be dealt with quite shortly. SPEED adverbs can occur initially, medially or finally in sentences with what appears to be manner function – the *man ran quickly* implies *a quick run*. (It is difficult semantically to distinguish a ‘sentence function’ here – *a quick man* would be a man who moves quickly in this instance, i.e. a man who has ‘a quick run’.)

There are not adverb derivatives of the main AGE adjectives. *Newly* is a time adverb, with closer semantic correspondence to *recent* than to the AGE adjective *new*.

Almost all members of the PHYSICAL PROPERTY type, and some from the COLOUR type, have derived adverbs, but here the adverb most often corresponds to the metaphorical sense of the adjective. Many of these adverbs are mainly used with locutory or cognitive verbs – *drily remark*, *hotly deny*, *coldly assert*, *warmly recommend*, *cooly consider*, *sweetly request*, *sourly reject*, *bitterly protest*, *darkly frown*. Others – such as *roughly*, *heavily* – have wider selectional possibilities, but are still semantically much more restricted than the corresponding adjectives. There is a case for saying that there are two different types of item here. First, physical property adjectives which can qualify concrete nouns, and have no adverbial derivatives. Second, there are the adverbial forms which behave exactly like HUMAN PROPENSITY adverbs; they can provide manner modification of verbs – *warmly recommend* – and the corresponding adjective can qualify the deverbal nominal – *warm recommendation*. An argument in favour of this treatment is that some of these adverbs can – like HUMAN PROPENSITY adverbs – also qualify adjectives, and the corresponding adjective can qualify the de-adjectival nominal; thus we have *bitterly jealous*, *cooly efficient*, and *bitter jealousy*, *cool efficiency*.³¹

31. In this case there should be differences in place in NP order – *bitter* corresponding to *bitterly* should go in the HUMAN PROPENSITY slot, whereas *bitter* referring to taste should go in the PHYSICAL PROPERTY slot. I have been unable to construct crucial examples that are semantically plausible, which would support or refute the suggestion.

Some DIMENSION adjectives have no corresponding adverbs – *big*, *small*, and so on. Others have adverbs which relate to the adjectives in semantically diverse ways. *Thickly* and *thinly* refer to the result of an action – *he sliced the bread thinly* implies the production of *thin slices*. *Narrowly* and *broadly* behave like HUMAN PROPENSITY manner adverbs – *narrowly conceived* and *narrow conception*, *broadly based* and *broad basis*. *Deeply* has both a concrete and a metaphoric sense – *he dived deeply* implying *a deep dive*, and *to think deeply* implying *deep thought*. Both *short* and *long* have extensional meanings referring to time, and there are the time adverbs *shortly* and *lengthily* (the latter being derived from the -y adjective that is formed from the nominalisation of *long* – see §1.3.3).

1.3.7 Topic-manner constructions

When a value adverb modifies a verb it indicates that a certain event is either satisfactory or unsatisfactory. If this success is a function of the subject of the sentence, then the adverb comes at the end of the VP, in the normal way:

- (10) Mary whipped the cream well
- (11) Jenkins translates Shakespeare into Greek well

However, the success can be a function of some other NP in the sentence. In this case the relevant NP is brought to the front of the sentence, and the subject deleted:

- (12) The cream whipped well
- (13) Shakespeare translates into Greek well

The cream in (12) and *Shakespeare* in (13) have few of the characteristics of grammatical subjects, and are better referred to as ‘topics’. Note that the object can only be fronted in these sentences under certain conditions: ideally, in the presence of a manner adverb, but fronting may also be possible if the sentence contains a modal, or a negative.³² We can get:

32. Fronting may also be possible under marked syntactic conditions e.g. *Shakespeare translates into Greek but not into Chinese* or *The reason I prefer heavy cream is that it whips; the lighter stuff has to be doctored up with emulsifiers* (these examples are from Michael Silverstein and Dwight Bolinger, respectively). Our point is that there must be some special semantic marking to enable an object to be fronted, and this is most often effected by the inclusion of a manner adverb (which is what concerns our discussion here).

- (14) This cream wouldn't whip

but scarcely, when none of these elements is included:

- (15) The cream whipped
- (16) Shakespeare translates into Greek

(12-14) can be referred to as ‘topic-manner’ constructions (and instrumental or locational NPs can be fronted, in addition to objects – a full discussion is in §4.3 below).

All adverbs derived from VALUE adjectives figure in topic-manner constructions (*the piano plays atrociously*, *this lawn won't cut properly*). Adverbs derived from HUMAN PROPENSITY, PHYSICAL PROPERTY, COLOUR and DIMENSION items cannot occur in topic-manner constructions. SPEED adverbs, however, can trigger the topicalising of a non-subject NP, at least in certain circumstances:

- (17) These chocolate mice are selling fast
- (18) This car drives slowly

1.3.8 Comparison of derived adverbs

English has no morphological means for forming comparatives of adverbs – we cannot say **cleverlier*, **slowlier*. Comparison of adverbs is shown in two ways: using *more* plus the adverb, or just using the comparative form of the adjective.

The construction *more-plus-adverb* is used in the case of all items from the types DIMENSION (*miss more narrowly than*, *distributed more thickly than*),³³ PHYSICAL PROPERTY (*recommend more warmly than*), COLOUR (if the metaphorical extension can be taken that far), and HUMAN PROPENSITY (*solve more cleverly than*, *give more generously than*). However, the main VALUE adverbs can not occur with *more*; instead they use the comparative adjective as a comparative

33. *Deep* appears to be an exception in that we can apparently use the comparative adjective as a comparative adverb – for instance *dig deeper* (in addition to *dig more deeply*); other dimension adverbs lack this property – *smaller*, *narrower* cannot qualify a verb. The anomaly is, however, probably only superficial – *deeper* is best accounted for as belonging to the (wholly or partially deletable) object NP of the basically transitive verb *dig* – the underlying structure of *He dug deeper than I did* is thus something like *He dug [a] deeper [hole] than I did*. (Note that we also have alternatives *He dug deeply* – the adverb being added after object deletion – and *He dug deep* – the adjective being a residue from the object NP.)

adverb. Thus we have *John did it cleverly*, *John did it well*, *John did it more cleverly than I did* but *John did it better than I did* (not **John did it more well than I did*).³⁴

The SPEED type is alone in allowing both types of comparative adverb constructions. Thus both *Tom ran quicker than John* and *Tom ran more quickly than John* are acceptable, and seem to have exactly the same meaning. (Note that if *fast* is substituted for *quick* the correspondent of both sentences is *Tom ran faster than John*. *Fast* can take comparative -er whether functioning as an adjective or as an adverb; it is probably the sole exception to the claim in the first sentence of this section.)

1.3.9 Summary

The difference in properties between the seven Adjective types in English is summarised in Table 1. DIMENSION and PHYSICAL PROPERTY have rather similar possibilities; these are perhaps barely sufficient to justify distinguishing them as separate types in English. (Data from other languages confirms them as distinct universal types.) PHYSICAL PROPERTY and COLOUR share some properties but show differences – for instance, their widely separated places in NP order. SPEED has some rather remarkable similarities with VALUE, notably concerning topic-manner constructions (§1.3.7) and adverb comparison (§1.3.8). *Good* and *bad* are quite sharply set off from the other members of the VALUE type – only *good* and *bad* occur with -ish, have inchoatives/causatives, take adjectival form when modifying another adjective, and use the comparative adjective as a comparative adverb. There are, however, certain important properties common to all VALUE items – topic-manner function, qualification of another adjective rather than of the head noun in an NP, and so on; these, and the semantic unity of the type, serve to establish the items as all belonging to a single VALUE type.

1.4 Adjective types in other languages

Having given some justification for the seven universal semantic types in terms of their semantic, syntactic and morphological properties in

34. Note that the comparatives (and superlatives) *better*, *worse*, etc could just as well be called comparative adverbs, also functioning as comparative adjectives, than comparative adjectives also functioning as comparative adverbs; in fact the former treatment would fit better with the properties we have been describing. There are no morphological grounds for relating *better* to *good* rather than to *well*, or *worse* to *bad* rather than to *badly*.

Table 2: Part-of-Speech Membership of the Seven Types in a Sample of Seventeen Languages

Type	Swahili	Luganda	Bemba	Japanese	Sango	Hausa
SPEED	pA	A/ADVERB	ADVERB	A	Ad [+ V]	N/ADVERB
DIMENSION	pA	A	A	A	Ad [+ N, + V,S], V	A, N/V
PHYSICAL	p & npA	A, some N,V	V, two A	A,	V, some N	V, N, N/V, one A
PROPERTY				some V,N		
COLOUR	pA	A	V	A	Ad [+ N]	A
HUMAN	N, some A	N, some A	N, one A	N, some A	N, one Ad [+ N,S]	N
PROPENSITY						
VALUE	pA	A	A	A	Ad [+ N, + V,S]	N, A
AGE	pA	A	A	A	Ad [+ N]	A

Type	Acooli	Hua	Alamblak	Telugu	Kiriwinian	Tzotzil
SPEED	ADVERB	N ^v	ADVERBS	N-A	ADVERBS	A
DIMENSION	A(some + nu)	N ^v , two A	A	A(-N), N-A, one A ⁿⁱ	A [+ cl], [± cl], V	A, some V
PHYSICAL	A, V	N ^v , one A,	A,V,A/V few V	A ⁿⁱ ,A(-N),N-A	A [± cl],[- cl]A, some V	
PROPERTY						
COLOUR	A	A	A	A ⁿⁱ	N	A
HUMAN	N, some A	N ^v , one A,	V, two A	N	V, few N, one A [± cl]	N, some A,V
PROPENSITY						
VALUE	A [+ nu]	N ^v	A	A(-N)	A [- cl]	A
AGE	A	A	A	A(-N)	A [+ cl]	A

Type	Chinook	Yurok	Samoan	English	Dyirbal
SPEED	PART	V	V	A	A
DIMENSION	N ma	V[cl]	V	A	A
PHYSICAL	PART,	V	V	A, some V	A
PROPERTY	some N ma, V				
COLOUR	PART	V[cl]	V	A	A
HUMAN	N, some V,	V	V, some N	A, some N	A
PROPENSITY	PART				
VALUE	N ma	V	V	A	A
AGE	V	V	V	A	A

Abbreviations (see commentary in §1.4.2; 'N/V' and 'A/V' are explained in §1.4.4):

N noun	Ad adjunctive	PART particle	p prefixing
V verb	S substantive	ma masculine	np non-prefixing
A adjective	N ^v verbalised noun	nu number	cl classifier

English, we can now examine their part-of-speech associations in other languages. Basic data for seventeen language is first given. Most of these have a smallish, closed adjective class – they are thus crucial languages for the purpose of our investigation. I have also included two languages (Yurok and Samoan) in which the adjective types all basically fall into the verb class, and two languages (English and Dyirbal) with open adjective classes. A commentary briefly indicates grammatical criteria for recognising the major parts of speech in each language, and then comments on the data summarised in Table 2. The various kinds of correlation that the types have with parts of speech are discussed in §§1.4.3, 1.4.4, and the main conclusions are summarized in §1.4.5

1.4.1 Data

The strategy has been to discover how three dozen concepts³⁵ – representative of the seven types – are expressed in the seventeen languages, and then to discover the basic part of speech membership of the root in each case. Thus if I find that ‘wet’ is expressed in some language only by the past participle of the verb ‘to wet’, then this concept is entered as ‘verb’. In almost every case clear morphological and/or syntactic criteria are available for deciding on the basic part-of-speech memberships. But where it is clear that a root could be related to either of two word classes this has been noted (as in the case of Telugu).

The results are summarised in Table 2. In all cases the generalisations indicated in the table were verified by checking further concepts (beyond the sample three dozen); for almost every language the generalisations have been checked with linguists who have done substantial work on the language.

For each language ‘Noun’ indicates a grammatical class including the semantic type OBJECTS and ‘Verb’ a class whose types include MOTION and AFFECT (see §1.2.5).

1.4.2 Commentary

Swahili has a fairly complex agglutinative morphology so that it is easy to give criteria distinguishing the parts of speech. Each noun bears a con-

35. The list of concepts was: quick, slow; big, small, long, short, wide, narrow, deep, shallow; sharp, blunt, hot, cold, wet, dry, open, raw, whole, heavy, light; black, white, red; fierce, cruel, kind, generous, jealous, proud, happy, clever; good, bad; new, old. In addition, a longer list of about 150 adjectival concepts was gone through for most of these languages (and a good many others, not listed here).

stant prefix showing its noun class (‘gender’) and number. Verbs take affixes indicating tense, mood, aspect, voice, negation, etc., and also feature concordial prefixes indicating the noun class/number of subject, object and other NPs.

There is a class of about fifty adjectives, that take the concordial prefix of the noun they modify. An adjective can take *any* of the fourteen or so noun class/number prefixes whereas each noun has a constant prefix; verbs differ from adjectives in that they may take several concordial prefixes (cross-referencing several NPs in the sentence) and also take tense and other inflections. Similar criteria apply in the related Bantu languages Luganda and Bemba.

Swahili has in addition a set of a score or so ‘borrowed adjectives’ (mostly from Arabic) that do not take the prefixes. It will be seen from Table 2 that prefixed adjectives cover the SPEED, DIMENSION, VALUE and AGE types as well as the three basic colour terms, *black*, *white* and *red*; PHYSICAL PROPERTY terms include both prefixed and non-prefixed adjectives. The HUMAN PROPENSITY type includes a few prefixed adjectives such as *-erevu* ‘cunning’, *-wivu* ‘jealous’ and also nouns such as *furaha* ‘joy, happiness’, *kiburi* ‘pride, conceit’ (these are used attributively with the ‘possessive particle’: *a furaha, a kiburi*).³⁶

Luganda has about three dozen adjectives. Most HUMAN PROPENSITY concepts are rendered by abstract nouns – *kisa* ‘generosity, kindness’, *ssanyu* ‘joy, gladness, pleasure’ – but there are just three or four human propensity adjectives – *-zira* ‘brave’, *-gezi* ‘clever, learned’, *-kambwe* ‘fierce, cruel’. Most of the main PHYSICAL PROPERTY concepts are expressed through adjectives (‘heavy’, ‘hard’, ‘cold’, etc.); however, some are realised as nouns (*bwogì* ‘sharpness’) and some as verbs (‘hot’, for instance). For the SPEED type there is an adverb ‘slowly’ and the physical property adjective *-angu* ‘light (not heavy)’ also has the senses ‘quick’ and ‘easy’.³⁷

Bemba has less than twenty adjectives. For the PHYSICAL PROPERTY type there are adjectives *-bishi* ‘raw’ and *-tuntulu* ‘whole, in good health’; all other physical property items appear to be verbs. There is one HUMAN PROPENSITY adjective *-kali* ‘wild, fierce, angry’; all other human propensity concepts appear to be expressed through abstract

36. The Swahili data was gathered mainly from Ashton’s (1947) grammar and the dictionaries of Johnson (1939), Madan (1902) and Snoxall (1958).

37. The Luganda material is based on grammars by Crabtree (1921) and Ashton, Mulira, Ndawula and Tucker (1954) and the dictionary by Mulira, Ndawula, Kitching and Blackledge (1952).

nouns. Note that in Bemba the COLOUR type falls within the verb class.³⁸

In Japanese, verbs are morphologically distinguishable from nouns by virtue of their obligatory inflection. There is a subclass of verbs, with slightly different inflectional possibilities, that corresponds in semantic content to the Adjective class in other languages. The main differences between the conjugation of the 'adjective' subclass and that of regular verbs is (i) the present tense ending is *-i* on adjectives but *-ru* on verbs in the narrow sense; (ii) adjectives demand the insertion of *kar* or *ker* (a relic of an auxiliary verb, preceded by the adverbial ending *ku*) between the verb and an ending beginning with a consonant; and (iii) adjectives have no formal-polite conjugation – instead, the formal-polite present copula is put after the appropriate inflected form of the adjective.

There are several hundred members in the adjective subclass but it is closed – no new items are added to it. There are a few HUMAN PROPENSITY adjectives – for instance *sugo-* 'cruel' – but most human propensity items are basically nouns. Thus there is *shinsetū* 'kindness', *shiawase* 'happiness', *jiman* 'pride'; attribution is effected either by means of the copula particle *na* or through the possessive particle *no* – *shinsetū na* 'kind', *shiawase na* 'happy' *jiman no* 'proud'. There are many PHYSICAL PROPERTY adjectives; however, some physical property concepts are expressed through verbs – *shimetta* 'wet', the perfective of *shimeru* 'get wet' – and some through nouns – *zentai* 'whole', attributive form *zentai no*.³⁹

Sango, a creole (based on a Niger-Congo language) is the lingua franca of the Central African Republic. Since there is only rudimentary affixation, word classes are mainly distinguishable on syntactic criteria. In his grammar, Samarin (1967) refers to a class of about sixty adjunctives

38. For Bemba the grammars by van Sambeek (1955), Sims (1959) and Robertson (1904) and the dictionaries by The White Fathers (1954) and Hoch (1960) were used.

39. James McCawley notes that words which take the copula *na* when modifying a noun are all translatable into English as adjectives. We could thus recognise a subclass (of nouns) 'uninflected adjective' in addition to the verb subclass 'inflected adjective' (these items inflect like verbs since they have developed historically from adjective-plus-copula combinations). The subclass of uninflected adjectives is – unlike the inflected adjective class – open, and includes many recent loans such as *naibu* 'naive', which take *na* in attributive function.

The data on Japanese was supplied largely by Linda Hansen, and checked and extended by James McCawley; see also Martin (1968, 1975). C.-W. Kim points out that Korean deals with adjective concepts in a manner very similar to Japanese (i.e. the adjective class is syntactically undistinguishable from the class of verbs; and it has a large number of members, although it is closed).

'those words which, like English adjectives and adverbs, can enter into subordinate endocentric constructions with another word'. These can occur, roughly, as modifiers to nouns [+ N], as modifiers to verbs [+ V], or as substantives [S]. The VALUE adjunctives and most of the DIMENSION ones have all three functions; the COLOUR items *vɔkɔ́* 'black' and *bingbá* 'red brown' can only modify nouns, as can AGE items; *vuru* 'white' can modify nouns or function as a substantive. The SPEED items can only modify verbs. The DIMENSION concept 'deep' is expressed by the verb *linda* 'to descend into, to be deep'. PHYSICAL PROPERTY terms appear to be largely verbs; but *gá wá* 'become hot' and *gá ngú* 'become wet' are derived from nouns *wá* 'fire' and *ngú* 'water' respectively, by means of *gá* 'to come' (this is a rather obvious, natural derivation but one which few languages appear to exploit). There is one HUMAN PROPENSITY adjunctive *búbá* 'foolish' (functioning as a modifier to a noun, or as a substantive itself); other human propensity concepts appear to be rendered by nouns – *ngiá* 'happiness, joy', *ndaráá* 'wisdom, skill, cunning', and so on.⁴⁰

There is a tradition of grammar-writing for **Hausa** (see §1.1)⁴¹ that normally recognises a class of a dozen or so Adjectives. But since most of these have exactly the same morphological possibilities as nouns (distinct masculine, feminine and plural forms, for instance) it is often not clear on what grounds Adjectives can be said to constitute a distinct class. It appears that criteria can be given, but they are quite delicate syntactic ones – see Parsons, 1960. For instance, whereas a noun-adjective combination can be expressed by ADJECTIVE₁ + GENITIVE-COPULA + NOUN₂ or by NOUN₂ + ADJECTIVE₁, a NOUN₁ + GENITIVE-COPULA + NOUN₂ phrase can *not* be expressed by NOUN₂ + NOUN₁.

It seems that on this criterion there is a class of about twelve adjectives (perhaps better regarded as a subclass of 'nominals'); they all belong to the AGE, COLOUR, DIMENSION and VALUE types, save for the single PHYSICAL PROPERTY adjective 'fresh, raw, unripe'. Although 'bad' is an adjective, 'good' can only be rendered by *da kyau*, in terms of the noun *kyau* 'that which delights the eye'. HUMAN PROPENSITY concepts are consistently expressed through abstract nouns – 'cruelty', 'kindness', 'generosity', 'jealousy', 'happiness', 'cleverness' and so on.

40. The sources for Sango were Samarin's grammar (1967), Taber's dictionary (1965) and personal communications from Samarin and Taber.

41. The main sources for Hausa were Abraham (1959) and the dictionary by Bargery (1934); in addition Carleton Hodge provided important information. See also Note 4.

For the SPEED type there is one abstract noun *sauri* 'quickness', and for the opposite pole an adverb *sannu* 'slowly'. Some PHYSICAL PROPERTY concepts are expressed by verbs – 'dry' and 'wet' are intransitive verbs, for instance – and some by nouns – *nauyi* 'heaviness, weightiness' (with the extensional meaning 'slowness'), *zafi* 'heat'. There are some PHYSICAL PROPERTY pairs, and also some DIMENSION pairs, where the positive member is expressed by a noun and its antonym by a verb – symbolised N/V in the table. Thus *kaifi* 'sharpness of edge' and *dakushe* 'become blunt'; *fa'di* 'width' and *k'untace* 'become narrow'.

In *Acooli* (see §1.1) verbs are readily distinguishable from nouns in terms of the fairly extensive morphological possibilities of the former. The main morphological characteristic of nouns is the existence of distinct singular and plural forms – plurals are formed either by suffixing *-i* or by prefixing *lā-*. Adjectives are distinguished from nouns by the particle *mà* 'who, that, which'; this must precede an adjective in attributive function. (In predicative function adjectives do not take *mà* but bear a copulative prefix, just like predicative nouns.) The Adjective class is closed, having about forty members; of these the VALUE pair and DIMENSION items 'big', 'small', 'long', and 'short', have distinct singular and plural forms (see §1.1 for details). The adjectives that do not inflect for number comprise further DIMENSION terms ('deep', 'shallow', 'broad', 'narrow'), the AGE pair, three COLOUR terms, fifteen or so PHYSICAL PROPERTY items and HUMAN PROPENSITY adjective *ryeèk* 'wise, prudent, liberal'. Some PHYSICAL PROPERTY concepts are expressed through verbs e.g. *twɔð* 'to become dry' (there is the adjective *dyaað* 'wet, moistened'). Many HUMAN PROPENSITY qualities are expressed through nouns – in some cases abstract nouns such as *nyéékô* 'jealousy, envy', and in other cases nouns referring to people of a particular propensity, as *lādöòr* 'stingy person, miser'. SPEED concepts are expressed through the small closed class of Adverb.⁴²

Hua, a language from the eastern highland district of New Guinea, has no more than a dozen descriptive adjectives. They occur in attributive function only, being obligatorily accompanied by a noun; unlike nouns, adjectives cannot occur with the connective particule *mo*, or as predicates after a copula verb. The Adjective class covers COLOUR and AGE, 'big' and 'little' from the DIMENSION type, one HUMAN PRO-

42. Data for *Acooli* came almost entirely from Cazzolara (1955) and from correspondence with Father Cazzolara.

PENSITY item, *fera?* 'wild', and one PHYSICAL PROPERTY word, *aigava* 'green, raw, false' (compare with Hausa, where 'fresh, raw, unripe' was also the only PHYSICAL PROPERTY adjective).

Most other adjectival descriptions involve verbs in *Hua*, but the great majority of these are compounds of a noun plus *hu* 'do' (or, less frequently, *ai* 'bash', *ro* 'burn' or one of a few others) – this is shown as N^v in Table 2. Thus 'long' is literally 'length' + 'do' and 'sharp' is 'sharpness' + 'bash'. There are, however, monomorphemic verbs for a few adjectival concepts, and these mostly fall within the PHYSICAL PROPERTY type – 'stale', 'heavy', 'light' – although there are a few HUMAN PROPENSITY items ('clever' can be expressed by a verb, or through the compound 'have ear/mind').⁴³

Alamblak is spoken in the Sepik district of New Guinea (there is no evidence that it is genetically related to *Hua*). Verbs can readily be distinguished from Nouns in terms of their different inflectional possibilities. There is also a small closed class of about 40 Adjectives. This could perhaps be regarded as a subclass of Nouns – although Adjectives take most nominal inflections, they differ from Nouns in not taking any of a set of derivational affixes (for instance, *-et* 'possessed'). Like most nouns, adjectives may function predicatively through the copulative suffix *-e* or inchoative *-ti*.

The Adjective class in *Alamblak* covers DIMENSION, AGE, VALUE and the two COLOUR terms 'black' and 'white'. PHYSICAL PROPERTY involves about a dozen adjectives ('lightweight', 'dull', 'hard', etc.) and in addition a fair number of verbs ('heavy', 'sharp', 'hot', 'cold', etc.). The HUMAN PROPENSITY type shows just two adjectives, *graf* 'wild' (compare with *Hua*, above) and its antonym *tirf* 'domestic' with other concepts being dealt with by verbs; there is also an adverbial suffix *-yöhweh* 'jealously' (e.g. *kföyöhweh* 'speak jealously'). SPEED is shown by a quite different grammatical device – adverbs or adverbial suffixes.⁴⁴

Telugu is a Dravidian language spoken by forty-four million people in South India. Verbs inflect for tense, aspect, negation, etc. and Nouns for gender, number and case. In contrast, members of the small closed class of Adjectives do not decline; an adjective must always be immediately followed by a noun within an NP. Some (or perhaps all) of the roots which have basic membership of the Adjective class can also be used ex-

43. Information on *Hua* comes entirely from John Haiman.

44. Data on *Alamblak* is from Les Bruce.

tensionally as nouns in semantically marked contexts (see §§1.2.4, 1.2.6); in view of this, Adjectives are shown as 'A(-N)' in Table 2 – they cover VALUE, AGE, the main DIMENSION terms and a few PHYSICAL PROPERTY items (*pacci* 'green, raw', *tadi* 'wet', *podī* 'dry').

A number of Telugu roots can function as nouns or as adjectives – they are shown as 'N-A' in Table 2; these cover some DIMENSION and PHYSICAL PROPERTY concepts in addition to the SPEED type. (Whereas the A(-N) item appears to be basically adjectives, with infrequent and almost metaphorical extension to noun function, the N-A items are basically nouns, that can also function as adjectival modifiers.) HUMAN PROPENSITY is virtually the exclusive province of straightforward nouns; there were many Telugu abstract nouns for this type in the twelfth century but most of these have now been replaced by abstract nouns borrowed from Sanskrit.

There is another small class of roots, that must take a derivational affix. They form adjectives by the addition of *-ni* ~ *-ti*, adverbs by the addition of *-gā*, and a unique type of noun (existing only in the nominative singular) by the addition of *-na*. This class (shown as 'Aⁿⁱ' in Table 2) includes the four Telugu COLOUR terms ('black', 'white', 'red' and 'yellow-green'), the four taste terms ('sweet', 'sour', 'bitter', 'salty') and half-a-dozen other PHYSICAL PROPERTY items ('hot', 'cold', 'soft', 'smooth', 'fine') in addition to a single DIMENSION root, 'thin'.⁴⁵

Kiriwinian, spoken on the Trobriand and adjacent Islands, belongs to the Melanesian branch of the Austronesian family. Verbs and Nouns are distinguished morphologically, notably in terms of the pronominal suffixes each takes. The 'most exotic feature of the Trobriand language' – as Malinowski (1920) put it – is undoubtedly the existence of a set of 140 or so classificatory particles (cf. Chapter 8 below). Classifiers occur within a noun phrase – thus, every occurrence of a noun must have a classificatory prefix, determined by the reference of the head noun; for instance, *sisi-* 'boughs', *kada-* 'roads', *kapwa-* 'bundles (wrapped up)' *vili-* 'parts twisted off', etc.

There is a closed class of about fifty adjectives, recognised in terms of their syntactic co-occurrence with nouns. Adjectives are subclassified into three types, according as they *must* take classifiers, [+cl], *can optionally* take them [±cl], or *can not* occur with a classifying prefix, [-cl]. The first subclass covers the AGE pair; 'big', 'little', 'long' and

45. Bh. Krishnamurti provided this information on adjectives in Telugu.

'short' from DIMENSION; 'ugly', 'beautiful' and five unpaired terms, 'curly (hair)', 'combed (hair)', 'spotty', etc. The adjectives that can optionally take a classifier include four more DIMENSION items ('broad', 'narrow', 'thick', 'thin'), fifteen PHYSICAL PROPERTY concepts ('sharp', 'blunt', 'wet', 'dry', 'rough', 'smooth', etc.) and one HUMAN PROPENSITY term *gasisi* 'fierce'. Those that cannot occur with a classifier include the VALUE pair 'good', 'bad', and a further fifteen PHYSICAL PROPERTY terms ('heavy', 'light', 'hard = difficult', 'soft = easy', 'hot', 'cold', 'sweet', 'bitter', etc.). The Adjective class in Kiriwinian is pretty much a common multiple of the concepts typically found in small Adjective classes – almost all the items listed as occurring more than once in our sample of twenty classes (with 7-24 members), at the end of §1.1, are included here.

COLOUR terms have something of the properties of adjectives and of nouns; it is probably safest to class them as nouns. Almost all are identical to or closely related to a concrete noun; thus *nukunoku* 'red' and *noku* 'bush producing red dye', *pupwakau* 'white' and *pwaka* 'lime' (one term for 'black' is *bateri*, a loan from English *battery*, presumably referring to its carbon content).

Some PHYSICAL PROPERTY concepts are dealt with by verbs ('be strong', 'be weak', 'be unripe, immature') as are most HUMAN PROPENSITY ideas ('be wise', 'be stupid', 'be jealous'). Some HUMAN PROPENSITY concepts are realised as nouns. SPEED is dealt with by 'adverbs' (which behave morphologically exactly like nouns).⁴⁶

Tzotzil, a Mayan language spoken in the state of Chiapas, Mexico, has on inflectional criteria distinct classes of Transitive Verb, Intransitive Verb, Noun and Adjective. The Adjective class appears to be open; it includes COLOUR, AGE, VALUE and SPEED terms. Some DIMENSION concepts are expressed through adjective roots ('large', 'little', 'long') but others are rendered by transitive verbs – *hamal* 'wide' is derived from *ham* 'to open, reveal' and *cukul* 'narrow (house, board, path), tight (clothes)' from *cuk* 'to tie up, tether'. There are many PHYSICAL PROPERTY items in the adjective class, e.g. *sik* 'cold', *ze* 'raw, unripe, undercooked'; however, some physical property concepts are expressed by verb roots, e.g. transitive *hux* 'sharpen', *c'ul* 'plane, polish' (with derived *c'ulul* 'smooth'). For the HUMAN PROPENSITY type there are a few adjectives, e.g. *p'ih* 'clever, intelligent, quick', *pim* 'stubborn', *bol* 'stupid'. Very many human propensity concepts are ex-

46. Information on Kiriwinian is from Ralph Lawton.

pressed metaphorically, through phrases containing either *2o?on* ‘heart’ or *hol* ‘head’ as head noun, modified by a non-human-propensity adjective, a number term or a participle. Thus ‘happy’ is literally ‘one-hearted’, ‘sad’ is ‘two-hearted’, ‘cowardly’ is ‘small-hearted’, ‘offended’ is ‘heart is broken/ruined’, ‘furious’ is ‘head is gnawing’, ‘angry’ is ‘bad head’, ‘deceitful’ is ‘much head’. There are also some human propensity idioms based on verbs – ‘to be proud’ is literally ‘to raise oneself’.⁴⁷

Chinook, a Penutian language, was spoken in the state of Oregon. Three parts of speech are involved in adjectival concepts: Verb, which must bear at least one ‘person’ inflection (either transitive object or intransitive subject); Noun, which inflects for its own gender-number followed by a possessive pronoun; and non-inflecting Particles. A particle is used with an auxiliary verb (which is inflected for person, etc.) – for instance *kʷaš niniùx* ‘I scared him’ involves the particle *kʷaš* ‘fear, frightened, gotten the better of, surprised, tricked’ and auxiliary *ni-n-i-ù-x* ‘PAST-I-HIM-DISTAD MOTION-do’.

Chinook renders SPEED and COLOUR concepts through the class Particle. The great majority of PHYSICAL PROPERTY terms are also particles; a few – such as ‘sour’, ‘sweet’, ‘heavy’ – are masculine nouns; and there is a verb ‘to be hot’ – *x-kl-t*. The AGE type is expressed by verbs, as are ‘fresh’, ‘raw’ and a few similar concepts, which are perhaps best regarded as belonging to the AGE type in Chinook. DIMENSION and VALUE types are expressed by masculine nouns (*i-t'úkti* ‘good’, masculine singular noun, is related to intransitive verb *-t'úkti* ‘kind’). Many HUMAN PROPENSITY concepts are rendered by nouns, some of which are synchronic or diachronic deverbal derivations; the nouns – like dimension and colour nouns – are mostly masculine, but there is for instance the neuter *-xax* ‘sadness’. There are also some HUMAN PROPENSITY particles (‘glad’) and verbs (‘kind’).⁴⁸

Yurok expresses adjectival ideas through members of the class Verb. A subset of verbs have different forms according to the covert category of the noun they are qualifying; the subset consists of number words, and members of the COLOUR and DIMENSION semantic types (see §1.1). There is a verb *skewic-* ‘to go slowly’ and verb stems ‘to go quickly’, ‘to

47. Tzotzil data was supplied by John B. Haviland based on his own fieldwork and on Colby (1963) and Laughlin (1975). See also Cowan (1969).

48. Chinook information is almost entirely from Michael Silverstein, based on his own fieldwork on the Wishram-Wasco dialect of Upper Chinook. The data given by Silverstein was supplemented in some instances from Boas’s (1911b) work on Lower Chinook.

run quickly’, ‘to swim quickly’ and so on, in addition to an adverb *himeni* ‘quickly’.⁴⁹

Samoan, an Austronesian language, has two open parts of speech. A verb will occur sentence initially, preceded by a ‘verb particle’ indicating tense/imperative and so on. A noun must follow a verb and is preceded by a ‘noun particle’, typically an ‘article’ making specifications from the systems ‘definite/indefinite’ and ‘singular/plural’.

Samoan expresses almost all adjectival concepts through the class Verb. The exceptions are some HUMAN PROPENSITY terms that are derived from abstract nouns – thus from *aga* ‘conduct, behaviour’ are verbs *agalelei* ‘be kind’ and *agaalofa* ‘be generous’.⁵⁰

English has an open class Adjective and most members of the seven semantic types come within the class. However, the basic root is a noun in the case of some HUMAN PROPENSITY terms (*anger*, with derived adjective *angry*); and some PHYSICAL PROPERTY concepts are expressed by the past participles of verbs (*broken*, and so on).

Dyirbal, which is spoken in north-east Australia, has distinct sets of inflections for verbs, on the one hand, and nouns and adjectives, on the other. An adjective has exactly the same inflectional and derivational possibilities as a noun, and can comprise a complete NP, as can a noun. The two classes are distinguished in terms of the co-occurrence with article-like ‘noun markers’ – see §5.2 below. A noun can only occur with a noun marker that agrees with it in noun class (‘gender’) whereas an adjective can occur with a noun marker inflected for any of the four genders. The adjective class in Dyirbal is open, and just about every possible member of the seven adjective types belongs to this class.⁵¹

The plural of nouns and adjectives in Dyirbal is normally shown by reduplication. But there are just seven roots for which separate plural forms are known. Six are human nouns, the seventh being the adjective ‘big’. The plural is formed in identical fashion in the northern dialects – *bulgan* ‘big’, plural *bulgangay* – and in the southern dialect, Giramay – *jagini* ‘big’, plural *jaginiyay*. (The suffix *-gay* does not occur on any

49. Yurok data comes entirely from Robins (1958).

50. Samoan data is from Milner’s (1966) dictionary, with some reference to the grammar by S. Churchward (1951).

51. It is interesting to compare Dyirbal with its northerly neighbour, Yidiny; this language has an open class of adjectives, covering *almost* exactly the same semantic ground as the Dyirbal class. But Yidiny has some HUMAN PROPENSITY nouns – e.g. *birm-birr* ‘jealousy’ – from which adjectival forms can be derived by the comitative suffix *-ji* ‘with’.

other word.) The fact that 'big' is the only adjective to have a plural form in Dyirbal correlates well with our survey in §1.1 – 'big' was the only concept common to *all* of our sample of twenty small adjective classes.⁵²

1.4.3 Universal part of speech membership of the semantic types

In this subsection we attempt to make generalisations about the habitual part of speech memberships of the various semantic types, on the basis of the data in Table 2; for the time being Chinook is left out of consideration. Note that the VALUE, AGE, COLOUR and SPEED types normally have very restricted size – involving from two to half-a-dozen words, according to the language. DIMENSION usually involves a dozen or so words, rarely very many more. PHYSICAL PROPERTY always involves at least several score items, while HUMAN PROPENSITY words can run into the hundreds.

The languages fall into two kinds (α) those with a large open adjective class, consisting of all or most of the members of all seven semantic types – English, Dyirbal and probably Tzotzil are of this kind; and (β) those with a small closed adjective class, involving only some of the types. The size of the class can vary, from about a dozen members for Hausa and Hua, about fifteen in each of the classes 'A(–N)' and 'Aⁿⁱ' for Telugu, almost twenty for Bemba, about forty for Luganda, Acooli and Alambalak, a few more for Kiriwinian and Sango, perhaps seventy or eighty (of both prefixing and non-prefixing types) for Swahili, to several hundred for Japanese. For kind (β) some of the types belong to a part of speech that is distinguished, morphologically and syntactically, from the part of speech that the other types belong to. For kind (α) all the types belong to a single part of speech. Languages with no adjective class at all – like Samoan and Yurok – are best considered special cases of kind (α); like the kind (α) languages all the semantic types belong to a single class – it is just that there is, as it were, syntactic/morphological neutralisation between the group of adjective types and the group of verb types in these languages, so that one part of speech (labelled 'verb') embraces both groups of semantic types.

We can now extract the following generalisations from the table:

(a) The AGE, DIMENSION, VALUE and COLOUR types are likely to belong to the adjective class, however small it is.

52. Dyirbal and Yidiny data is from my fieldwork – Dixon 1972, 1977.

(b) The HUMAN PROPENSITY type is predominantly associated with the noun class for languages of kind (β). For Hausa, with the smallest adjective class, all human propensity items in our sample are nouns; languages with slightly larger adjective classes tend to have just one or two human propensity adjectives, but in each case (except for Kiriwinian and the highly 'verbal' language Alambalak – c.f. §1.4.4) most human propensity items are basically nouns. Of the kind (α) languages, English and Samoan have a few human propensity nouns, in addition to the large number of human propensity adjectives. In Dyirbal all human propensity concepts are expressed through adjectives, none through abstract nouns. On the limited data available, Yurok appears to be similar to Dyirbal.

(c) The PHYSICAL PROPERTY type is typically associated with the verb class for languages of kind (β). Where the adjective class is small, there are likely to be no physical property adjectives; as it gets larger – from language to language – we encounter some physical property adjectives. Overall, an adjective class of a given size is more likely to include some physical property adjectives than it is to include human propensity items.⁵³

Turning now to the SPEED type, we can note a close dependence on the PHYSICAL PROPERTY type:

(d-a) if the PHYSICAL PROPERTY type is predominantly associated with the adjective class, then so will the SPEED type be; (d-b) if the PHYSICAL PROPERTY type is predominantly associated with the verb

53. Over all the languages that this investigation has covered, the PHYSICAL PROPERTY concept that seems most likely to be realised as an adjective is 'raw' (cf. the survey at the end of §1.1). 'Raw' is one of the dozen or so descriptive adjective roots that can be reconstructed for proto-Bantu, *-biçü (Guthrie 1967-71) – it also occurs in the adjective classes of many present-day Bantu languages, including Bemba, Luganda, Rongo, Shona and Venda (Doke 1954). Outside Bantu, 'raw' is in the closed adjective classes of Hausa, Hua, Telugu, Pengo, Avantine and the Nilo-Saharan Logbara (Cazzolara 1960). In the Tibeto-Burman Garo, there is a small subset of verbs (all starting with *gi-*, possibly a 'frozen prefix') that have special grammatical properties (Burling 1961:11 and personal communication); they might well be called an 'adjective subclass'. This class includes COLOUR terms 'black', 'white' and 'red' (but not the fourth colour term 'yellow' – cf. our comments on the Berlin-Kay hierarchy in §1.3.4), AGE terms 'new' and 'old', no DIMENSION terms, but three PHYSICAL PROPERTY items *git-tiŋ* 'unripe', *git-tay* 'raw' (in many languages the same word has senses 'unripe' and 'raw') and *gi-mik* 'whole'. ('Whole' is also a member of a small adjective class in, for instance, the Bantu languages Bemba and Luvale (Horton 1949); and it is one of the small set of adjectives that inflect for number in Rotuman – §1.1.)

class, then the SPEED type will be associated with the adverb class.

(d-a) is the order of things for languages with open adjective classes – English, Dyirbal, Yurok, Samoan, Tzotzil – and for some languages with closed but quite large classes – Japanese and Swahili. (d-b) holds for Bemba (where most physical property items are verbs, there being just two adjectives) and for Sango. (Samarin's category of 'adjunct' covers both adjective and adverb functions; the SPEED adjuncts can only qualify verbs, and are clearly to be regarded as adverbs for the purposes of this generalisation. Note that although Sango has about three score adjuncts, none are physical property items). Although Acooli has about fifteen physical property adjectives, it also has some physical property verbs, and the speed items could have been – within the terms of this generalisation – equally well adjectives or adverbs; in fact they belong to the adverb class. Similar remarks apply to Alamblak. (As the size of the adjective class increases, PHYSICAL PROPERTY items tend to be brought in at a slightly earlier stage than do SPEED items.)

Luganda has about the same number of adjectives as Acooli, and a similar division of the PHYSICAL PROPERTY type between adjectives and verbs – quite within the spirit of the generalisation, it has one speed adjective and one speed adverb. Hausa speed items are also explainable by the generalisation; they are included in the general discussion of the 'A/V and N/V syndrome' in the next subsection. The correlation between PHYSICAL PROPERTY and SPEED applies to Hua – where SPEED is N^v, like most PHYSICAL PROPERTY items – and Telugu – where the common category is N-A. Finally, note that the generalisation can be extended to Chinook: the PHYSICAL PROPERTY type is predominantly associated with the part of speech Particle, and the SPEED items are both particles.

There are just a few exceptions to the generalisations:

(1) Tzotzil has relatively few DIMENSION adjectives, other dimension concepts being expressed through verbs. Sango also expresses some DIMENSION concepts through verbs.

(2) Kiriwinian provides the only real exception to (d) – most PHYSICAL PROPERTY terms are adjectives yet SPEED is expressed through 'adverbs' (a subclass of verbs). Kiriwinian is also unusual in that there are more verbs than nouns for the HUMAN PROPENSITY type; but note that there are overall very few nouns expressing adjective types in Kiriwinian (the only other type to feature nouns is COLOUR and

here the grammatical decision is a marginal one – see §1.4.2).

(3) The COLOUR type in Bemba belongs to the verb class. On a priori semantic ground, colours should perhaps be grouped into the PHYSICAL PROPERTY set, along with 'heavy', 'soft', 'sweet' and so on. However, the special grammatical properties of colour adjectives in English led to our recognition of a separate type, and the data from other languages has generally supported this decision. If colour were counted as a kind of physical property,⁵⁴ then we should have to say that, of the PHYSICAL PROPERTY type, the main colour words were the most likely to be adjectives. Bemba is unusual in that it has two physical property adjectives – 'raw' and 'whole' – whereas the colour terms are verbs; but in fact it has only arranged its priorities slightly differently from the norm.⁵⁵ Kiriwinian provides a further exception here, where COLOUR terms are probably best classed as nouns (see above).

(4) Most of the occurrences of the class Noun in Table 2 will be dealt with by a further generalisation in the next subsection. However, there are some unaccounted-for idiosyncrasies, such as the fact that Japanese has a noun 'whole'. (For many languages 'whole' appears to be a very basic concept; it occurs in a number of quite small adjective classes – see Note 53.)

1.4.4 Adjectival and verbal languages

For any quality to be *significant* there must be some implicit contrast –

54. It would be easier to consider COLOUR as a subtype of PHYSICAL PROPERTY items in languages which have just two or three pure colour terms (see Berlin and Kay, 1969, and §1.3.4). A two-term colour opposition would obviously have more of the properties of antonyms than of complements. Once the number of colour terms increases – as in English – it becomes increasingly necessary that the clearly defined complement set which emerges should be recognised as a separate semantic type. (In English a case can be made out for placing 'dark'/light' in PHYSICAL PROPERTY, a different semantic type from COLOUR. Yet in languages with only two or three colour terms, one form is likely to cover 'black' and 'dark' and another 'white' and 'light').

We remarked above that the four COLOUR words and the four taste terms in Telugu make up about half of the small '-ni class'. In fact, if we worked intensively with Telugu (as we did with English in §1.3) we might well be led to set up a semantic type involving COLOUR and TASTE. (This would not, however, be confirmed by data from other languages.)

55. Quite a number of Bantu languages (including Luvale, Ronga and Nguni (Doke 1954)) have small adjective classes that involve no colour terms.

either between the presence of the quality and its absence, or between the presence of the quality and the presence of some other quality. Only significant qualities have names. Consider some community that does not have fire – all food must necessarily be eaten raw. There is nothing that contrasts with ‘raw’, and the community would not be likely to have any word ‘raw’. But suppose that fire is now introduced, and some food is subjected to the action of cooking; if a verb ‘cook’ is brought into the language, the induced state of the food can be described through a derivation from the verb root, a participle like ‘cooked’. Now a term is needed for the state of not being cooked, and it will be appropriate to introduce an adjective ‘raw’.⁵⁶ Take, as another example, some alien race of small strength living on a world of low gravity, such that it is physically impossible for anything to break or be broken. They would not need a term ‘whole’, since everything would necessarily always be whole. Now if they were invaded by another race, stronger and more destructive, their language would need to take on something like a verb ‘break’ and also an adjective ‘whole’, as the complement of the participle ‘broken’.

Thus certain states, naturally described by adjectives, contrast with states that are the result of some action. We *could* have a verb ‘cook’ and a separate non-derived adjective describing ‘the state of being cooked’; however, this seems redundant – we manage perfectly well with the verb, using its participle for the complement of ‘raw’.

The last two paragraphs have effectively described how English works: most adjectives have adjetival opposites (*wide* and *narrow*, *sharp* and *blunt*, *quick* and *slow*) but some adjectives – denoting a state that can only be interrupted by some definite action – have participial opposites. But other languages function quite differently. There are two main patterns, exemplified by Dyirbal, and by Hausa and Alamblak.

(I) Strongly adjetival languages. It can be seen from Table 2 on page 35 that Dyirbal has no verb or noun roots expressing any of the concepts

56. Note, though, that many languages have one adjective covering both ‘raw (of flesh food)’ and ‘unripe (of vegetable food)’. That is, the ripening action of the sun is likened to the cooking action of fire. It is in fact quite likely that when human societies learned to control and use fire and it became necessary to describe the opposite state to ‘cooked’, an already existing item ‘unripe, green’ simply had its meaning extended in this direction.

It is interesting to note a rather different semantic range in Dyirbal. Here *gunga* covers ‘raw (of meat)’ – as opposed to *nyamu* ‘cooked’ – and also ‘alive (of a person)’ – opposed here to *guyi* or *buga* ‘dead’.

under the seven semantic types; it is a more strongly adjetival language than English. Dyirbal demands that the opposite of each adjective also be an adjective, not some form derived from a verb root. Thus there is the adjective *gunga* ‘raw’, the verb *nyajun* ‘to cook’, and in addition the adjective *nyamu* ‘cooked’ (despite the identical initial syllables it has not proved possible to show that *nyajun* and *nyamu* are cognate). Similarly, there is the adjective *mugulnba* ‘whole’, a number of verbs such as *rulban* ‘to split’, *gaynyjan* ‘to break’, and also two adjectives *yagi* ‘broken, split’ and *munyi* ‘broken into very small pieces’.⁵⁷

(II) Strongly verbal languages. In English we have adjectives *raw* and *whole* as the unmarked members of oppositions *raw/cooked* and *whole/broken*, but use verb forms for the marked poles. Alamblak and Hausa take this principle one step further – for a fair number of antonym pairs in the DIMENSION, PHYSICAL PROPERTY, SPEED (and possibly AGE) types, these languages have an adjective or noun for the unmarked member, and a verb for the marked member of the pair; this has been shown as A/V or N/V in Table 2.

These possibilities can be summarised:

	ACTION OPPOSITIONS	NON-ACTION OPPOSITIONS
	e.g. ‘raw’ – ‘cooked’	e.g. ‘sharp’ – ‘blunt’
(I) strongly adjetival languages (Dyirbal-type)	A – A	A – A
(O) neutral languages (English-type)	A – V	A – A
(II) strongly verbal languages (Hausa-type)	A – V	A – V

Hausa is a particularly extreme example of kind (II). It has only a dozen adjectives – all but one of these deal with the types COLOUR, AGE, VALUE and some of the concepts in the DIMENSION type. The exception is *danye* ‘raw’ – ‘cooked’ is rendered by the past participle of

57. Note that adjectives in Dyirbal can be freely verbalised – by inchoative suffix *-bil* or causative *-mal*, deriving intransitive and transitive verb stems respectively. Thus *yagi + bil* ‘become split’, *yagi + mal* ‘make split’ etc.

the verb *dafa* ‘to cook’. For many other antonym pairs, that are rendered by adjectives in other languages, Hausa typically has a noun for the unmarked or positive quality and a verb to express the marked quality; we refer to this as ‘the N/V syndrome’. Thus

<i>Hausa</i>	Noun	Verb
DIMENSION	<i>fa'di</i> ‘width’	<i>k'untace</i> ‘become narrow’
PHYSICAL	<i>kaifi</i> ‘sharpness’	<i>dakushe</i> ‘become blunt’
PROPERTY	<i>'dakwaci</i> ‘whole’	<i>fashe, fasa, karye, tsinke</i> ‘to break’
SPEED	<i>sauri</i> ‘quickness’	<i>sannu</i> ‘slowly’

There are some PHYSICAL PROPERTY pairs for which both poles are verbs (‘wet’, ‘dry’) or both nouns (‘heaviness’, ‘lightness’), but the N/V syndrome seems most typical for physical property antonym pairs. Thus it is entirely predictable – by generalisation (d) – that the unmarked SPEED term should be a noun and the marked term an adverb. The N/V syndrome also appears to extend to the AGE type – dictionaries say that *sabo* ‘new, young’ functions primarily as an adjective and secondly as a noun, whereas *tsofe* ‘[become] old’ functions primarily as an adjective and secondarily as a verb.⁵⁸

Further examples have been supplied, for Alamblak, by Les Bruce. He mentions that the opposition between an unmarked state (shown by an adjective) and a marked action (shown by a verb) which alters the original state is illustrated by the following:

<i>Alamblak</i>	Adjective	Verb
	<i>nfri</i> ‘unripe’	<i>huk(kföt)</i> ‘to ripen’
	<i>wafkha</i> ‘healthy’	<i>dböhna(kföt)</i> ‘to be sick’
	<i>nfri</i> ‘alive, new’	<i>noh(kföt)</i> or <i>gu(kföt)</i> ‘to die’
	<i>briöh</i> ‘empty’	<i>frkih(kföt)</i> ‘to be full’

58. The fact that Hausa renders the VALUE concept ‘good’ through a noun and ‘bad’ through an adjective does not seem related to the N/V syndrome.

Note also an A/V opposition that does not so clearly involve any action (and shows opposite polarity to the ‘sharp/blunt’ example from Hausa):

<i>mna</i> ‘blunt’	<i>nambur(kföt)</i> ‘to be sharp, fierce’
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Other languages display the N/V, A/V syndrome to a degree. Thus Carib, with forty or so adjectives (Hoff, 1968) has nouns *a:pi* ‘broadness’, *awo:siy* ‘heaviness’, *ya?na* ‘hardness’, *ere?ni* ‘quickness, nimbleness’ but adjectives *sira:pime* ‘narrow’, *sawo:ne* ‘light (in weight)’, *ara:suka:me* ‘soft’ and *püimeke* ‘slow’. Here nouns are used for the marked and adjectives for the unmarked member – an N/A opposition.

It appears in fact that most of the nouns occurring outside the human propensity row of Table 2 are due to some variant of the N/V syndrome; they all refer to an unmarked or positive quality. Thus Sango derives ‘hot’ and ‘wet’ from the nouns ‘fire’ and ‘water’ but has verbs ‘to be cold’ and ‘to be dry’;⁵⁹ Luganda has a noun ‘sharpness’ but an adjective ‘blunt’.

Dyirbal is an extreme example of kind (I). It is possible to observe the language creating adjectival opposites for adjectives that previously had no opposites from the same class. Thus, fairly recently, the form *manyjay* ‘full up (after eating)’ has become an adjective in its own right, in opposition to the established adjective *yamir* ‘hungry’. Historically, *manyjay* is a participial form of the intransitive verb *manyjanyu* ‘eat vegetables/fruit to appease hunger’; however, it has undergone some semantic movement and informants insist that *manyjay* cannot nowadays be considered a participle (derived from verb *manyjanyu* by a regular morphological process, with predictable semantic effect) but it is a separate, albeit related, lexical item.

That Dyirbal has a verb *nyajun* ‘cook’ and a non-derived adjective *nyamu* ‘cooked’ is merely an expression of its being typologically a ‘strongly adjectival’ language. There is no implication that speakers are not aware of the connection between the action and the state. Indeed there is clear evidence that they are aware of the connection, even though

59. The derivation of ‘hot’ from ‘fire’ and ‘wet’ from ‘water’ might be thought not unexpected for a creole like Sango. However, William Samarin points out (personal correspondence) that such periphrasis is not unusual in the non-creole languages of this area. Thus Gbeaya has *baá wey* ‘it has become/is hot’, *baá ri* ‘it has become/is wet’; but there is a verb for ‘to be cool’ – *gá*, and there is a verb *nösi* for ‘to be damp – used of soil, i.e. to be damp in one spot’.

it is not exploited in the everyday language style (Guwal). In the next chapter we describe the Jalŋuy or ‘mother-in-law’ style of Dyirbal, which must be used in the presence of certain taboo relatives. Jalŋuy is extremely parsimonious, using every possible syntactic and semantic device to keep the size of its lexicon to a minimum; in fact it has something of the order of a quarter as many vocabulary items as does the everyday style. This parsimony exploits certain redundancies of the everyday style – for instance, having separate items to describe an action, and the state produced by the action. Where Guwal has both a verb ‘to cook’ and an adjective ‘cooked’, Jalŋuy has just a verb, the state being expressed by the past participle of the verb, exactly as in English. And where the Guwal style has both a verb ‘to split’ and an adjective ‘split, broken’, Jalŋuy has just an adjective, the action being expressed through a verbalised form of this adjective (by a regular derivational process of the language – see Note 57). Full details of all this will be found in Chapter 2.

In summary, then, the highly ‘adjectival’ character of Dyirbal is shown by the unanimity of ‘A’ entries for the sample summarised in Table 2. And the highly ‘verbal’ character of Alamblik is indirectly shown by the complete absence of N from the summary in Table 2; adjectival concepts that are not rendered in Alamblik by the small Adjective class are expressed (except for the Adverbal SPEED) almost exclusively by verbs.

1.4.5. Summary of conclusions

We have set up two typological dimensions:

OPEN OR CLOSED ADJECTIVE CLASS

(α) OPEN CLASS – all seven semantic types are associated with the same part of speech, either (a) a different class from such types as MOTION, AFFECT, OBJECTS, i.e. an open adjective class, or (b) the same class as MOTION, AFFECT, etc., i.e. an open verb class.

(β) CLOSED CLASS – some of the seven types are predominantly or exclusively associated with one part of speech (adjective) and some with other parts of speech to which other semantic types also belong (e.g. noun, verb).

VERB OR ADJECTIVE DOMINATION

(I) STRONGLY ADJECTIVAL – the seven types are exclusively associated with a single part of speech, the adjective class.

(II) STRONGLY VERBAL – for many adjectival oppositions, the marked pole is realised by a verb and the unmarked pole by either an adjective or a noun (according as the language is kind (α) or kind (β)).

(O) NEUTRAL – for a few adjectival oppositions – where there is fairly obviously a state resulting from an action – the marked pole may be realised by a verb; but for most oppositions both poles are associated with the same part of speech, adjective.

Now the typical part-of-speech memberships of the types are:

(α)	(β)
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DIMENSION, AGE, VALUE, COLOUR –	adjective	adjective
PHYSICAL PROPERTY –	adjective	verb
HUMAN PROPENSITY –	adjective	noun

SPEED – adjective if PHYSICAL PROPERTY is adjective	
– adverb if PHYSICAL PROPERTY is verb	

The chart only represents extremes; individual languages can be mapped on to a continuum joining the extremes, according to the size of their adjective class and so on.

A language of kind (O) will have some A/V – if of kind (α) – or N/V – if of kind (β) – pairs in the PHYSICAL PROPERTY type. A language of kind (II) will have such pairs in the physical property type and perhaps some in other types too.

The various types are not equally distinct. For instance, PHYSICAL PROPERTY, COLOUR and SPEED are normally closely associated (cf. §1.3.9).

These generalisations account for the main points of the data given for sixteen of the seventeen languages surveyed in §§1.4.1-2. There are some exceptions, but they are relatively few, and are in most cases principled deviances from the norms we have described. It is the exceptions that give individual languages their particular semantic ‘personalities’, as it

were, within the general typological kind to which they belong.

We have thus indicated, in general terms, what it means to say that a language has 'a class of adjectives'. This is a set of lexical items, distinguished on morphological and syntactic grounds from the universal classes Noun and Verb. Grammatical properties vary a good deal from language to language but we can say that typically Adjective is likely *not* to require tense/aspect/mood or whatever specification it is that characterises members of the class Verb in a given language, and it may be independent of specification for number/person or whatever it is that characterises Nouns. An adjective may syntactically depend on a noun, this being realised through positioning and/or case agreement, etc.

Semantically, an adjective describes some important but non-criterial property of an object. That is, an adjectival description will serve to distinguish between two members of the same species, that are referred to by a single common noun. It seems that, for speakers of human languages, the culturally and cognitively most relevant properties include *colour* (basically 'black' and 'white', sometimes extended to 'red' and so on) and *size*. In addition to general specification of size ('big', 'little') importance is also attached to details of extension in that dimension in which an object has greatest extension ('long/tall', 'short'). Description of the *age* of an object is also considered important (with terms 'new/young', 'old'); this will largely be inferable from observations but may in some cases require more extensive knowledge of the object's origin and history (that would not be necessary for judgements of size or colour).

The other important means of distinguishing tokens of a specific type involves judgments of *value*, descriptions of a quite different type from the easily observable *colour*, *size* and *age*. Thus, an Adjective class almost always includes items 'good' and 'bad', that provide evaluation of the worth of an object for whatever purpose it may typically be used in a particular society. Judgments of value are (unlike those of colour, size and age) highly subjective. For instance, a type of wood with high elasticity might be considered an excellent source of raw material for making bows (and so described as 'good wood') in an Amerindian community, whereas it might be thought of little use (and perhaps described as 'bad wood') in an Australian society, where hardness and strength are the characteristics most sought (for making utilitarian spears, shields, boomerangs, etc.).

An Adjective class is likely to include at least these four types of descriptive term, however small it is. If it involves more than the

minimum of eight or so roots, there may be more examples of DIMENSION and COLOUR terms, there may be some terms involving culturally-important PHYSICAL PROPERTIES ('unripe', 'raw', 'whole', 'sharp', etc.), and – as the size of the class increases – it may include terms referring to specifically human attitudes and feelings (that we have subsumed under the heading HUMAN PROPENSITY).

Our generalisations do not apply very closely to Chinook. This is partly because Chinook has a largish 'Particle' class, which is unlike anything in any of the other sixteen languages; but Chinook is odd in other ways – in having VALUE and DIMENSION terms as nouns, for instance. However, type distribution in Chinook does in some details agree with our generalisations. We mentioned that PHYSICAL PROPERTY, COLOUR and SPEED are usually closely associated; in Chinook all COLOUR and SPEED and most PHYSICAL PROPERTY items belong to the Particle class. And most Chinook HUMAN PROPENSITY terms are nouns, agreeing with generalisation (b).

The sample languages were chosen because they appeared to have interesting adjective type distribution, and because fairly reliable data was available for them. They were not chosen with an eye on a particular hypothesis (or otherwise Chinook would obviously have been excluded). A number of other crucial languages have been investigated to a greater or lesser extent, and they all support the generalisations. Chinook is in fact the only language thus far encountered whose type/part-of-speech correlations are not readily explainable. Further work must attempt to seek out other apparently aberrant languages, and then to extend or amend the generalisations so that they apply to *all* languages.⁶⁰

1.4.6. Semantic neutralisation

We postulate that there are certain universal semantic types, and that each language has *some* words belonging to each type. The degree of specification within a type varies from language to language. Thus, in Sango (admittedly a creole) *kótá* has the senses 'big, wide, thick' while in English, Swahili and Chinook, for instance, there is a separate word for each of the three senses; similarly Sango *kété* has the senses 'small, nar-

60. When the first draft of this paper was written, in 1970, the adjective classes in 30 or 40 languages had been examined, and Chinook was the only exception to the generalisations of this section. In the intervening years data on a score or more further languages (that are 'adjectivally interesting') has been examined, but no further exceptions – on the order of Chinook – have been encountered.

row, thin'. In fact we should, with further investigation, be able to suggest a norm of differentiation within each type, that individual languages deviate from to a greater or lesser extent.

Certain neutralisations within semantic types recur in widely different languages: thus the meaning of Tzotzil *zoz* includes the senses 'loud' and 'hard', and *k'un* includes 'soft' in both senses; in English the hardness/loudness distinction is neutralised only at the marked pole, *soft* having as antonym both *loud* and *hard*.

In some languages there is neutralisation between types. For instance, the VALUE adjective *wuygi* 'no good, bad' in Dyirbal functions as antonym of the value term *jigil* 'good' and also of the PHYSICAL PROPERTY item *bambun* 'healthy' and the AGE term *ganyu* 'new'. Les Bruce reports that *nfri* in Alamblik covers the AGE sense 'new' and also the PHYSICAL PROPERTY meaning 'unripe'.

Most neutralisation (especially that within types) tends to be consistent from language to language. Thus 'wide' always falls together with 'big', never with 'small'; 'generous' always with 'kind', never with 'cruel'; and so on. Some of these mergers may reflect universal cognitive equations; but there are other, language-particular, neutralisations that may mirror, say, the geographical terrain over which a language is spoken. David Bradley points out that in Loloish languages reflexes of **-Cnak* mean 'narrow' and 'deep', almost certainly due to the deep narrow river valleys that proliferate in the Loloish Urheimat. (Contrast Latin, where *altus* had the senses 'high' and 'deep'.)

Other types of neutralisation may reflect cultural norms; this can even lead to inconsistent neutralisation within a type, between different languages. For instance, the Swahili prefixing adjective *-kali* has the senses 'sharp-edged' and also 'astringent, bitter', being the antonym of both *butu* 'blunt-edged' and *-tamu* 'sweet'. Dyirbal adjective *guli* has the senses 'sharp-edged' and 'sweet' as antonym to *mulbun* 'blunt-edged' and to *muymur* 'sour', *jamar* 'bitter'. It seems that such mutually inconsistent neutralisation is most likely to occur within the PHYSICAL PROPERTY class, which deals with the criterial properties of quite different types of object. 'Sharp/blunt' and 'sweet/astringent' are unlikely to qualify the same noun (whereas every HUMAN PROPENSITY item can qualify the single term 'man', for instance) and it is clearly a matter of world-view that the sharpness of a knife or axe is equated with the astringent taste of food or drink in Swahili, and in Dyirbal with the sweet taste (mainly of a drink).

We have already referred to the Dyirbal 'mother-in-law style', Jalŋuy,

which has the smallest possible lexicon consistent with it being possible to say in Jalŋuy everything that can be said in the everyday style. Generally, there exist many-to-one relations between vocabulary items from the everyday and Jalŋuy styles. The everyday style has, like every other language, a great deal of semi-synonymy; Jalŋuy has none. In addition, Jalŋuy involves a good deal of neutralisation within some of the adjectival semantic types. Thus Jalŋuy *wunganday* is the translation equivalent of two everyday style adjectives *dyalŋgay* 'long' and *rarrgay* 'tall'; Jalŋuy *gagir* is the translation equivalent of both everyday *bulgan* 'big' and *yurin* 'deep'. Within the PHYSICAL PROPERTY type, everyday language adjectives *biygar* 'hot' and *gadala* 'dry' are both rendered by Jalŋuy *nyigala*. *Nyigala* is also involved in cross-type neutralisation, being the mother-in-law correspondent of everyday *jala* 'shallow'.

The most interesting fact about adjectives in the Dyirbal Jalŋuy style is that some PHYSICAL PROPERTY terms are completely missing as such;⁶¹ the concepts are expressed – perfectly efficiently – by VALUE adjectives. Thus both *guli* 'sweet' and *jugal* 'straight', for instance, are rendered by *yundarin* 'good' in Jalŋuy.⁶² There is never likely to be any confusion. For most objects there is just one overridingly important quality – sweetness for a drink (to the Dyirbal), straightness for a track. Jalŋuy effectively states that the object is good (or bad, as the case may be) in its criterial quality. This is very much as in English – taking over the Dyirbal world view concerning sweetness and straightness⁶³ – *a good road* would normally imply *a good straight road*, and *a good drink* would imply *a good sweet drink*.

61. There is evidence that the vocabulary of the Dyirbal Jalŋuy style has grown to its present size relatively recently. The adjective class in Jalŋuy seems sparser, by comparison with the everyday style lexicon, than either noun or verb class. There is an obvious suggestion here that a large adjective class is a relative luxury, and that if a language is parsimonious as regards its vocabulary then this will be the first area in which to make economies. There is a clear further implication – although one hesitates to voice it in the present era of linguistics – that as languages originally developed, although some adjectives may have been present in small, early lexicons, a superfluity of adjectives may have been one of the last things which a language achieved.

62. Les Bruce points out that in Alamblik the single adjective *dborioh* covers the meanings 'good' and 'straight'.

63. The only non-water drink which speakers of Dyirbal had before white contact was a weak honey solution (cf. Roth, 1901), which was liked because of its sweetness. Nowadays, if a Dyirbaljan speaks in English of 'strong tea' or 'good tea' he is most likely to be referring to its sugar content.

1.5 Prospect

A lot can be learnt concerning the speakers of a language and the kind of life they lead from a study of the language's semantic structure.⁶⁴ Members of the (deep) class Noun indicate the kinds of objects occurring in the speakers' environments. The differences and similarities here are obvious – it is probably the case that all languages have words for 'stone', 'moon', 'water', 'man', 'woman'; most languages have terms for just those animals occurring in the region in which they are spoken; and so on. Areas of concentration of vocabulary indicate objects or phenomena that are focal points of the community's life – well-known examples concern the Arab's superfluity of terms for parts of the camel, Eskimos' terms for different kinds of snow, and so on (see Boas, 1911a and Sapir, 1912).

All languages have words belonging to the main semantic types associated with the (deep) class Verb – MOTION, ACTION, GIVING, SAYING, LIKING, and so on. Areas of vocabulary concentration here indicate types of actions that are important in the community. Thus Dyirbal has four words for types of spearing – depending on whether the object to be speared can be seen or not, is on land or in water, and whether the spear is thrown or held on to. English has a concentration of words within the GIVING type involving specification of money – *buy, sell, rent, hire, pay, earn*, etc. (see Chapter 3).

Six of the seven adjectival semantic types vary relatively little, as regards the specific meanings that words belonging to the types have in different languages. There is probably less average inter-language variation in VALUE, DIMENSION, AGE, SPEED, PHYSICAL PROPERTY and COLOUR than there is in ACTION and MOTION.⁶⁵ The

64. And conversely – for a proper investigation of the semantic structure of the language a linguist must have a good knowledge of the habits and ideas of the community using the language.

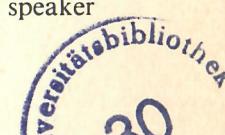
65. The sort of variation within the ACTION type (not much, but more than that in most of the adjectival types, as a rule) can be exemplified by comparing English and Dyirbal. English has the very general verb *to hit*, and a number of extremely specific hyponyms, specifying the actual instrument employed – *to spank* (= 'hit with the flat of the hand'), *to punch* (= 'hit with a clenched fist') etc. Dyirbal has a set of terms that are half-way between the English extremes as regards specificity – *bijin* 'to hit with a rounded object e.g. a clenched fist, a stone', *bunjun* 'hit with a long flexible object e.g. with the flat of the hand, with a belt or bramble' etc.; the Dyirbal terms specify the general type of instrument used. In the MOTION type, a number of languages – including the Australian Mbabaram, and Russian and Chinook – have one verb with the senses 'go' and 'come', direction being shown by a locational adverb; English achieves by lexical means, through having separate verbs *go* and *come*, what these languages achieve by partly lexical and partly grammatical means.

kinds of neutralisation mentioned in the last section are relatively limited in type and in occurrence.

However, the seventh type, HUMAN PROPENSITY, pretty certainly shows more variation from language to language than does any other semantic type associated with any part of speech. There is a general 'region of semantic space' that the human propensity items in individual language all refer to (and it is this that enables us to recognise a universal semantic type), but the specific meanings of human propensity items in different languages vary tremendously. The most appropriate translation of a human propensity adjective in one language (say English) will almost always be a human propensity adjective in a second language (say, Dyirbal); but these will be amongst the least happy translation equivalents between the two languages. English *happy, gay, jolly, merry* and *lively* must all be translated by Dyirbal *gulnya*; but merely listing these five translation equivalents gives little idea of the full range of meaning of *gulnya* within the semantic system of the HUMAN PROPENSITY type in Dyirbal. A better idea is given by a bilingual informant's explanation that *gulnya* means 'nearly jumping the sky'. Similarly, and equally unsatisfactorily, English *sad* or perhaps *offended* would have to be given as translation equivalent for Dyirbal adjectives *guynay* 'sad or offended, because a favour was not repaid', *guymbu* 'sad because, say, one's girlfriend has definitely broken off the affair, with no possibility of a reconciliation', *yangurr* 'sad or offended, because one was not given anything' and *mundu* 'sad or offended because one did not get something that one had a right to expect e.g. wasn't taken on a trip; wasn't delivered of some food one had a right to; wasn't brought to orgasm during sexual intercourse'.

Just as the nouns in a language give some idea of the relevant objects in the speaker's environment, and the verbs the important cultural actions, so the HUMAN PROPENSITY words give an idea of the mental attitudes of speakers of the language. HUMAN PROPENSITY would certainly be the most difficult semantic type to investigate in depth and to make detailed generalisations about; but it would also be one of the most revealing.

In this Chapter I have introduced the idea of semantic type and investigated seven types – in detail for English and extremely superficially for sixteen other languages. A next step would be to investigate in detail the syntactic and morphological properties of the types in some of the crucial languages, much as was done for English in §1.3. Such an investigation requires a sound knowledge – preferably, native speaker knowledge – of a language.



Finally, no one is more aware than I of the many oversimplifications which have been introduced, and the gratuitous theoretical assumptions that have been made in this chapter. It was necessary to cut corners in order to make any progress at all in an exploratory venture of this kind.

PART B

Nuclear and non-nuclear verbs

The next two chapters set forth the hypothesis that the verbs in any language can be divided into two groups – nuclear and non-nuclear. Non-nuclear verbs can be defined in terms of the nuclear items, utilising the full grammatical resources of the language; nuclear items cannot, in the same way, be defined in terms of any more general verbs, but they may be accessible to componential description (often, in terms of features which underlie the grammar of the language). It is suggested that this approach to semantic description incorporates the major insights of the componential and of the definitional methods of semantic description without at the same time taking over any of their inherent disadvantages. Nuclear verbs – ‘tell’, ‘see’, ‘give’, ‘burn’, ‘hit’, ‘laugh’ and so on – have close semantic correspondents across languages, whereas non-nuclear verbs tend to be rather culture-specific and to differ much more from one language to another.

Chapter 2 describes this approach, which was suggested by correspondences between lexemes from the everyday and ‘mother-in-law’ styles of Dyirbal, and provides fairly thorough exemplification from Dyirbal. Chapter 3 compares verbs of giving in Dyirbal with verbs of giving in English, in terms of the nuclear/non-nuclear hypothesis.

The main gist of the hypothesis could be obtained by reading just §2.1.1 (omitting the last paragraph), §2.2.1, §2.2.2, and §2.2.4. The main points are recapitulated briefly, with different examples, in §3.1 (which could in fact be read as an introductory summary).