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*The Search for Units of Meaning*

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PART 1: THE CASE FOR EXTENDED UNITS OF MEANING

The starting point of the description of meaning in language is the word. This is one of two primitives in language form, the other being the sentence. The sentence is the unit that aligns grammar and discourse, and the word is the unit that aligns grammar and vocabulary.

The alignment of grammar and vocabulary is very clear in inflected languages, where in the typical case one morpheme, the lexical one, is invariable and the other, the inflection, varies with the local grammar. This kind of model is absorbed by users of such languages in basic education, and is very strong.

I would like to draw attention to another, more generalised, feature of the independence of the word as we perceive it. In the majority of writing and printing conventions, words are separated by spaces, and thus have the physical appearance of discrete units. One of the early stages in learning to read is the recognition of words as units, and this is built firmly into our general model of language. A text is therefore seen as a succession of discrete items, those items being words.

The word, however, does not reign unchallenged as the basic unit of language. American linguistics of the first half of this century put forward the morpheme, the smallest unit of grammar, as a

*Textus IX* (1996), pp. 75-106.

more suitable foundation, and the surge of interest at that time in unwritten languages, and non-european ones, gave strong arguments. Some scholars preferred the Item and Arrangement model (IA), where the initial steps in describing the structure of a language are the identification of the morphemes and their patterns of arrangement. Words are made up of single morphemes or their combinations, and so on to sentences and discourse. The other model, Item and Process (IP), again began with the morpheme, but instead of arrangement this model envisaged the morphemes going through processes, such as pluralisation, in order to produce the variety of words that are seen, particularly in inflected languages. So, in Hockett's famous paper [1954], the argument raged over whether *baked* consisted of two morphemes, *bake* and *ed* placed one after the other, or *bake* which had gone through the process of having its time reference changed to the past, which was signified by the change in its shape.

Hockett acknowledged at the beginning of his paper that he had accidentally overlooked a couple of millennia of European scholarship in this field, but carried on regardless. This provoked Robins [1959] to advocate a third model, WP (Word and Paradigm), where the word was recognised as the foundation unit, and the equivalent of Process in IP was the inflection of the word. This model had developed in the study of the European classical languages, and Robins argued for its wider relevance.

All three of these models concentrated on the smaller units of language, and in dealing with larger units dwelt almost exclusively on grammar. IC, or Immediate Constituent Grammar showed the IA model in action, and was very popular in the fifties. Harris ([1954], [1958]) found that multi-word stretches of language did not recur, and proposed the transformation as a device for considering as equivalent stretches which differed systematically.

None of these models takes lexis seriously into account, though Harris gets much closer than anyone else. The starting point of this paper is the observation that words enter into meaningful relations with other words around them, and yet all our current descriptions marginalise this massive contribution to meaning. The main reason for the marginalisation is that grammars are always given priority, and grammars barricade themselves against the individual patterns

of words.

A glance at any dictionary will confirm the status of the word as the primary unit of lexical meaning. A dictionary lists the words of a language and alongside each one provides an account of the meaning or meanings. Since the common words of a language typically can have several meanings, these are usually listed in separate paragraphs – Fig. 1 gives an example. The model is clear – words are the units of language but are prone to multiple ambiguity.

<b>shot</b> /ʃɒt/ <b>shots</b>	◆◆◆◆◇
<b>1 Shot</b> is the past tense and past participle of <b>shoot</b> .	
<b>2</b> A <b>shot</b> is an act of firing a gun. <i>He had murdered Perceval at point blank range with a single shot... A man fired a volley of shots at them.</i>	N-COUNT
<b>3</b> Someone who is a good <b>shot</b> can shoot well. Someone who is a bad <b>shot</b> cannot shoot well. <i>He was not a particularly good shot because of his eyesight.</i>	N-COUNT: adj N
<b>4</b> In sports such as football, golf, or tennis, a <b>shot</b> is an act of kicking, hitting, or throwing the ball, especially in an attempt to score a point. <i>He had only one shot at goal.</i>	N-COUNT
<b>5</b> A <b>shot</b> is a photograph or a particular sequence of pictures in a film. <i>I decided to try for a more natural shot of a fox peering from the bushes... He received praise for the atmospheric monochrome shots in David Lynch's The Elephant Man.</i>	N-COUNT
<b>6</b> If you have a <b>shot at</b> something, you attempt to do it; an informal use. <i>The heavyweight champion will be given a shot at Holyfield's world title.</i>	N-COUNT: usu sing. usu N at n
<b>7</b> A <b>shot</b> of a drug is an injection of it. <i>He administered a shot of Nembutal.</i>	N-COUNT: usu N of n
<b>8</b> A <b>shot</b> of a strong alcoholic drink is a small glass of it; used especially in American English. <i>...a shot of vodka. ...spirits and liqueurs, served in a shot glass.</i>	N-COUNT

Fig. 1

The phenomenon attracts a great deal of academic activity, because it has to be accounted for. Most of the explanations are historical, and show the way word forms can coalesce in time, and meanings can specialise and diverge. Theories of meaning arise,

with concepts such as “core meaning” (Carter [1987]), and scientific experiments are conducted with the aim of providing evidence to support the theories.

Dictionaries, however, also show that the equation “word = unit of meaning”, while reliable in general, has to be qualified in a few cases. Compounds, for example, typically consist of two words, each of which has an independent existence, but together they make a meaning that is different from the normal putting together of their individual meanings. *blackbird* is the usual example; a blackbird is a black bird, but not all black birds are blackbirds. In addition, the bigger dictionaries often include a few paragraphs at the end of the entry where a number of idiomatic phrases are listed, with explanations to show that these also claim a meaning in combination that they do not have in simple concatenation – Fig. 2 gives one from Cobuild [1995]. The low prominence of these features, and the almost total absence of provision for them in the grammar, makes it clear that they are considered as marginal phenomena, almost aberrations, exceptions that prove the rules.

I say “*almost* total absence” because although the traditional parsing and analysis was quite pure in this respect, the business of language teaching has brought into prominence one type of combination in English that is so common it cannot really be ignored. This is the phrasal verb, the verb plus particle that conjures up an unpredictable meaning; the scourge of the learner. The structure does not fit the model, neither semantically nor grammatically, because a single meaning-selection straddles a major structural boundary. As a result, dictionaries for the learner usually make special provision for phrasal verbs, and grammars for learners make apologies for their very existence.

Besides compounds and phrasal verbs we can mention idioms, fixed phrases, variable phrases, clichés, proverbs, and many technical terms and much jargon, as examples of recognised patterns where the independence of the word is compromised in some way. In conventional descriptions of a language, whether lexical or grammatical, they are tucked away, well off-centre. They seem to be anarchic, individual, unstable, one-off items that just do not fit into a tidy description. Unlike phrases and clauses, which fit together in chinese boxes with labelled bracketing, these spill out all over the

place, fit no hierarchical place, and relate in mysterious ways to word meaning.

- 12** If someone or something **gives the game away**, they reveal a secret or reveal their feelings, and this puts them at a disadvantage. *She'd never been to a posh mansion, and was afraid she might give the game away... The faces of the two conspirators gave the game away!* PHRASES  
V inflects
- 13** If you are **new to** a particular **game**, you have not done a particular activity or been in a particular situation before. *Don't forget that she's new to this game and will take a while to complete the task.* v-link PHR
- 14** If a man or woman is **on the game**, he or she is working as a prostitute; an informal British expression. v-link PHR
- 15** If you beat someone **at their own game**, you use the same methods that they have used, but more successfully, so that you gain an advantage over them. *He must anticipate the maneuvers of the other lawyers and beat them at their own game... The police knew that to trap the killer they had to play him at his own game.* PHR after v
- 16** If you say that something is **all part of the game**, you are telling someone not to be surprised or upset by something, because it is a normal part of the situation that they are in. *For investors, risks are part of the game.* v-link PHR
- 17** If you say that someone is **playing games** or **playing silly games**, you are emphasizing your disapproval of the fact that they are not treating a situation seriously and that you are annoyed with them. *This seemed to annoy Professor Steiner. 'Don't play games with me' he thundered... From what I know of him he doesn't play silly games.* V inflects  
PRAGMATICS
- 18** If you say **the game is up**, you mean that someone's secret plans or activities have been revealed and therefore must stop because they cannot succeed. *Some thought they would hold out until Sunday. The realists knew that the game was already up.* V inflects

Fig. 2

Sometimes the criterion given for identifying phrasal verbs, idioms etc. is that the meaning is not the same as the sum of the meaning of the constituent words. Unfortunately that is not a for-

mal criterion – see the discussion in the Introduction to Sinclair, Moon et al. [1989] – and the individual words in an expression can be in all sorts of relationships to the meaning:

- (a) none of the words may appear to contribute directly to the meaning of the expression (*bear on* = be relevant to)
- (b) some may, while others may not (*to beat someone up*)
- (c) each still seems to mean what it normally means (*the rain beats down*).

This last type is usually called a *collocation*, a frequent co-occurrence of words; it does not have a profound effect on the individual meanings of the words, but there is usually at least a slight effect on the meaning, if only to select or confirm the meaning appropriate to the collocation, which may not be the most common meaning. So in “the rain beats down”, the meaning of “beat” is “[to hit] hard, usually several times or continuously for a period” (Cobuild [1995]).

It is thus clear that there are many cases in texts where the independence of the choice of words is compromised, because other patterns cut across them and constrain them. In grammar we are familiar with concord rules, and the predictions of grammatical choices (e.g. that the choice of a transitive verb predicts an object); in this paper the constraints are simply extended to include lexical constraints as well.

Because lexical constraints operate often at the level of word choice, it is possible to use numerical methods to gather and evaluate the evidence without the labour of preprocessing the text. This is very helpful now that electronically held text corpora are increasingly available to researchers (see Acknowledgement) and access to large corpora – over 200 million words – makes the results much clearer because the large range of variation of expression can be penetrated to reveal the underlying regularities.

### *Statistics*

It should be stressed here that the use of numerical methods is normally only the first stage of a linguistic investigation, and this kind of work should be distinguished sharply from the heavy reli-

ance on statistical methods in some styles of linguistic-analytical operations such as parsing or translation.

In gathering and organising corpus evidence, the first focus is on repeated events rather than single occurrences. This initial state does not mean that unique, one-off events are necessarily ignored, but rather that they cannot be evaluated in the absence of an interpretative framework provided by the repeated events.

So a language pattern – however defined – has to occur a minimum of twice. This is a primitive test of significance in itself, in that the exact recurrence of an event is rather unlikely to be an accident, but it is of course not normally a sufficient condition. Ultimately the inherent likelihood of an event has to be related to the frequency of its occurrence in order to determine its linguistic role. In practice, for language, unlike many other areas of research, only events that recur are worth assessing the significance of; no matter how unusual, a single occurrence is unremarkable in the first instance.

This position is consistent with the collection of corpora for their representative quality, rather than the investigation of the meaning and function of any particular text. When a reliable description of the regularities has been assembled, then individual texts can be read against it, and at that time the individual instance will make a balanced impact by comparison with the norms.

At present the only available measure of significance is to compare the frequency of a linguistic event against the likelihood that it has come about by chance (Clear [1993]). Since language is well known to be highly organised, and each new corpus study reveals new patterns of organisation, a relationship to chance is not likely to be very revealing.

### *Open Choice and Idiom*

Complete freedom of choice, then, of a single word is rare. So is complete determination. As in ethics, freedom and determinism are two conflicting principles of organisation which between them produce a rich continuum. I have called their linguistic correlates (Sinclair [1987]) the *open-choice principle* and the *idiom principle*. The preponderance of usage lies between the two. Some features of language patterning tend to favour one, some the other.

Tending towards open choice is what we can dub the *terminological tendency*, which is the tendency for a word to have a fixed meaning in reference to the world, so that anyone wanting to name its referent would have little option but to use it, especially if the relationship works in both directions. Another tendency – almost the opposite – is the natural variation of language, so that very little indeed can be regarded as fixed.

Tending towards idiomaticity is the *phraseological tendency*, where words tend to go together and make meanings by their combinations. Here is collocation, and other features of idiomaticity. Many of these patterns seem almost purely linguistic (like Halliday's [1966] famous *strong tea* and *powerful engine*, where on semantic grounds the adjectives should be interchangeable, but on collocational grounds they are not). The linguistic patterns are of course supported strongly by tendencies in the world at large for objects and events to associate with each other. So, for example, both *door* and *window* have *room* as a significant collocate – here language does little more than correlate with the world, and adds little distinctive pattern, unlike *slammed* with *door* or *seat* with *window*, where collocational selectivity is evident.

Where then is the boundary between a relatively independent item and one with such a strongly determining environment that we are tempted to extend the item boundary and recognise a phrase? One hypothesis, to be explored in this paper, is that the notion of a linguistic item can be extended, at least for English, so that units of meaning are expected to be largely phrasal. Some words would still be chosen according to the open-choice principle, but probably not very many, depending on the kind of discourse. The idea of a word carrying meaning on its own would be relegated to the margins of linguistic interest, in the enumeration of flora and fauna for example.

Part of the supporting argument for this hypothesis is that words cannot remain perpetually independent in their patterning unless they are either very rare or specially protected (for example by being technical terms, if indeed that status offers the protection that is often claimed for it). Otherwise, they begin to retain traces of repeated events in their usage, and expectations of events such as collocations arise. This leads to greater regularity of collocation and



this in turn offers a platform for specialisation of meaning, for example in compounds. Beyond compounds we can see lexical phrases form, phrases which have to be taken as wholes in their contexts for their distinctive meaning to emerge, but which are prone to variation.

It is often pointed out that so-called “fixed phrases” are not in fact fixed; there are very few invariable phrases in English. Nevertheless, in discussions, descriptions and the teaching of languages, the myth of fixedness is perpetuated – as if it was a minor detail that could safely be ignored. However, the argument of the present paper is that this variation gives the phrase its essential flexibility, so that it can fit into the surrounding cotext.

The variation is often systematic, and widespread – i.e. other lexical phrases vary along the same lines. We also look for structure, perhaps of a lexical kind as well as grammatical, so that we can claim that different components of the phrase carry out distinct functions; this “division of labour” is a strong hint of a larger unit of meaning. If the evidence of a very large corpus tends to support this position, then phraseology is due to become central in the description of English.

In considering the corpus data, we shall begin in an area of patterning that on intuitional grounds should be relevant – the area of very frequent collocations, idioms, fixed phrases and the like. If we are to find evidence of extended units of meaning, it is surely there that we should look. A typical idiom in English is built around *naked eye*. Then we will consider a frequent collocation that would not normally be thought of as idiomatic – *true feelings* – to see if the analysis reveals additional constraints. Then we will choose an uncommon word – *brook* as a verb – to study how a single word can be closely integrated into its cotext without setting up anything that might be called an idiom; finally we will sketch out one aspect of the use of the very common word *place* to confirm that the interdependence of meaning and cotext is not confined to the marginalia of language

#### *Naked Eye: outline description*

In life, some things come in pairs – arms, legs, ears, eyes etc., to think only of the human body. This pairing cuts across the regular

relationship of singular and plural in nouns. Normally we can expect the plural of a noun to refer to more than one of whatever the singular refers to, but with pairs the singular is not as often required as the plural. It is therefore available for other functions.

For example, most uses of the form *eye* are not in a singular/plural relationship with *eyes*. The point is made in the Introduction to Sinclair, Clear et al. [1995], where there is shown to be very little overlap between the “top twenty” collocates of these two word forms; *blue* and *brown* collocate only with *eyes*, while *caught* and *mind* collocate only with *eye*, as part of multi-word expressions to do with monitoring, visualising, evaluating.

We shall examine in detail the expression *naked eye*. There is no useful interpretation for this phrase based on the “core” meanings of the two words, e.g. “unclothed organ of sight”, although we can work back from the phrasal meaning, roughly “without (the) aid (of a telescope (or microscope))” and make a metaphorical extension to *naked* which fits the meaning. Notice that, once established, it is dangerously easy to reverse the procedure and assume that the metaphorical extension is obvious. It is not; *naked* in the collocation *naked eye* could equally well mean “unprotected”, “without eyelids”, “without spectacles, contact lenses etc.”, and the collocation *naked eye* could easily mean “shocked” (?they stripped in front of the naked eyes of the watchers) or “provocative espionage device” (?American use of their naked eye spy satellites has caused Iraq to retaliate), or a dozen other metaphorical extensions of the semantic features of the two words involved.

The data analysed for this study comes from The Bank of English, which contained in mid-1995 a total of 211 million words of current English from a wide range of sources. There are 154 instances of *naked eye*, reproduced without editing in Appendix 1. Three pairs of lines are identical, and would normally be removed by the retrieval software on the grounds that they are probably repeats of the same example, leaving 151 different concordance lines. These 151 lines constitute our data.

By inspection of the concordances, it is clear that there is greater consistency of patterning to the left of the collocation than to the right, so we move in our study step by step to the left. There is so much detail to be dealt with in even 151 lines that the main argu-

ment would get hopelessly obscured; hence this study is in two parts. The main argument is set out here with a few illustrative examples, and the discussion of the atypical, odd and wayward instances is returned to in Part 2.

The first position to the left of *naked eye* (designated N-1) is occupied by the word *the*, in 95% of the examples. The deviant examples are explained as the influence of regular features of English – the concord of personal pronouns and the nominalisation of noun phrases. Therefore it is established that *the* is an *inherent* component of the phrase *the naked eye*.

We now turn to position, N-2, immediately to the left of *the*. Two words dominate the pattern – *with* and *to*:

...you can see with the naked eye...  
...just visible to the naked eye...

the other prepositions are *by*, *from*, *as*, *upon* and *than* (though some grammars do not recognise *as* and *than* as prepositions). The total number of prepositions in this position is 136, which is over 90%. The word class preposition is thus an inherent component of the phrase, accounting for over 90% of the cases.

What we have done, in terms of our analysis, is to change our criterion from collocation to *colligation*, the co-occurrence of grammatical choices (Firth [1957]) to account for the greater variation. The pattern observed here is not full colligation, because it is the co-occurrence of a grammatical class (preposition) with a collocating pair, but it is an extremely useful concept at this stage of our investigations.

Roughly 10% of the instances do not have a preposition at N-2. These show what we might consider to be a short form of the phrase, primarily used as the subject or object of a clause, where a preposition would be inappropriate:

...the two form a naked-eye pair...

The short form is found both in general use and in a semi-technical use – see Part 2 for details.

We now consider N-3, and leave on one side the short and technical instances (reducing the total number to 134). It is immediately clear that variations on two words – *see* and *visible* – dominate

the picture.

<i>see</i> 11	<i>seen</i> 14	<i>total</i> 25
<i>visible</i> 48	<i>invisible</i> 16	<i>total</i> 64
N-3 position:		<i>grand total</i> 89

All of these are prominent collocations, restricted to the two word classes verb and adjective. On this occasion colligation, being divided between the two, is not as important as another criterion, that of *semantic preference*. Whatever the word class, whatever the collocation, almost all of the instances with a preposition at N-2 have a word or phrase to do with visibility either at N-3 or nearby. This new criterion is another stage removed from the actual words in the text, just as colligation is one step more abstract than collocation. But it captures more of the patterning than the others.

Having established a criterion of this kind, we seek to maximise it. Even single occurrences of words can be included so long as they have the selected semantic feature, which is what we are counting. So, among the verbs we find *detect*, *spot*, *spotted*, *appear*, *perceived*, *viewed*, *recognised*, *read*, *studied*, *judged* – and the verb *tell*, which is used in a meaning similar to *detect*.

...you cannot tell if...

Other adjectives at N-3 are *apparent*, *evident*, *obvious* and *undetectable*, each having a semantic feature of, roughly, “visibility”.

The criterion of semantic preference implies a loosening of syntactic regimentation, and in turn this means that the strict word-counting on which we have based positional statements is not as appropriate as it was earlier. While the majority of “visibility” indications are to be found at N-3, quite a few are at N-4, and a scattering are even farther away or on the right hand side of the expression. The details are given in Part 2.

At this point we draw attention to a concord rule that has been obscured by the step-by-step presentation, which presents the prepositional choice before the semantic one. This rule is a correlation between the “visibility” choice and the preposition choice, depending on the word class of the semantic preference. Adjectives take *to*, and verbs take *with* in all but a very small number of cases.

We should revise the statement about colligation to say “collocation with the preposition that collocates normally with the chosen verb or adjective in the chosen construction.”

We have one more step to take – to look at the selections to the left of N-3 and see if there is any further regularity that might be incorporated into the phrase that we are studying. We must expect that in many cases the concordance line is not long enough, and in a thorough study we would have to look at extended contexts; if

“visibility+preposition+*the+naked+eye*”

is all one basic lexical choice, then a reasonable context of four or five words on either side would in most cases take us beyond the limit of the printed line. To avoid adducing a great deal of extra evidence, we shall concede at the outset that there are likely to be some indeterminate cases.

It is clear from a superficial glance that there is little or no surface regularity, but closer examination, set out in Part 2, justifies one further element in the structure of a lexical item. We postulate a *semantic prosody* of “difficulty”, which is evident in over 85% of the instances. It may be shown by a word such as *small, faint, weak, difficult* with *see*:

...too faint to be seen with the naked eye...

and *barely, rarely, just* with *visible*:

...it is not really visible to the naked eye...

or by a negative with “visibility” or *invisible* itself; or it may just be hinted at by a modal verb such as *can* or *could*:

...these could be seen with the naked eye from a helicopter...

A semantic prosody (Louw [1993]) is attitudinal, and on the pragmatic side of the semantics/pragmatics continuum. It is thus capable of a wide range of realisation, because in pragmatic expressions the normal semantic values of the words are not necessarily relevant. But once noticed among the variety of expression, it is immediately clear that the semantic prosody has a leading role to play in the integration of an item with its surroundings. It expresses something close to the “function” of the item – it shows how the

rest of the item is to be interpreted functionally. Without it, the string of words just “means” – it is not put to use in a viable communication. So in the example here, the attention to visibility and the strange phrase *the naked eye* are interpreted as expressions of some kind of difficulty (I am told – Tognini-Bonelli, pers. com. – that the literal translation of the phrase in Italian – *a occhio nudo* – has the same semantic trace but does not correlate with a prosody of difficulty).

Having arrived at the semantic prosody, we have probably come close to the boundary of the lexical item. In any case, with only the short lines of data that are made available for this study, we lack the evidence with which to continue the search. However, we have enough already on which to base the description of a compound lexical item. We shall describe its elements in the unreversed sequence, the textual sequence:

The speaker/writer selects a prosody of difficulty applied to a semantic preference of visibility. The semantic preference controls the collocational and colligational patterns, and is divided into verbs, typically *see*, and adjectives, typically *visible*. With *see*, etc., there is a strong colligation with modals, particularly *can*, *could* in the expression of difficulty, and with the preposition *with* to link with the final segment. With *visible* etc., the pattern of collocation is principally with degree adverbs, and the negative morpheme *in-*; the following preposition is *to*. The final component of the item is the *core*, the almost invariable phrase *the naked eye*.

Note that this analysis makes two important observations, which tend to confirm the existence of this compound lexical item:

(a) the beginning of the item is very difficult to detect normally, because it is so variable; on the other hand the end is fixed and obvious. But if the analysis is correct, the whole phrase must be seen as the result of a single choice, with no doubt a number of subsidiary internal choices.

(b) the initial choice of semantic prosody is the functional choice which links meaning to purpose; all subsequent choices within the lexical item relate back to the prosody,

Here, then, is one model of a lexical item consisting of several words, and with a great deal of internal variation. The variation, however, disappears when the description invokes an appropriate

category of abstraction, and despite the variation there is always a clearly preferred selection right down to the actual words. The variations are negligible around the core, and can be explained by the tension between different constructional pressures; further away from the core they become more varied, allowing the phrase to fit in with the previous context, and allowing some more detailed choices to be made.

### *True Feelings*

Seeking confirmation of this model, we turn to a less likely example, a common collocation that would not normally be considered idiomatic – *true feelings*. A dictionary might gloss it as “genuine emotions”, and that would be fairly accurate as far as the semantic side was concerned. But if we study the occurrence of this phrase in the same way as *the naked eye*, we find similar restrictions on the choices. For the sake of space, we will not offer a step-by-step analysis, but summarise the position as follows:

At N-1, immediately before the collocation, there is a strong collocation with a possessive adjective:

...we try to communicate our true feelings to those around us...

If not, then another possessive construction will be found, in particular *the true feelings of...* In 84 cases retrieved from a large corpus, there were 7 of these and one noun in the 's form. Only three examples had no possessive at all.

At N-2 there is a clear semantic preference for “expression” – usually a verb. *Express* itself occurs in one or other of its forms nine times, and *communicate*, *show*, *reveal*, *share*, *pour out*, *give vent to*, *indicate*, *make public*. Occasionally the “expression” element is to be found after the phrase, or on either side, as in *make...perfectly clear*.

At N-3 and beyond there is a semantic prosody that we may label “reluctance”, as in *will never reveal*, *prevents me from expressing*, *careful about expressing*, *less open about showing*, *guilty about expressing* etc. The prosody is sometimes close to “inability”, as in *try to communicate*, *incapable of experiencing*, *unable to share*.

The patterning so far is very similar to *naked eye*. However, in a number of cases we find that the semantic preference and the semantic prosody are fused – like *invisible* above. For *true feelings* the

verbs are such as *conceal, hide, mask, disguise, (?not) giving an inkling of, deny, not be keenly aware of*. Closely related are *acknowledge, betray, admit*.

Our conclusion is that the collocation *true feelings* is the core of a compound lexical item which has the following inherent components:

- a semantic prosody of reluctance-inability
- a semantic preference of expression (and a strong colligation of a verb with the semantic preference).
- a colligating possessive adjective
- the core

So, not only are our true feelings our genuine emotions, but we use this particular collocation when talking about our reluctance to express them, even to ourselves. The collocation is almost never used except as part of this compound lexical item.

This result is remarkably similar to *naked eye*, although the collocations were chosen to be as different as possible.

### *Brook*

Let us seek our next example in an area of the vocabulary where the word is commonly thought to be rather independent of context – the area of infrequent words. We select the word *brook*, and confine ourselves to its use as a verb meaning approximately “tolerate”, ignoring the more common noun *brook* meaning a small stream.

All the evidence from c.200 million words is presented in Appendix 2. Here there is no initial collocation, but a quick examination of the immediate environment of *brook* shows negatives at either N+1 (*no*) or N-1 (*not, n't, cannot*), N-2 (*not, inability*) or N-3 (*not*). This covers all the examples, and so is inherent in the expression. *Brook*, verb, is thus part of a compound lexical item.

At N+2 we find a semantic preference of “intrusion” realised by a strong collocation of *interference* and prominence given to *delay* and *opposition*, and a 100% colligation with nouns. Where N-1 is negative, the emphatic *any* often comes at N+1.

Moving to the left hand side, we come across colligation with modal verbs, mainly expressed by *will* and *would*, supported by ‘ll



and 'd. Sometimes the modality is lexicalised, and we find *determination*, *(in)ability*, *in no mood to*, *vowing to*. Only three instances have no modal; one is a general statement:

...Artemis-type women brook no nonsense from their menfolk...

one is contemporary:

...Eritrea's rulers brook no interference from...

and one is just odd:

...they brook no brickbats...

The case is made for modal colligation as an inherent component of the compound item.

Moving further to the left, we find a semantic prosody that is difficult to express. It partly concerns the absence of something (in this case first and second person subjects), and partly includes words like *said*, *make/made clear*, *shows*, *indication*. In all the instances except one, the "brooking" is one stage removed as something reported of someone else, and the phrase includes a threat of retaliation or even punishment. The person who refuses to brook intrusion is an authority figure – a President, a country, Mother and Father, teachers, the army, the Tigers (a Tamil separatist group in Sri Lanka). The prosody can be crudely expressed by "reported threat by authority", and it is pretty clear in most of the cases even in the line as printed. The one instance of a first person subject makes the threat element clear, and the assumption of authority:

...Warn them that, on this one, we'll brook no interference...

The usual semantic gloss on *brook* as a verb is "tolerate", and, as far as it goes, this is true. "Tolerate" can replace *brook* in all the examples without disturbing their message. But *brook* is always negative; it expresses intolerance, not tolerance; the intolerance is of intrusive behaviour by another.

There is an inherent component of future modality in the expression, which shows that the possible intrusions are into plans or policies, and that the expression is a threat or warning. The displacement by report of the threat, and the frequent naming of authority figures as subject of *brook*, complete the expression of a semantic prosody.

There is another, rather elusive element of the prosody that we have not so far reconciled with the data. This phrase is emotionally charged with the commitment of the threatener to carry out the threat. Some of it may be in the words chosen as objects, especially where the negative comes in front of *brook* – *petulant isolation, challenge, protests, criticisms, defeat, contradiction* and *treachery*. In the other cases – the majority – the emotional charge is in the position of the negative, governing the noun rather than the verb. Compare:

I will not make any promises  
I will make no promises

(constructed examples)

Both rhythmically and structurally, the second seems to carry a great deal of emotional commitment, while the first is almost tentative.

This example illustrates the reason for the choice of the term *prosody*. The precise extent of the prosody, and the nature of its realisation, cannot be determined in advance; and once it is identified with a phrasing it will be part of the meaning even if it has no clear expression. For example Artemis-type women must be interpreted as dominating in order to fit the prosody; the appointment which would brook no delay must be a very important one for the person concerned, etc.

Here, then, in the case of a single infrequent verb, is to be found a very similar pattern to those we have seen of collocations.

### *Place*

For one final brief example we will turn to the frequent end of the vocabulary. *Place* is one of the commonest words in English, and has 50 paragraphs in the Cobuild Dictionary [1995], some of which present several senses. Sense 13 is – in informal English – where someone is living or staying, and the phrasing of the definition “Your *place* is the house or flat where you live; an informal use” already signals two important points. One is the possessive *your* and the other is the informality of the expression.

To illustrate the structure of this item in a short space, I shall

use only one of the most typical versions of it. In principle, any possessive could colligate with *place*, but *my* is very common at N-1 and I shall consider only this. At N-2 we find a preposition, with a strong collocation for *to*. At N-3 there is very often another colligation, with an adverb of place, *back, home, over, round, up, down*, and combinations such as *back home*. The directional meanings of these words is barely relevant, since they all mean the same thing, and they seem mainly to contribute to a prosody of “informality”. When there is no adverb, there is usually a verb of travel – a form of *come* is a strong collocation, and *go, walk, bring, make it, take*. Where there is an adverb, the verb is found in front of it. There is a clear semantic preference for the expression of travel.

The verb *invite*, which occurs occasionally, gives expression to an important semantic prosody – in this case not the only possible use of *place* with the meaning “home”, but a typical one. Clear invitations are common:

...Would you like to come back to my place for a while...

(NB the person invited might not have been there before, and so is not going back)

and so are references to invitations, e.g.

...if she was coming to my place I would check...

or quasi-invitations:

...I decided to take him to my place to sleep it off...

or indications of easy social informality:

...She came over to my place with a friend...

To conclude, then, we have strong evidence for a compound lexical item which has a semantic prosody “informal invitation”, a semantic preference for “local travel” which is realised by colligation of a verb of movement and optionally a directional adverb, with *come* and *over* as typical collocations. A strong colligation with a preposition (collocate: *to*) and a possessive (collocate: *my*) precede the single word core, *place*.

### Conclusion

The case for compound lexical items will be made by piling up

evidence of the kind illustrated in this paper, and apparently pervading much of the vocabulary. So strong are the co-occurrence tendencies of words, word classes, meanings and attitudes that we must widen our horizons and expect the units of meaning to be much more extensive and varied than is seen in a single word.

In the early days of the study of lexis (e.g. Sinclair [1966]) there was provision made for the likelihood that the word and the lexical item would not always coincide. However, the state of computing thirty years ago would not allow a more sophisticated measure than the word. Now the position is different – the early studies have established that there is a considerable amount of co-selection among words that co-occur, and the present state of corpus linguistics makes it feasible to investigate the phenomenon over large volumes of evidence.

A great deal of the patterning reported here is readily computable, and most of the rest will probably yield in time to heuristic procedure. A start can be made on an inventory of the units of meaning of English.

If the model of a lexical item offered in this paper turns out to be the only one, and the computational search is successful, then a text will be analysed into a string of units, each statistically independent of those on either side. The major structural categories that have been proposed here – collocation, colligation, semantic preference and semantic prosody – and their inter-relationships, will be elaborated and will assume a central rather than a peripheral role in language description.

The impact that this perspective on language will have on conventional phrase, clause and sentence grammar may be considerable. There is clearly a shared set of descriptors with grammar in the internal structure of the item – negatives, modals, possessives etc. It is to be expected from the evidence presented above that elements of the internal structure will recur many times, and this position is supported by much ongoing research. Both externally and internally, we might end up with a potentially very simple lexicogrammar.

It should be noted that this model does not exclude single words that are apparently chosen on open-choice principles and do not make collocational etc. patterns, nor appear among semantic pref-

erences – words that leave no trace of their use. Even such words do not need another model – they are examples of the limiting case of the lexical item proposed here.

It is of course likely that this lexical item is only one of several. One possibility is a type of item based on a grammatical core rather than a lexical one. “Collocational frameworks” were proposed by Renouf and Sinclair [1991] and need further study. In these the core is one or more frequent grammatical words, usually discontinuous, like *the...of*.

Models that arise from corpus-driven studies, like the one proposed here, have a holistic quality that makes them attractive. The numerical analysis of language is aligned closely with the meaningful analysis; lexis and grammar are hardly distinguished, surface and abstract categories are mixed without difficulty. As a result some of the problems of conventional description are much reduced – for example there will be little word-based ambiguity left when this model has been applied thoroughly. Although a great deal of research has to be done to find the units and make the description coherent, the gain for students and users of language should be well worth the effort.

## PART 2: NAKED EYE: DETAIL

Here is a more detailed account of the structure of the *naked eye* item, following up most of the minor variations. It is a central part of the methodology at this stage that every instance has the same weight as any other, and that selection is on the basis of the number of instances of a certain kind. No instance is ignored or overlooked; however, in exposition, the discussion of detail can obscure the main force of an argument.

In this paper the detailed analysis of *naked eye* is presented here; for reasons of space the detailed analysis of the other studies is omitted

### *Position N-1*

The first position to the left, as already mentioned, is nearly always occupied by the word *the*. There are eight exceptions: *your*(2),

*our, a, to*(3); in one example the phrase is surrounded by typographical tags indicating that it is the title of an article, and we omit this one because it gives no useful evidence.

The cases of possessive adjectives illustrate a latent tension in the phraseology:

...anything you can see with your naked eye...  
 ...you could see it with your naked eye...  
 ...that we can't even see with our naked eye...

The subject pronouns *you* and *we* set up an expectation of concord, which cuts across the strong requirement of *the* as a component of the phrase. In the above cases, which are from informal spoken sources, the concord rule has won; in other examples (the majority) the decision goes the other way.

The example with *a* instead of *the* has *naked eye* in a noun-modifying position – *a naked-eye pair* – and this is supported by another example, not part of this data but collected from a similar source:

...A Naked-Eye Supernova...

This usage suggests a technical use of the phrase *naked eye*, where it refers to a precise measure of luminosity. Used as a modifier in a nominalisation, it has no article. In the three instances of *to naked eye* the same structure occurs, and the phrase modifies *visibility*, *brilliance* and *observation*. In some of these examples the phrase is hyphenated.

#### *Position N-2*

We now turn to the position immediately to the left of *the*. Apart from *with*(47) and *to*(77), there are 17 other prepositions, and 10 other words which we will deal with in turn. The variation is greater than that of N-1, but the two main collocations are strong, constituting the great majority of the instances. We can refine the figures as follows:

(a) we remove from the total the examples already identified as nominalisations, since their structural environment cannot be expected to conform to the main patterning; note however that two of them:

...flared to naked eye visibility...  
 ...flared up to naked-eye brilliance...

already suggest another regularity within the technical use of the phrase. We thus remove four instances, leaving 146. In the other deviant examples at N-1 the choice is of possessive, and therefore the surrounding structure is not affected; so we retain these.

(b) we introduce *colligation*, the co-occurrence of grammatical choices. As well as *with* and *to*, the other prepositions are *by*, *from*, *as*, *upon* and *than* (though some grammars do not recognise *as* and *than* as prepositions). The total number of prepositions in this position is 136, which is over 90%.

The seven instances of *by* show tension between the general grammatical rule for the formation of the passive and the collocational “pull” of the phrase. All the examples are passive, and the agent phrase of the English passive is normally introduced by *by*. This conflicts with the otherwise dominant use of *with* after verbs and in these seven cases the general rule holds, though in the majority of the instances it does not.

*From* is used twice, in both cases revealing another phraseological tension:

...signs hidden from the naked eye...  
 ...it was clear, both from the naked eye and re-runs, that...

The verb *hide* takes *from* as its normal preposition, especially in the form *hidden* – \**hidden to the eye* would sound very odd. The other example couples *the naked eye* with *re-runs*, using *both...and*, thus getting into difficulties, since *to* will not go with *re-runs* in this context, and *from* is not one of the collocating prepositions in our phrase.

The single instance of *as*, and one of the two with *than* are of a technical nature, because of the assumption of a previously known measure of luminosity. The other instance of *than*

...using nothing more than the naked eye...

is a good example of the phrase in its minimal form. Here the impersonality of *the* gives it the general reference that is associated with it.

There are ten instances remaining, where the word at N-1 is not

a preposition. Of these, nine are similar to the one just quoted, where *the naked eye* means approximately “anyone using their unaided sight”. In one of these cases there is a blend of two idiomatic expressions with *eye*, similar to *hidden from*, discussed above:

...far beyond what meets the naked eye...

*Meets the eye* has an independent existence.

The example with *that* at N-2 is strange, but shows the phrase as a noun modifier, similar to the technical use.

The one remaining instance is a title, shown by the initial capital letters.

### *Position N-3*

In Part 1 we identified 104 instances of the semantic preference of “visibility”. To complete the picture we omit the short forms and technical uses, (though some of them show this semantic preference) and concentrate on the 28 lines unaccounted for.

When we move from physical evidence (collocation) to structural (colligation) to semantic criteria, we must expect less regimentation of position, and more variation generally. Also each step backwards in the concordances has itself introduced some variety of expression – hardly any at N-1, a little more at N-2 and quite a lot at N-3. Each variation has the potential of introducing further variation in its vicinity.

If we collect the instances with *it* at N-3 we usually find a verb of visibility at N-4. *See* occurs three times in this position, also *view*. *See* also has *ourselves* at N-3. Sometimes N-4 is the preposition *at*, and the verb at N-5 is a form of *look*. Once we find the adjective *indistinguishable* at N-5. So the semantic prosody is present, but slightly displaced from its commonest position.

In another 18 instances the word at N-3 is not closely related to the phrase we are studying, and the structure has displaced the “visibility” expression even farther to the left (13 cases), and sometimes even to the right of the rest of the phrase (5). Typical examples are:

...they look like stars to the naked eye...

...appear like a thin line to the naked eye...

...To the naked eye there was no trace of any...



In three cases the visibility expression is beyond the end of the concordance line as printed, but they have been included in this category for the sake of simplicity.

Thus in 133 lines out of 134 we can claim that a semantic preference for an expression of visibility is an inherent component of the phrase; usually a verb or adjective, usually at N-3, and frequently a form of *see* or *visible*.

One instance remains:

...To the naked eye he is easily one of the fittest...

There is no realisation here of the visibility expression and it has to be inferred. The construction *To the...eye* is commonly used, and many other adjectives could occur in it. This instance is probably closest to the short form of the phrase, and we can now identify an element of the relation between the short form and the full form. The short form implies visibility but does not express it; it is therefore semantically dependent on the full form.

#### *Position N-4*

We can build up the notion of difficulty by studying the first few lines of the concordance line by line. The first instance is:

...too small to see with the naked eye...

Are there any more, suggesting difficulty of visibility? The second instance is:

...that can be seen with the naked eye (very few of these)...

The word *can* weakly indicates overcoming a difficulty. The third instance is similar. The fourth is indeterminate, but one can reasonably infer that viewing the moon without a telescope is not very rewarding. Number 5 has *could*, no 6 *not really*, and no 7 *cannot always be perceived*. These are all instances of a *semantic prosody* of “difficulty”. This may just be hinted at by a modal verb such as *can* or *could*, or more directly by a negative with “visibility” (of which we already have recorded 16 examples of *invisible*), or by some other means.

Clear lexical expressions of difficulty are given in 22 cases of words like *small* with *see*. Then there are 15 negatives. Another 14 express the opposite of difficulty in this context – *so big, entirely obvi-*

*ous, bright, clearly visible, etc.*, and these are included because they state or imply that this ease of visibility is unusual. For example:

...It's so big you can see it with the naked eye...

This makes a total of 51. Then there are 15 instances of *can* or *could* without a negative and with *see* or a similar verb. Sometimes the implication of difficulty is clear even in this brief context:

...5mm wide, but you can see it with the naked eye...

It is normal in English to use a modal verb, usually *can*, with a verb of physical perception instead of the simple present tense. The incidence of *can see* etc., is thus unremarkable. But in turn it may be argued that people are only likely to report on what they can see or hear when there is some doubt or difficulty, in which case the normal usage supports our interpretation here. So, while the high incidence of modals suggests a small secondary organisation around the verb *see*, the instances can be counted as at least consistent with the "difficulty" prosody.

The remaining examples require interpretation, because there is no clear expression of difficulty on the surface. Nevertheless, in all but a dozen cases, it is fairly obvious that observation with the naked eye is considered inadequate or problematic, especially when contrasted with some other means of observation. A few examples:

...A man's face may look smooth to the naked eye. But magnified, it...

...We see, with the naked eye now it is so close...

...the first to be seen with the naked eye for 400 years...

...a star cluster that, to the naked eye, looks like a faint frosting...

...us to see thousands of stars with the naked eye, and millions with an optical...

In my reading, there are 35 of these, which added to the rest gives a total of 103 instances that either express the prosody of difficulty or are likely to be understood as invoking it, as against 12 which could be interpreted without it, for example:

...Jupiter and Saturn are visible to the naked eye...

Although there is an implied contrast with other objects that are not visible to the naked eye, this example is close to the technical use and records the visibility without raising questions of difficulty.

Of course, we have artificially restricted ourselves to a very small context, and several of these cases may give evidence of the prosody nearby; but we have no reason to believe that the prosody cannot be neutralised or reduced substantially in impact by other choices in the vicinity.

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This paper owes a lot to having been tried out in various forms on a number of occasions over the past two years. Early versions were offered to a seminar on Phraseology at the University of Leeds in April 1994, and at a talk in the University of Vienna in June 1994. The example of *brook* is one that I introduced at a Cobuild workshop, where it turned out to be a most economical example of the interconnections between word and context. See also Susan Hunston's notes in Hunston [1995].

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## APPENDIX 1

< agents too small to see with the naked eye, and so they much preferred the  
 < Binaries that can be seen with the naked eye (very few of these) or through >  
 <our galaxy that you can see with the naked eye. Now to expand our horizons:The  
 < is like viewing the moon with the naked eye. You see a disk with some >  
 < of thing you could look at with the naked eye. <t> <CQ1> Would you like to >  
 < it is not really visible to the naked eye. <t> About five years ago, a >  
 < cannot always be perceived by the naked eye and said,<CQ1> As I've gotten >  
 even though nothing is visible to the naked eye. We should trust our patients >  
 < the opening is not visible to the naked eye. Typically, the closed >  
 photoaging changes are visible to the naked eye. <t> And even more disturbing >  
 little rooftop house. Viewed with the naked eye, she was nothing more than a >  
 < is <FCH> visible <FCH> with the naked eye. <t> While stroke path can be >  
 outlets. These could be seen with the naked eye from a helicopter, and the water  
 < human ovum is barely visible to the naked eye. The corpus luteum forms in the  
 < small, it can easily be seen by the naked eye. <t> The time of ovulation in >  
 < is large enough to be seen by the naked eye. The ovary still contains the >  
 <the surveyor's map. Invisible to the naked eye beneath a shroud of poison ivy,  
 < to iris borer. Invisible to the naked eye, the young borers work their >  
 < plants that you can see with the naked eye just as much as those for which  
 < is almost invisible to the naked eye. For, as his newly curvaceous >  
 <by many besides those visible to the naked eye \ People from varied stations >  
 <which Parsons could not see with the naked eye&#321;with Parsons'only >  
 < a strip of water so wide the naked eye can barely see the far shore # >  
 < passage among them, visible to the naked eye.Time to settle down for a >  
 < muted one could look at it with the naked eye. The air smelled of summer's >  
 <like a wiggling speck of dust to the naked eye, like nothing more than dining >  
 < from the deck of his ship with the naked eye, these are very faint aren't >  
 < becomes immediately apparent to the naked eye.The opening of each envelope is  
 <is the first supernova seen with the naked eye for nearly 400 years # The last  
 < was the first to be seen with the naked eye for 400 years and is relatively  
 < was the first to be seen with the naked eye for 400 years and is relatively  
 < and sewage clearly visible to the naked eye. And the sewage is not only bad  
 < to earth to be visible with the naked eye. That was almost four years >  
 bright comet which was visible to the naked eye and passed extremely close to >  
 than the faintest star visible to the naked eye on a dark night.The fourth >  
 bright comet which was visible to the naked eye and passed extremely close to >  
 < anything you can see with your naked eye, probably has adequate amino >  
 < distant objects invisible to the naked eye # These were picked up by the >  
 < at it directly, not even with the naked eye.Never ever put your eye to a >  
 < at it directly, not even with the naked eye.Never ever put your eye to a >  
 <in 1963, they look like stars to the naked eye, but closer examination of the >  
 <blood and matter were visible to the naked eye.<t> Dabs?" Thorne queried.<t> >  
 the view or carry out repairs. To the naked eye there was no trace of any >  
 < rubber and quite invisible to the naked eye unless you were crouching down >  
 <going on that you can't see with the naked eye. Nature is secretive, Matt. >  
 < the two was nearly visible to the naked eye. Finally, they stood face-to- >  
 was a transformation invisible to the naked eye, and certainly unbeknown to >  
 record what we see ourselves with the naked eye. If identical objects are at >  
 < of making themselves visible to the naked eye <KUA> eventually # <SC> But it' >  
 < they are rarely visible with the naked eye, which is why many experts >  
 <FCH> ceques <FCH> now visible to the naked eye only as the alignment of Inca >  
 < if the lights were invisible to the naked eye. Other regions <FCH> 127 <t> >  
 scarlet of Zanzibar. We see, with the naked eye now it is so close, European >  
 <carcinoma can be recognized with the naked eye. It comes away in fragments >

flat warts are often invisible to the naked eye, but are detected with a >  
cannot tell by looking at it with the naked eye whether you are clear or not. >  
< <FCH> <t> <FCH> Yes, and to the naked eye the liquid produced will appear >  
< on a level that is invisible to the naked eye. SHIELDS Your circle might want >  
< it. The worms cannot be seen by the naked eye. Horses grazing the paddock >  
< dust particles (those visible to the naked eye), but are sufficiently loose to >  
Double Cluster. Easily visible to the naked eye, these two clusters lie more >  
< of Desert Rats, invisible to the naked eye, could be seen clearly and in >  
< 13 years and will be visible to the naked eye all week (it'll be by far the >  
< a machine," mcghee remarked. 'To the naked eye he is easily one of the fittest >  
so small they cannot be seen with the naked eye. I asked the curator which was >  
< that we can't even see with our naked eye. But I'm just saying that the >  
< eye. But I'm just saying that the naked eye kind of things are fun. <LTH> >  
< look weak and sun-bleached to the naked eye. <LTH> Backlighting sometimes >  
< too small to see with the naked eye, known as Quorn. A relation of >  
< its effects cannot be seen by the naked eye. <LTH> For a better >  
< than red, are just visible to the naked eye and feed mainly under the >  
< and can be almost invisible to the naked eye. On an ideal scalp, the >  
< lines and are fairly visible to the naked eye. Especially common in pregnant >  
< deterioration is invisible to the naked eye, the condom no longer offers >  
< most closely equates with what the naked eye naturally sees, I find this >  
< variation on Damon Blur to the naked eye, giggles disbelievingly at this >  
< mites are too small to see with the naked eye. <LTH> The answer is to spray >  
< that inspection of the film with the naked eye failed to spot any visual >  
< former is easier to detect with the naked eye than in the latter. The >  
manifesto <LTH> <LHH> ART <LTH> <LHH> Naked eye <LTH> Limp cocks and sagging >  
< of mould spores undetectable to the naked eye # a time bomb or respiratory >  
< in lettering barely visible to the naked eye. He witters on about how rising >  
< individual pixels visible to the naked eye. <LTH> Q I want to record my >  
< currently producing a programme-The Naked Eye-looking at the human life >  
< difficult to spot a fault with the naked eye. <LTH> But a look at Jose Maria' >  
< inch, appear like a thin line to the naked eye. <t> Kasell: Changes will be >  
the mines using nothing more than the naked eye # When asked about the year >  
< go up # You could see it with your naked eye. <t> Chadwick: Yeah. <t> Wells: >  
< the tires that aren't visible to the naked eye # You have to take this to the >  
< small and difficult to spot with the naked eye, but others should be clearly >  
< with the neighborhood and using the naked eye to compare them with existing >  
< So it's kind of a fight because the naked eye and the viewer sees things >  
< itself far beyond what meets the naked eye # Now # remember, now, this >  
< bacterium ever--it's visible to the naked eye. <t> ADAMS: And the ups and >  
< It's so big you can see it with the naked eye # NPR's Richard Harris has more. >  
< a hot dog, so it's visible to the naked eye # Now, according to conventional >  
something that you don't see with the naked eye # Unless you're involved, you >  
< I E it is only just visible to the naked eye. It exists in a petri dish full >  
< with a curved front which to the naked eye looked flat. <MO1> And that was >  
< summer, and still not visible to the naked eye. No wonder the chorus of >  
< times too faint to be seen with the naked eye, and would be difficult to >  
< and all have to be judged by the naked eye on a crucial split-second of >  
< late tackle from Ablett. To the naked eye it looked a questionable >  
distant object readily visible to the naked eye. On a dark, moonless night it >  
< 1992 </dt> <t> INVISIBLE to the naked eye and floating 12 miles above the >  
< incidents are clearly visible to the naked eye. <t> And for match referee Bob >  
< when it was clear, both from the naked eye and re-runs, that he never made >  
< A man's face may look smooth to the naked eye. But magnified, it resembles >  
< of the ecosystem. But using the naked eye to count the devilish-looking >  
But this molecule is invisible to the naked eye because it is only 20 angstroms

<hat of all. You cannot tell with the naked eye if the crown is on back-to- >  
Regulus on the 22nd as the two form a naked-eye pair low in the W evening sky, >  
marks supposed to be invisible to the naked eye which have been put into the >  
< stars we dub Orion's Sword. The naked eye often perceives the Sword as >  
< to be seen since SN 1987a flared to naked eye visibility in the large >  
<has not been entirely obvious to the naked eye. The best clues he has given to >  
< hemisphere was visible to the naked eye # the first such since the >  
Jupiter and Saturn are visible to the naked eye, and have been known since pre->  
than the faintest star visible to the naked eye. Observations began again in >  
<arc, 30 000 times as accurate as the naked eye. The less accurate Tycho >  
< which is frequently visible to the naked eye and can form up to 30 per cent >  
< was, could have been visible to the naked eye. The striking appearance of the >  
still 15 to 20 times fainter than the naked eye can see.<LTH> During August, >  
< red light than can be seen with the naked eye.<LTH> In August, Richard Ellis >  
< the faintest stars visible with the naked eye. Even with their CCD detectors, >  
<fainter than anything visible to the naked eye.<LTH> Smette recorded 10 >  
< for the particular oil, but to the naked eye the graphs appear to be >  
us to see thousands of stars with the naked eye, and millions with an optical >  
< Nova Cygni, could be seen with the naked eye. Today it is barely visible, >  
< The last supernova visible to the naked eye was seen in 1604, long before >  
only was the supernova visible to the naked eye, but its radiations could be >  
In 1600, an obscure star flared up to naked-eye brilliance, then faded: we now >  
<4.2, making it easily visible to the naked eye in dark areas. Novas are >  
< star that can be seen with the naked eye. But, they say, it could reach >  
< of anatomy as studied with the naked eye had progressed as far as it >  
< was the first to be visible to the naked eye since 1604. Then on 28 March >  
< star that can just be seen by the naked eye. It looked brighter than all >  
is just large enough to read with the naked eye, and positioned near the hole >  
<constellation as we view it with the naked eye. Loop III contains no brilliant >  
< much too small to be visible to the naked eye. They are created by suspending >  
< indistinguishable from it with the naked-eye observations available at the >  
dimmer than any object visible to the naked eye.<p> In 1987, another group of >  
< in the night sky visible to the naked eye in his book Sky Phenomena: A >  
in his book Sky Phenomena: A Guide to Naked Eye Observation of the Stars ( >  
<saw stars that were invisible to the naked eye. By watching sunspots # there >  
<their dimness none is visible to the naked eye, even though most of the stars >  
<first supernova to be visible to the naked eye since the German astronomer >  
< seen in a star cluster that, to the naked eye, looks like a faint frosting on >  
< sticks to can be spotted with the naked eye, and fished out with tiny >  
<flakes of settled snow appear to the naked eye. If it is not homogeneous, and >  
< reality' by improving upon the naked eye; and unlike virtual reality, it >  
< Australians than is evident to the naked eye are refusing to be coerced into >  
light to detect signs hidden from the naked eye, different chemicals and fuming >  
5mm wide, but you can see it with the naked eye # said Dr Hoggett # That is >

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## APPENDIX 2

<again shown its determination not to brook any challenge to its authority. It >  
 about the ANC, about its inability to brook any criticism or opposition. Like >  
 <another indication that SLORC cannot brook any objections or protests against >  
 < authenticity?Anthea: It doesn't brook any messing around. There is no >  
 President Assad will be in no mood to brook any more. Treachery, however >  
 < s absolutely useless. We will not brook any decision by any court from >  
 the Government honest and we will not brook any attack on his independence. >  
 <unenthusiastic for Delorism,will not brook Britain's petulant isolation from >  
 <become a state of mind that does not brook contradiction. Yet a few modest >  
 <armed with an attitude that will not brook defeat. The opening scene of the >  
 < country's crisis was too urgent to brook delay.<t> But this is a symptom of >  
 < of mediocre academics who don't brook disagreement with their world view. >  
 <pounds 15 billion) a year and do not brook dissent even from governments.<t> >  
 < put upon", but did not readily brook interference # <SD> His # Ere, who >  
 < the proud Cleopatra would not brook. Learning of his plans, she >  
 <judicial inconsistencies which would brook little argument even from those in >  
 < for school. Mother and father would brook no more of Malcolm's (or Rose's) >  
 <enemies within Germany that he would brook no opposition. Calling upon his >  
 minded determination of the Tigers to brook no opposition in the Tamil areas of >  
 < Yitzhak Shamir has said Israel will brook no interference in the affairs of >  
 < has repeatedly said it will brook no interference in what it >  
 < Yitzhak Shamir has said Israel will brook no interference concerning the >  
 < do it <FCH> at once <FCH> She would brook no argument or opposition and on >  
 a leap. But Fisher's determination to brook no opposition meant that defective >  
 and those influenced by its rays will brook no denial in seizing their >  
 < needs or wants. Artemis-type women brook no nonsense from their menfolk, as >  
 and intolerant teachers, as they will brook no mispronunciation or mis-accent, >  
 <anger in her companion's veins would brook no control, and Sarah Ellis had >  
 < thin enough to make it clear they'd brook no interference, and his jaw was >  
 < Warn them that, on this one, we'll brook no interference. And if, by some >  
 had an urgent appointment which would brook no delay.<t> HMS <FCH> Ilara <FCH> >  
 of action for herself, one that would brook no interference.<t> Pallas and Hart >  
 < of the country. And the army will brook no weakening of its power. In 1988, >  
 fantastic. They fear no mocking, they brook no brickbats and from the moment >  
 insistent about the # tasks that will brook no delay # but there is a need for >  
 < it was a sovereign state, and would brook no interference in its internal >  
 <summer, and made clear that he would brook no dissent from the ERM line. >  
 < a pistol, and Epstein himself would brook no opposition. He once ordered >  
 most whiskers, and he will definitely brook no lip from anyone. <t> Moscow >  
 avoid the terrifying Hackman who will brook no vigilantes in his town and >  
 < prove inadequate,the minister would brook no criticism of the Government's >  
 Tibet was in its isolation # He would brook no delay, calling for informal free >  
 <of the motherland # The peoples will brook no interference # warned another >  
 <laughter. Meanwhile,Eritrea's rulers brook no interference from their de jure >  
 < Francois Mitterrand, vowing to brook no interference from France's >  
 < left in the care of those who would brook no contradiction, feminism became >  
 < or what have you) and they will brook no delay.<p> This feat has never >  
 < has made it plain that he will not brook obstruction of his 'reconstruction' >  
 <again, it was in a voice that didn't brook resistance. You just told me that >  
 Department. The Constitution does not brook riddles, solved or unsolved. </t> >  
 < most likely, that she did not brook self-indulgence, laziness, or >  
 < that society would not always brook such nonsense. They had only to >  
 < out-that Mrs. Thatcher would not brook the thought of a husband and wife >