Dispensa: *Basic concepts in syntactic analysis*

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A.   Clause structure

A1.   *Constituent structure and the immediate constituents of clauses*
                Within clause structure strings of more than one word can be seen to function as units. Indeed, they are interchangeable with single words:
1a.   [The man in the large grey hat] entered the bar.
1b.   [The boy identified by the police] entered the bar.
1c.   [Tom] entered the bar.
1d.   [He] entered the bar.
All the bracketed elements above, whether they contain a single word or a string of words, are interchangeable: any of them may occur in the position (or syntactic `slot') preceding the verb without there being any difference in the grammatical acceptability or well-formedness of the resulting clauses:
1e.   [The man in the large grey hat]
            [The boy identified by the police]
            [Tom]   entered the bar
            [He]
All the combinations illustrated in (1e) are equally well-formed: it is not possible to accept one and reject another. It follows that the bracketed elements are all in some way **syntactically equivalent**, i.e. they are all tokens of the same abstract structure. Notice that the single-word elements, if used in place of the complex strings, must replace the whole bracketed string. Structures where they replace only a part of the original string are ungrammatical:
1a'.   *[Tom in the large grey hat] entered the bar[1].
1b'.   *[He identified by the police] entered the bar.
A further indication of the syntactic equivalence of the bracketed elements comes from the fact that we may select any two of them and unite them through coordination:
1f.   [He] and [Tom] entered the bar
1g.   [Tom] and [the man in the large grey hat] entered the bar.
1h.   [The man in the large grey hat] and [the boy identified by the police] entered the bar.

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[1] The asterisk at the beginning of a structure indicates that the structure in question is not well-formed syntactically.

It is assumed that only syntactically equivalent elements may be coordinated: (1g) shows that the simple element *Tom* and the complex string *the man in the large grey hat* give syntactically well-formed results when coordinated.

Returning now to the original set of examples (1a)-(1e), since the abstract structure represented by the bracketed elements can be realised by complex strings, it clearly cannot be identified directly with any single lexical element; instead we will recognise its inherent syntactic complexity by referring to it as a `syntagmatic' or `phrasal' element:

1i.   [SYNTAGMA/PHRASE.........] entered the bar

We will assume that in all our original examples, (1a) - (1e), the bracketed element is a phrasal or syntagmatic element of this sort, even in cases where it is realised by a single element. In other words, having used the argument based on replaceability by a single word to show the unity of complex strings such as *the man in the large grey hat*, we will now turn the argument on its head and say the following: since in (1a) and (1b) we have a syntactically complex element (i.e. a phrasal or syntagmatic category), we also have one in (1c) and (1d), despite the apparent lack of complexity in the latter cases; the only difference between the two sets of cases is that in (1c) and (1d), the abstract phrasal (or syntagmatic) category is given its simplest possible realisation. On this view, then, in (1c) and (1d) we have a phrasal category containing a single word:

1c'.   [PHRASE...Tom....] entered the bar
1d'.   [PHRASE...he ....] entered the bar

whereas in (1a) and (1b) we have examples where the phrasal category's inherent syntactic complexity - its inherent potential for hosting a complex combination of elements and conferring syntactic unity on them - is exploited more fully (or, one might say, non-vacuously). We may represent the parallelism between the two sets of cases as follows (XP represents the phrasal category or abstract syntactic unit):

                    XP   XP

            the man in the...hat   Tom

Although not directly identifiable with any lexical element on account of its syntactic complexity, the (phrasal or syntagmatic) category identified in (1f) is obviously closely connected with the lexical category N (noun, *sostantivo*). Indeed, in cases where it is given its simplest possible realisation we find a single noun (common or proper) or a pronoun. Thus in addition to (1c) and (1d), we find:

1j.   [Smoke] entered the bar
1j'.   [XP...Smoke...] entered the bar
1k.   [Shouts] entered the bar
1k'.   [XP...Shouts...] entered the bar

Given this transparent relation with the lexical category N (to which the single element obligatory in the simplest realisation of the XP must belong), the

phrasal category in question will be termed a Noun Phrase or NP (*SN - sintagma nominale*).

Turning now to the question of how to analyse the remaining parts of our original examples, the same tests (substitution, coordination) may be used to show that the string of elements following what we have now identified as the NP is also to be considered a constituent:

2a.   [NP Tom] entered the bar.

2b.   [NP Tom] departed.

Comparison of (2a) & (2b) shows that in the position immediately following the NP we may have either a complex string *entered the bar* or a single word *departed*. Once again the fact that these two are interchangeable suggests that they are **syntactically equivalent** and therefore that the complex element is to be considered a syntactic unit (i.e. a phrasal or syntagmatic category). This is confirmed by the fact that both the single word and the complex unit may be replaced by the same replacement element (or `proform') *do so*:

2c.   [Tom] [entered the bar] and [Richard] [did so], too.

2d.   [Tom] [departed] and [Richard] [did so], too.

And by the fact that the one may coordinate with the other:

2e.   Tom [[cleaned the car] and [mowed the lawn]].

2f.   Tom [[cleaned the car] and [departed]].

It follows then that in the structure of clauses the first phrasal category - the NP - is accompanied by another (which we represent for the moment as ZP):

S

NP   ZP

Given that in its simplest realisation (represented by (2b)), ZP contains a representative of the lexical class V (verb), we conclude that the second phrasal category is a Verb Phrase or VP (*SV - sintagma verbale*). In other words, our original examples are to be analysed as follows:

[NP Tom] [VP entered the bar]

[NP Tom] [VP departed]

[NP Tom] [VP cleaned the car]

[NP Tom] [VP collapsed]

Once again, in cases where the second constituent is realised by a single word (*departed, collapsed*), we will nevertheless consider it to be a full phrasal category; we will simply say that its potential for syntactic complexity has not been fully exploited (see discussion above). Summarising, the basic structure of clauses is as follows:

3a.   S

[NP .....]   [VP......]

Or alternatively: S = NP + VP

In (3a) NP & VP are said to be `immediate constituents' of S: in the tree diagram (3a) they are seen to `hang' directly from S. Another way of putting this is to say that they are `daughters' of S.

Notice that the NPs *Tom* and *the man in the large grey hat* can also appear in positions different from the one they occupied in our original examples:

3b.   The girl recognised [NP Tom]

3c.   The girl recognised [NP the man in the large grey hat]

Given what we noticed above - that the whole string of elements following the initial NP is to be regarded as a syntactic unit (or phrasal constituent) - it follows that in (3b) and (3c) the NPs *Tom* and *the man in the large grey hat* are constituents of VP and not directly of S. In other words they are in the position of NP2, not that of NP1, in the following tree diagram:

4a.   S

[NP1 .....]   [VP......]

[V......]   [NP2 .....]

In order to distinguish between these two positions in which NPs can occur we will speak of NP,S and NP,VP respectively. In other words we will define them in terms of (i) the formal category to which they belong (NP and not VP or PP or AP, for instance) and (ii) the superordinate element of which they are direct constituents (or, put slightly differently, the higher `node' from which they hang). To define them in this way is to give them a purely configurational definition. Notice that an alternative terminology is in common use. In this NP,S is referred to as the Subject and NP,VP as the Object. VP itself is referred to as the Predicate. In other words:

4b. S

[NP/SUBJ .....] [VP/PRED......]

[V......] [NP/OBJ .....]

Applying this analysis to the sentences given above, we obtain:

4c. [NP/SUBJ Tom] [VP/PRED entered [NP/OBJ the bar]]
4d. [NP/SUBJ Tom] [VP/PRED departed]
4e. [NP/SUBJ Tom] [VP/PRED cleaned [NP/OBJthe car]]
4f. [NP/SUBJ Tom] [VP/PRED collapsed]

In all the representations given above the NP/object is shown as a constituent of VP and is therefore at a lower level of structure than the subject NP. This means that we are rejecting the following analysis:

4g. S

NP/Subj V NP/Obj

Subject, predicate etc are **functional** categories, and these are different in principle from the **formal** categories. The terms used to indicate the latter type of category give information about the form class of the element in question, whether at lexical level (N, V, P, A, Adj) or at syntagmatic level (NP, VP, PP, AP, AdjP). In other words they answer the question "What formal class does element x belong to?". By contrast, the functional categories indicate the syntactic function of the element in question in the higher (or superordinate) structure of which it is a constituent. They answer the question "How exactly does the element in question participate (from the syntactic point of view) in the structure of which it is part?". That there is an important difference between these two types of terms is already clear from our examples above. If we take (1a) and (3c):

1a. [The man in the large grey hat] entered the bar.
3c. The girl recognised [the man in the large grey hat]

and we ask ourselves, apropos of the constituent in square brackets, the question "What formal class does this element belong to?", the answer can only be "NP" in both cases. But if we ask the other question, "What is the syntactic function of this element?", the answer is clearly different depending on whether we are talking about (1a) or (3c). Later in the exposition, when we have extended the range of syntactic functions somewhat the distinction between formal categories and functional categories will become even clearer. We will see, in fact, not only that the same formal category can realise more than one function (as illustrated by (1a) & (3c)) but that the same

function can be realised by more than one formal category. For the moment, we will restrict ourselves to one further observation about the distinction between subject and object. Aside from the clear difference of interpretation that they are associated with and which is illustrated in the following:

5a.　　[Tom] [kicked [the dog]]
5b.　　[The dog] [kicked [Tom]]

we can detect other, less immediately obvious properties that distinguish them. In order to illustrate two of these we will examine the following examples, both of which involve a particular type of pronominal, the reflexive pronoun *herself*. These pronominals are similar to ordinary personal pronouns in the sense that in order to understand what they refer to we must look for a full NP - an antecedent - to which they are `anaphoric'. Where they differ from ordinary (= non-reflexive) personal pronouns is in the fact that they must have an antecedent within the same clause and cannot be co-interpreted with an element that is situated - for instance - in the preceding clause. In this respect they differ sharply from ordinary (non-reflexive) personal pronouns[2].

Let us examine then the following pair of examples, where both the reflexive pronoun and the full NP that `identifies' it are indeed in the same clause:

6a.　　[Jane] blamed [herself] for the error in the accounts
6b.　　*[Herself] blamed Jane for the error in the accounts

What we observe in (6) is that the reflexive pronoun *herself* can occur in object position when its the element - in this case the proper noun *Jane* - with which it is connected is in subject position, but not vice-versa.

In order to illustrate the second case, we must first introduce a new set of examples (once again the same NP, in this case *the pictures of Richard's holidays*, is object in one example and subject in the other):

7a.　　Tom and his friends saw [the pictures of Richard's holidays]

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[2] This is illustrated in the following examples: in (i) the second clause (following the colon) contains the reflexive pronoun *ourselves* but this has no antecedent in the same clause; the element that would clearly be a compatible antecedent - the first person plural pronoun *we* - is in fact in the preceding clause and is thus debarred from entering into a relation with *ourselves*. The result is an ungrammatical structure:

　　i.　　We finally got the news of the accident on the Friday of the following week: *it could not have shocked ourselves more.

It needs to be underlined that the constraint blocking the use of a reflexive in (6a) is syntactic in nature (this class of pronoun manifests a particularly strong form of structure-dependency) and has nothing to do with recoverability of information in the normal sense. Indeed in (ii) the reference of the reflexive would be quite easy to recover but syntactic rules prevent us from establishing a link with an element outside the same clause. No such problem arises for non-reflexive pronouns, as is shown by the following:

　　ii.　　Tom and his friends finally got the news of the accident on the Friday of the following week: it could not have shocked them more.

7b.   [The pictures of Richard's holidays] shocked Tom and his friends

Now these clauses can be embedded (as subordinate *that* clauses) in a higher clause so that they occupy the position indicated by X in *You said that X*. The result is as follows:

7a'.   You said [that Tom and his friends saw [the pictures of Richard's holidays]]

7b'.   You said [that [the pictures of Richard's holidays] shocked Tom and his friends]

All this is entirely straightforward. These examples begin to become interesting if we transform them into *wh-* interrogatives, using subject-auxiliary inversion in the higher clause and `extracting' an element from the lower clause. Let us suppose, in fact, that we were not paying attention when our interlocutor said that the pictures were of Richard's holidays, and we therefore wish to discover the identity of the person whose holidays are shown in the pictures. We will first of all need to introduce an interrogative (*wh-*) element, so that the relevant NP becomes *the pictures of whose holidays*. Then, in order to produce a correctly formed interrogative structure, we will need to extract the element *whose holidays* from the larger NP *the pictures of whose holidays* and move it to the beginning of the sentence as a whole. What is interesting is that this extraction is perfectly possible in the (a) example, where the larger NP has the function of object, but not in the (b) example, where it has the function of subject (the position from which the interrogative element is extracted is shown by the empty square brackets in each case):

8a.   Whose holidays did you say that Tom and his friends saw the pictures of?

8a'.   [Whose holidays] did you say [that Tom and his friends saw [the pictures of [   ]]?

8b.   *Whose holidays did you say that the pictures of shocked Tom and his friends so much?

8b'.   *[Whose holidays] did you say [that [the pictures of [   ]] shocked Tom and his friends so much]?

The reason for this difference is not apparent, and we will not seek a theoretical explanation of it here. All we will say is that, given that the NP from which extraction occurs is exactly the same in each case, the different results shown in (8) must be taken as revealing some important difference between subject and object. Beginning to catalogue such differences is important: indeed, the use of functional terms such as `subject' or `object' presupposes that what one refers to by these terms is something more than just the syntactic positions defined configurationally (as explained above); it presupposes that for each of these functions (and indeed for any other functions one cares to add to the list) there is a significant cluster of syntactic properties which serves to distinguish it from the others (since this question is controversial, we will postpone discussion of it until later).

A2.   *NP,S and the syntax of Italian*

The generalisation arrived at the preceding section, to the effect that

the basic structure of clauses is as follows:
1a.   S

          NP   VP
is to be taken as valid for Italian as well as for English. Indeed, the same substitution tests may be performed. In exactly the same way as for English, these show that clauses consist of two main constituents, one nominal in character and the other the projection of a verb:
2a.   [L'uomo vestito di nero] [spinse il cane verso il fiume]
2b.   [Gianni] [partì]
Thus both (2a) and (2b) are equally grammatical structures, and so are the following:
2c.   [L'uomo vestito di nero] [partì]
2b.   [Gianni] [spinse il cane verso il fiume]
And yet, alongside clauses constructed on the model of the perfectly grammatical (2a) - (2d), Italian also allows structures like the following:
3a.   Arriva domani con il treno delle 3
3b.   Sembri stanco morto
3c.   È molto bella
3d.   Nevica da tre ore
It would be wrong to think of these clauses as elliptical; in fact they are no more elliptical than the corresponding English clauses with pronominal subjects:
3a'.   [He] is arriving tomorrow on the three o'clock train
3b'.   [You] seem dead tired
3c'.   [It] is very nice
3d'.   [It] has been raining for three hours
The English sentences have a non-null NP,S constituent but only (3a') and (3c') actually provide any more information than the Italian sentences, which have no NP,S - the extra information concerns the gender of the subject entity in these two cases. With the exception of this extra information the Italian sentences are interpreted exactly as if they had pronominal subjects like the English equivalents. Alternative versions with pronominal subjects can be given unproblematically at least in the first two cases:
3a".   [Lui] arriva domani con il treno delle 3
3b".   [Tu] sembri stanco morto
Often (though not always) the choice of a pronominal subject is dictated by some special communicative need: to reestablish an entity as topic of the discourse or to achieve some sort of emphasis (frequently contrastive: *Lui ma non Lei*). By contrast, in the third case (assuming that the referent is some non-human entity), no pronominal realisation is fully acceptable. As Cordin (1988: 536) points out, the Italian pronominal system contains no element that, while functioning as subject, can felicitously refer to a concrete non-human entity: the only form that comes to mind - *esso/a* - is stylistically marked and in any case only fully felicitous when used to refer to abstract entities.

         Moving now to the last case, (3d), there is simply no pronoun at all that

can be inserted. Italian has no equivalent to the English impersonal *it* (used with metereological predicates such as *rain, snow, be hot* etc and a variety of other verbs - *seem, turn out, appear* etc). With similar predicates the NP,S position in Italian clauses is obligatorily empty. All this seems to point to the conclusion that Italian (and languages like it) instantiate a fundamentally different system from the one we observe operating in English (and languages similar to English). Indeed, the facts noted above - in particular the fact that Italian subjectless clauses nevertheless convey practically all the information conveyed by English clauses with explicit pronominal subjects and that verb agreement is in any case triggered - have led numerous linguists to adopt the idea that the subject position in Italian (and similar languages) is occupied by an abstract, phonetically unrealised or `null', pronoun. In other words, Italian clauses are in fact like English clauses, the only difference being that the pronominal subject is an abstract category in the former language and a phonetically realised one in the latter. The abstract pronoun has been termed *pro*. Rewriting some of our original examples so as to incorporate this suggestion we get:

3a.   [pro] arriva domani con il treno delle 3.
3b.   [pro] sembri stanco morto
3c.   [pro] è molto bella
3d.   [pro] nevica da tre ore

The idea of a null pronominal is anything but an *ad hoc* invention designed to bring Italian into line with languages like English; indeed, even in English there are many cases - chiefly in subjectless gerund and infinitival clauses - where it seems necessary to posit an abstract pronoun:

4a.   [[   ] realising that they would never reach the summit], the climbers decided to turn back
4b.   Tom promised Jane on more than one occasion [[   ] to help her decorate her flat].
4c.   [[ ] trying to help people settle their quarrels] is not a good idea

In each of the examples the empty square brackets indicate a position which we might think of as containing a null pronoun. Indeed, it is common for Italian to be referred to as a `null-subject language'.

The divergence of Italian from the model of clause structure represented in (1a) does not stop with the possibility of leaving this position empty (or rather of filling it with a null pronoun); Italian also allows an empty NP,S position to be followed by a full NP subject in postverbal position:

5a.   [pro] è arrivato [tuo padre]
5b.   [pro] l'ha mangiato [Riccardo]
5c.   [pro] non l'ha visto [nessuno]

The equivalent structures in English are strongly ungrammatical:

6a.   *[pro] has arrived [your father]
6b.   *[pro] ate it [Richard]
6c.   *[pro] didn't see it [anybody]

Indeed, the only way to render these structures grammatical is to return to the canonical order of elements, NP + VP:

6a'.   [Your father] [has arrived]

6b'.   [Richard] [ate it]
6c'.   [Nobody] [saw it]

It is important to realise that this order cannot be departed from even in cases like (6a) and (6b), where - assuming we wish to reproduce the sort of emphasis on the lexical subject that characterises the Italian originals - we might be tempted to shift the NP into a postverbal position. Notice that this is not possible even if we fill the NP,S postion with an explicit pronoun:

7a.   *[He] has arrived [your father]
7b.   *[He] ate it [Richard]

Nor are clauses of this type improved if we use the expletive pronoun *it* as a sort of `dummy filler' for the NP,S position on the model of (3d'):

7a'.   *[It] has arrived [your father]
7d.   *[It] has arrived [your parcel]

The two properties that we have just discussed - allowing NP,S position to remain unfilled (or apparently so) and allowing the lexical subject to appear in postverbal position - appear to be connected. They are both present in Italian and both absent in English. Many other languages (for instance Spanish & Modern Greek) resemble Italian in displaying both these properties, and many others (for instance German & French) resemble English in excluding both of them.

A3.   *Constituent structure and the resolution of ambiguity*

In the two examples that follow - (1a) and (1b) - the V is followed by a string of elements in which it is possible to recognise an NP (*the door/the woman*) and a PP (*with a hammer/with a crooked nose*).

1a.   Tom fixed the door with a hammer
1b.   Tom married the woman with a crooked nose

However, a simple substitution test (involving pronominalisation) reveals that the structure of the two VPs is not the same:

1a'.   Tom fixed [it] with a hammer
1b'.   *Tom married [her] with a crooked nose
1b".   Tom married her.

(1b') and (1b") show that the proform *her* obligatorily replaces the entire string following the V *the woman with a crooked nose*. It follows that this has to be considered a constituent and that the PP *with a crooked nose* is contained within this and has no direct relation with the VP. In (1a) by constrast, the substitution test gives the opposite result: the PP is not included in the material replaced as a result of pronominalisation. It follows that in this case the PP is not a constituent of the NP but directly of the VP. We give the following analyses of the two sentences:
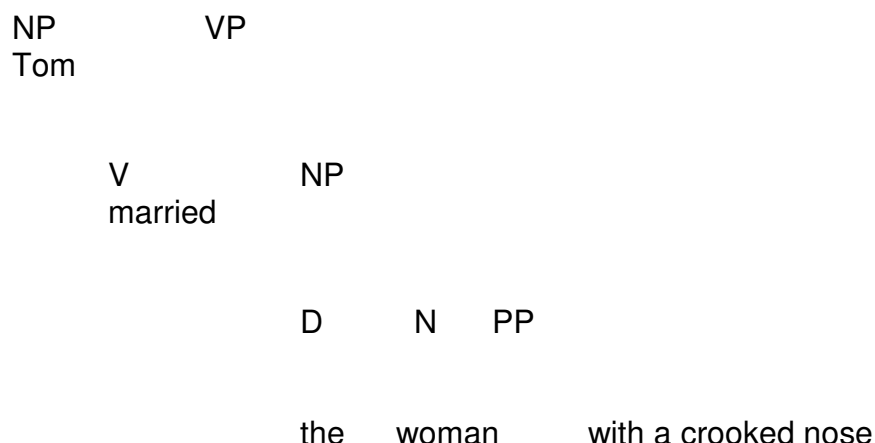
1a.   Tom [$_{VP}$ fixed [$_{NP}$ the door] [$_{PP}$ with a hammer]]
1b.   Tom [$_{VP}$ married [$_{NP}$ the woman [$_{PP}$ with a crooked nose]]

The following shows the structure of (1b) as a tree diagram, with the PP clearly hanging from NP:

1c.   S

NP   VP
Tom

V   NP
married

D   N   PP

the   woman   with a crooked nose

The original examples may be compared with following, which displays ambiguity - there are two possible readings: one in which the stick is understood to be possessed by the woman, and another in which the stick is understood to be the instrument with which Tom hit the woman. These two readings involve a different structural collocation of the PP *with the stick*, as is shown in the analyses given in (2b) and (2c):

2a.   Tom hit the woman with the stick
2b.   Tom [$_{VP}$ hit [$_{NP}$ the woman [$_{PP}$ with the stick]]]
2c.   Tom [$_{VP}$ hit [$_{NP}$ the woman] [$_{PP}$ with the stick]]

(2b) shows the analysis of the sentence when interpreted as meaning that the woman was holding the stick: the PP is represented as a constituent of the NP object. (2c) shows the analysis of the sentence when interpreted as meaning that Tom used the stick as an instrument for hitting the woman: the PP is a constituent of VP but not of the NP object.

A4.   *Implications of the constituent structure analysis*

So far we have argued for the idea that in clause structure individual words group together to form syntagmatic or phrasal structures, and we have done so on the basis of substitution tests: where a single element could replace a string of words without any effects on the grammaticality of the resulting structure we have suggested that the original string of words must be considered to operate as a unit. In this section we will try to bring out a little more clearly what is involved in this analysis.

First of all it is clear enough that we have to recognise that relations exist between words. Indeed no one would be remotely satisfied with an analysis of a clause such as the following, which supposed that each of the six words it contains was a direct constituent of S:

1a.   The doctor helped the old lady

In other words, no one would accept an analysis as follows:

1b.   S

the doctor   helped the old lady

The obvious reason for rejecting such an analysis is that it fails to recognise certain relations that we intuitively feel to exist between words in the string. Thus it would normally be assumed that there is some sort of dependency between *the* and *doctor* on the one hand and between *the*, *old* and *lady* on the other (to mention only the most obvious cases). These relations were recognised in traditional grammar, which spoke of *the* being `the article of the noun *doctor*' and of *old* being `adjective' or `modifier' of the noun *lady*. The two nouns, *doctor* and *lady*, were then considered to be subject and object of the clause respectively. Thus traditional grammar appeared to be operating with two types of relation: the terms `subject' and `object' suggest a relation with the superordinate structure, the clause. This can only be a `vertical' relation. At the same time locutions such as `*the* is the article of *doctor*' are suggestive of a horizontal relation: the article is treated as if it were dependent on the noun, which then functions as an element in the higher structure. In other words we have a situation something like the following:

1c.   S

        art -   N   ....
        the - doctor

Thus the article is not represented as being a constituent of anything: it has no vertical relation with any superordinate structure, only a horizontal relation with the N on which it is intuitively understood to depend. A similar account was given in traditional grammar of the relation between so-called auxiliary verbs and lexical verbs. Thus a string such as *has departed* in the following clause:

1d.   Tom has departed

was analysed as containing one word (the lexical verb *departed*) with a vertical relation with S (traditional grammar did not usually recognise a predicate phrase or VP) and another word, *has*, linked to the lexical verb by a horizontal relation. Indeed, auxiliary verbs, insofar as they can be understood to express selections within the systems of tense and aspect which in many languages (and especially classical Latin and Greek) are expressed through morphological affixes attached to the lexical verb, tended to be treated as mere appendages of the verb, in other words as `grammatical functors' without any syntactic status of their own. Indeed, in certain traditional grammars it was even claimed (or at any rate implied) that elements such as articles and auxiliary verbs were not to be regarded as separate words.

It is important to realise that the analysis we are proposing is radically different from the one used in traditional grammar. What we are saying, in effect, is that the relation of dependency between an article (determiner) and a noun in a string such as *the doctor* is not horizontal but vertical: in other words, it is to be represented in terms of both elements being constituents of some abstract superordinate structure (which we have identified as a phrasal

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or syntagmatic category). Putting this in the simplest possible terms, and abstracting away from the actual lexical categories involved, we can say that what traditional grammar represented as follows:

1e.

     B --> A

where B is to be understood as a lexical element engaged in a `horizontal' relation with A (another, more important, lexical element, capable of requiring or justifying the presence of B), we will represent as follows:

1f.

        Z

      B   A

In this, Z represents an abstract superordinate category (phrasal or sytagmatic in character) and the relation between A and B is represented not as horizontal but rather as consisting in the fact that both have a vertical relation of constituency with the superordinate abstract category Z. Notice that one important consequence of this analysis is that A is no longer in a direct vertical relation (of immediate constituency) with S (the clause); it too, like B, is a constituent of Z (the abstract category) and only Z is an immediate constituent of S. In other words the overall structure is as follows:

1g.

       S

   Z   ......

   B   A

But why is this analysis to be preferred to that of traditional grammar? First of all because it is very easy to show that not all relations of dependency can be understood as existing between words, as representations such as (1e) would suggest. Let us take the case of attributive adjectives and nouns. In traditional grammar, as we saw apropos of the example *the old lady*, it would be normal to consider the adjective *old* as `the adjective of the noun *lady*'. At first sight this seems unobjectionable enough: it is true that the adjective `modifies' the noun, giving us a more restrictive description (not just any lady but an *old* lady). But what happens if we take an only slightly more complicated example: *a highly influential former minister*? Would it be true in this case to say that the adjective *influential* modifies the noun *minister* and that alone? In semantic terms what we appear to be being told is that the person in question is influential *qua* <u>former</u> minister, not just *qua* minister. In other words, what is semantically modified by *influential* is *former minister* and not *minister* alone. Similarly, in *a typical provincial politician* the referent is said to be typical not of politicians in general but of provincial politicians. Insofar as the interpretation of these strings reflects their internal syntactic structure, it seems that we have to conclude that the first adjective in each case is combining with a unit constituted by the second adjective and the noun. Thus

we have a relation of this type:
2a.　　[typical [provincial politician]]
and not one like this:
2b.　　　　　　　　　　　　politician
　　　　[typical] [provincial]

Indeed, it is possible to invent a more complicated structure such as *a typical provincial politician and small-town socialite*, in which typical is understood to apply to both descriptions (*provincial politician* and *small-town socialite*) taken together. In other words the person referred to is said to be typical of both these categories together:
2c.　　[typical [[provincial politician] & [small-town socialite]]
Syntactically then the element modified by *typical* is the combination of the two bracketed elements that follow in (2c).
　　　　The examples we have just dealt with may also be used to cast doubt on the account given in traditional grammar of determiners (articles) as depending directly on nouns. If this were correct, then in an example such as our first one, *the influential former minister*, would be expected to denote a [+ human] entity that is a minister, whereas in fact it denotes a [+ human] entity that is no longer a minister and is also influential. Similarly, in the last example dealt with, *a typical provincial politician and small-town socialite*, as used in
2d.　　John Smith was clearly [a typical provincial politician and small-town socialite]
what is denoted is clearly one entity rather than two. Applying the idea of traditional grammar about determiners belonging directly to nouns, we might ask whether the determiner *a* belongs to the first noun (*politician*) or to the second one (*socialite*)? Clearly it makes much more sense to think of the determiner as combining with a syntactic unit consisting of the whole of the rest of the string:
2d'.　　[a [typical [[provincial politician] & [small-town socialite]]]
As further evidence of how even within syntagmatic categories relations do not exist between words alone, we may consider the following examples (drawn from Giorgi & Longobardi 1991: 199):
3a.　　la [mia nuova efficiente segretaria] e [tua ottima collaboratrice]
3b.　　la mia [nuova efficiente segretaria] e [ottima collaboratrice]
3c.　　la mia nuova [efficiente segretaria] e [ottima collaboratrice]
3d.　　la mia nuova efficiente [segretaria] e [collaboratrice]
Readers will appreciate that the interpretations obtained from these NPs vary according to how the elements within are understood to bind together in groups (square brackets have been used to suggest the most salient groupings in each case).

B　　The VP: the verb and its satellites

B1.　　*The V and the NP object*
　　　　The single obligatory constituent of VP is V itself; the question of

whether other constituents - in particular an NP - are required depends in the first instance on the choice of V:

1a.   [NP Tom and Jane] [VP hesitated]
1b.   [NP Tom and Jane] [VP discussed [the matter]]

The verb *hesitate* requires no following NP in order to produce a grammatical structure; by contrast the verb *discuss* requires such an NP, and if the NP is not present in VP the result is an ungrammatical structure:

1b'.   *Tom and Jane [VP discussed]

Notice that the unacceptability of (1b') cannot simply be attributed to the fact that it presents an incomplete piece of information. Indeed, it not difficult to produce an example in which this lack of complete information is remedied (by making it clear in a preceding clause what we are talking about). The fact is, however, that the structure remains ungrammatical:

1c.   *[Once Mary had raised the issue], Tom and Jane immediately [VP discussed [NP]].

As soon as the requirement that the V *discuss* be followed by an NP (in this case a pronominal NP) is satisfied, the structure becomes grammatical:

1c'.   [Once Mary had raised the issue], Tom and Jane immediately [VP discussed [NP it]].

Exactly the same seems to be true of the verb *devour*, whose object may not be omitted even in cases where the omission creates no impediment to understanding:

1d.   *Tom [VP lifted the cake to his mouth] and [VP devoured [NP]].

As soon as the object is realised the structure becomes grammatical:

1d'.   Tom [VP lifted the cake to his mouth] and [VP devoured [NP it]].

What this suggests is that verbs may have requirements regarding the syntactic structures that must follow them in VP that are in principle independent of the obvious real world need to provide a comprehensible (and therefore complete) piece of information. But this is a matter of the properties of individual verbs: many verbs differ from *devour* (and *discuss*) in allowing their NP to optionally not appear:

1e.   Tom [VP drank [NP the wine]]
1e'.   Tom [VP lifted the cup to his mouth] and [VP drank].
1f.   Tom [VP chewed [NP the gum]]
1f'.   Tom [VP popped the gum in his mouth] and [VP chewed].

In both these cases - (1e') & (1f') - it is on the basis of the preceding clause that we understand that Tom drank the contents of the cup and chewed the gum; in neither case are these entities represented explicitly in the second VP.

Returning now to example (1a), it is worth noting that the V *hesitate* not only does not require a following NP but actually excludes this possibility:

1a'.   *[NP Tom] [VP hesitated [NP his decision]]

It might be objected that (1a') is unacceptable simply because no interpetation is available for it (i.e. that in the first instance it is semantically rather than syntactically anomalous). However plausible in this case, this account is much less convincing in cases where an interpretation for the ungrammatical structure would be quite easy to imagine. Thus with a sentence such as (1g)

there would not at first sight appear to be any reason why we cannot add an object (so as to form (1g')), but in fact we cannot:

1g.   [NP Tom] [VP listened]

1g'.   *[NP Tom] [VP listened [NP the radio]]

Sentence (1g') is ungrammatical. Interestingly, in Italian (with the nearest corresponding verb *ascoltare*) the situation is very different:

1h.   [NP Gianni] [VP ascoltò]

1h'.   [NP Gianni] [VP ascoltò [NP la radio]]

Given these contrasting facts (and the clear absence of any significant semantic difference between the English and Italian verbs), it is difficult to avoid the conclusion that, though the question of whether a verb requires or allows an object NP is in the first instance semantic in nature (does the verb represent a process, event or situation that involves a second participant - i.e. some entity other than the one responsible for initiating the process, event or situation?), there is nevertheless a (somewhat unfathomable) syntactic dimension to it. Some verbs simply do not take object NPs even though one might be forgiven for thinking - on semantic grounds - that they should. Sentence (1g') can of course be made grammatical through the addition of a P:

1g".   [NP Tom] [VP listened [PP to the radio]]

The status of this P and the question of why a given verb can take (= c-select) an NP object, while another (semantically similar) verb cannot will be taken up again in a later section.

B2.   *The NP object vs other satellites (i)*

So far our discussion of the other constituents of VP has focused exclusively on the object NP; we have noted how the possibility of having such an element depends on which V is chosen for the clause and its (sometimes seemingly idiosyncratic) properties. We will now extend the discussion to encompass other elements in VP, and our main objective will be to show that these do not all have the same syntactic status. The obvious problem with an undertaking of this sort is that the syntactic status of an element cannot simply be read off on the basis of some single distinguishing characteristic, whether this be the formal class of the element or its linear position or its degree of obligatoriness in the structure. Rather (as we will see) it has to be inferred on the basis of a number of factors, none of which is conclusive on its own. For this reason, we will make use of various tests (bearing on a number of different factors, including the omissibility, linear position, movability etc of the elements in question).

Omissibility: we will begin by considering the following examples, where the verb and its object are followed by other elements:

1a.   Tom and Jane discussed the matter calmly

1a'.   [NP Tom and Jane] [VP discussed [NP the matter] [AP calmly]]

1b.   Tom and Jane discussed the matter in a great hurry

1b'.   [NP Tom and Jane] [VP discussed [NP the matter] [PP in a great hurry]]

1c.   Tom and Jane devoured the cheese enthusiastically

1c'.   [NP Tom and Jane] [VP devoured [NP the cheese] [AP enthusiastically]]
The elements in questions are the AP *calmly*, the PP *in a great hurry*, and the AP *enthusiastically*. What distinguishes these consituents from the NP that precedes them is first and foremost the fact that they may all be omitted, without this having any consequence on the grammaticality of the clause. The result of such omission is the perfectly grammatical (1a'):
1a'.   [NP Tom and Jane] [VP discussed [NP the matter]]
Thus we appear to have a very strong contrast between the NP constituent of VP, which in the examples given may not be omitted, and the other constituents, which are freely omissible from the syntactic point of view (the only consequence of their omission being loss of information). Put slightly differently, if we consider that everything which occurs in VP (apart from the V itself) is in some way a dependent of the V (if only because it occurs in a structure that is by definition the projection of the verb), the relation of dependency which links the NP to the V would appear to be more direct than the one which links the omissable elements to the V.

In the discussion above, which centred on verbs whose object NP is non-omissible, we noticed that not all verbs which are capable of selecting an object are like *devour* and *discuss* in requiring that object to be realised obligatorily. Alongside verbs of this type, there are others - as we saw - that are undoubtedly capable of selecting an NP object but which can also be used without that object actually being realised. The examples in question were (1e') and (1f') in the preceding section (= B1). To these we may add the following:
2a.   [said to a child about to be introduced to Mr Berlusconi] Put that pizza down! You don't speak to Mr Berlusconi while eating [ ]
Here the verb *eat* (in this case contained in a non-finite gerund clause) is used without its NP object realised. In such cases it is common to speak of the V being `intransitivised'. It would of course have been possible to have either of the following:
2a'.   Put that pizza down! You don't speak to Mr Berlusconi while eating [pizza]
2a''.   Put that pizza down! You don't speak to Mr Berlusconi while eating [things]
Indeed, there can be no doubt that for any act of eating there is necessarily some entity involved and to this extent the V *eat* might be thought of as basically transitive. In certain cases where it appears without an object NP, an interpretation slightly different from the one obtained in (2a) is triggered. Thus in the following case, we would understand that some conventional occasion of eating (lunch, dinner etc) is intended and not simply that at the time in question any act describable as `eating' will be taking place:
2b.   Call us about 9.30pm: earlier we will be eating
A special interpretation of this sort is far from being a possibility with all basically transitive Vs that can also appear without an object NP. In most cases we have an interpretation similar to that obtained with *eat* in (2a). An example of this might be the following (the V *phone* is transitive, as shown by

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Jane is phoning her aunt:
2c.　　Don't disturb Jane for a moment: she's phoning
We conclude, then, that for many verbs the object NP is a possible but not obligatory accompaniment.

　　　　Now since above the contrast between the PP and AP constituents of VP on the one hand and the NP constituent on the other was seen in terms of omissibility (the former being said to be omissible and the latter non-omissible), it is clear that some revision is in order. That the PP and AP constituents are omissible remains true (though it should be remembered that all conclusions are to be taken as valid only on the basis of the examples considered); the NP can be non-omissible but sometimes can be omitted. In order to demonstrate that in cases where the NP is not absolutely obligatory this non-obligatoriness is not evidence of a different syntactic status, we will have recourse to a test based on substitution. The substitute element (or pro-form) that we will use is *do so*. As is well known, this element can replace the V in sentences consisting of coordinated independent clauses such as the following:
3a.　　Jane runs at weekends and Richard *does so* during the week
3b.　　Mary swims regularly and Tom *does so* from time to time
What we notice is that *do so* allows us to avoid repeating the V in the second coordinated clause. Interestingly the PP *at weekends* and the AP *regularly* (present in the VP of the first clause in each case) are not included in what *do so* replaces; indeed in both examples the second clause has a similar element - *during the week, from time to time* - whose function is clearly to specify alternative values for the same semantic categories (time and frequency). Now the cases examined in (3) involved Vs which do not normally select NP to accompany them in VP (i.e. intransitive verbs). The behaviour of *do so* becomes more interesting - and highly illuminating for our investigation of the syntactic status of elements in VP - if we examine clauses where the V is accompanied by an NP. First of all we will take cases where the NP is obligatory:
4a.　　Tom and Jane discussed the first problem and *Richard and Mary *did so* the second
4b.　　Tom devoured the cheese and *Richard *did so* the chicken
4c.　　Jane reorganised the courses and *Mary *did so* the exams
What we find, concentrating our attention on the second coordinated clause in each case, is that *do so* cannot be used to replace the V if this element is accompanied by an NP; indeed, the following example shows us that in such cases *do so* must replace both the V and the NP:
4d.　　Tom and Jane discussed the problem in the morning and Richard and Mary *did so* in the afternoon
The interpretation of (4d) is that Richard and Mary discussed the problem in the afternoon. What we see, then, is that *do so* obligatorily replaces the V and the NP (where this is present). This is interesting in itself, since it shows that these two elements must be very closely linked (later we will argue that they constitute an inner nucleus within VP), while the PP or AP that follows is not included in the elements replaced by *do so* and therefore appears to be less

closely related to the V. So this test gives us yet another piece of evidence of the difference between the NP constituent and the PP or AP constituents. What is interesting from the point of view of our discussion of omissibility is that the *do so* gives exactly the same result with those Vs (like *eat, drink, chew* etc) which can co-occur with an NP but without necessarily requiring that NP to be realised every time:

5a.   Tom drank the wine and *Mary *did so* the vodka

5b.   Jane ate the cheese and *Richard *did so* the chicken

5c.   Edward pushed the motorbike and *Richard *did so* the sidecar

In other words, contrary to what one might perhaps expect, the non-obligatoriness of the NP following these (and other similar) verbs does not appear to be evidence that the NP in such cases (when realised) has a different syntactic status from the NP which obligatorily follows Vs such as *discuss, devour* etc. Indeed, *do so* treats both combinations - V + obligatory NP & V + optional NP - in exactly the same way. And it distinguishes both these combinations from the other elements in VP, which, unlike the NP, do not have to be included in the string of elements replaced.

It follows, then, that, while the obligatoriness of the NP after a given V undoubtedly constitutes an important piece of evidence about the syntactic status of that element, especially since, in all the examples we have examined so far the PP and AP elements have - in marked contrast - *not* been obligatory, it cannot be considered the defining criterion of the special syntactic relationship that we are assuming to exist between the V and the NP object.

Non-exclusion: just as constituents such as *enthusiastically, calmly, in a great hurry* may be freely omitted from clauses such as the ones we have seen in our examples, so they may generally be added to clauses without occasioning any problems of compatibility with the other VP constituents (the V in particular). Thus, as readers will be able to see for themselves, any of the three elements under consideration may be placed in any of the following structures:

1a.   Tom formatted the disk [   ]

1b.   Jane paid the bill [   ]

1c.   Mary swatted the mosquitoes [   ]

1d.   Susan forged Richard's signature [   ]

None of the Vs - or none of the combinations of V and NP - excludes any of the elements in question. It seems then that the Vs on the one hand and the elements *enthusiastically/calmly/in a great hurry* are in principle not dependent on each other. The fact that these Vs appear not to exercise any kind of selection over the elements that can occur in the bracketed position is in striking contrast with the very restrictive selection that the same verbs (or most of them) seem to exercise over the NP constituent. This takes two forms. First of all, alongside Vs such as those in (1a) - (1d) which select an NP, there are others that exclude an element of this type. Thus we may compare our original examples with the following:

2a.   *Mary gesticulated [her father]

2b.   *Jane looked [the book]
2c.   *Tom relied [his uncle]
2d.   *The baby cried [its unhapiness]

It is important to realise that exclusion of a particular element is a kind of selection. We could say that all the Vs in (1) and (2) exercise selection in respect of whether an NP is permitted in the slot that directly follows them in VP. The Vs in (1) select a different value - + NP - from the Vs in (2). Selection of this type - which essentially consists in the V specifying what (if any) phrasal category may or must accompany it in VP - is known as Categorial selection or C selection.

Alongside this type of selection, we find another, rather more subtle type. Returning to the examples in (1), which involved Vs that c-select an NP for the syntactic slot following them in VP, we may compare the following:

1a'.   *Tom formatted the chicken (before placing it in the microwave)
1b'.   *Jane paid the meal
1c'.   *Mary swatted the elephants
1d'.   *Susan forged Richard's voice

In all these cases the V continues to be followed by an NP (as it was in the originals), so that this C-selection requirement continues to be satisfied. But the clauses are all unacceptable. What this latest set of examples reveals is that these Vs require not just any NP but one that has a specific semantic feature. For instance the object of the V *forge* must have the semantic feature [+ written/(photo)graphically repesented], the object of the V *format* must have the feature [+ computer encodable], the object of *swat* must have the feature [+ insect] etc. In all the cases (1a') - (1d') these extra requirements - referred to as semantic selection or S-selection - are manifestly unsatisfied. In order to see how subtle these S-selection requirements may be we may consider the following:

1e.   You don't eat enough vegetables/meat
1f.   ??You don't eat enough vitamins/calories
1g.   You don't consume enough vegetables/meat
1h.   You don't consume enough vitamins/calories

In all cases the selection requirements of the Vs in categorial terms are satisfied: they are followed by the requisite NP. The problem arises with the verb *eat* and the NPs *vitamins* and *calories*. This clause is much less acceptable than the corresponding one with the verb *consume*, and this despite the very similar meaning of the two verbs (as interpreted in this context). The problem with (1f) appears to be that the verb *eat* has more restrictive semantic selection requirements than the verb *consume*. A reasonable hypothesis would be as follows: whereas for *consume* (in the relevant sense) it is enough that the object should denote a comestible substance *or* any (abstract nutritional) element contained in such a substance, in the case of *eat* it seems that semantic feature required is the more restrictive of these two: the entity must be strictly [+ comestible].

What we have just seen (and it must be remembered that our discussion has been based entirely on a very limited range of cases) suggests that the categorial and semantic selection exercised by verbs over the first

element that accompanies them in VP does not extend over to the second constituent.

Of course it would not be true to say that the elements we are disussing are compatible with any verb. Indeed, it is easy to invent examples where they are clearly not compatible:

3a.   ??Tom collapsed enthusiastically
3b.   ??Tom snoozed in a great hurry

These examples are semantically anomalous. Collapsing is not (normally) an agentive act (in simple terms it is something that happens to you rather than something you do). It is consequently not compatible with an A like *enthusiastically*, which presupposes some degree of control over the event. The V *snooze* denotes a process involving no movement or change, while the PP *in a great hurry* presupposes just such a semantic feature in the verb with which it cooccurs. The point about these examples is that selection requirements here are of a much more general type than those just examined in the case of the verbs in (1). A verb such as *collapse* will combine with any adverb that is free of the [+ agentive] feature we mentioned: *he collapsed suddenly, he collapsed helplessly, he collapsed pathetically, he collapsed noisily* etc. Similarly *snooze* will combine with a whole range of elements (*he snoozed in perfect tranquillity, he snoozed in peace, he snoozed nervously, he snoozed silently, he snoozed calmly*); all that is required is that the crucial feature contained in the PP *in a hurry* should *not* be present. It seems to be the case, then, that, when it is a question of selecting NPs, Vs may very well exclude all possibilities except those belonging to a narrow semantic class defined on the basis of a very restrictive criterion, whereas when it is a question of their compatibility with other elements (AP and PP), the class of elements they allow is always extensive and defined on the basis of a not-very-restrictive criterion. The S-selection requirements in regard to the two types of element thus tend to differ greatly in restictiveness.

Formal realisation: a second important fact about these elements concerns their formal class: in contrast to the element that precedes them, they are not realised as NPs but as APs or PPs, in short as `oblique' elements. The distinction between oblique and non-oblique elements comes from the grammatical tradition and was elaborated on the basis of the classical languages. As is well known, the nouns of these languages have a rich system of morphological case: not only are nominative and accusative systematically distinguished morphologically (in English and Italian this happens only with personal pronouns, and not even with all of these), but there are others: genitive and ablative. Traditionally these are considered to be `oblique' cases, while the nominative and accusative (and sometimes also the dative) are said to be `non-oblique' (the term `casus rectus' being used for them). What we find is that the `oblique' cases tend to appear on elements that in English (and other languages) would be PPs or APs:

1a.   Ipso miraculo audaciae obstupefecit hostes (Livy)
        this very miracle of boldness (abl) - (he) amazed - the enemy (acc)
        `He amazed the enemy with this display of boldness'

What this might seem to suggest is the distinction between oblique and non-oblique elements is a basic one, which has carried over into languages like English, where it takes the from of a distinction between NP and other categories such as PP and AP. Notice that a certain amount of support for a distinction of this sort appears to come even from the modest range of examples given above: while the constituent directly following the verb has only one formal realisation, NP, the second postverbal constituent can assume either of two formal realisations, PP or AP. Indeed, the interchangeability of these two realisations can be demonstrated directly:

2c.   [NP Tom and Jane] [VP devoured [NP the cheese] [AP enthusiastically]]
2d.   [NP Tom and Jane] [VP devoured [NP the cheese] [PP with great enthusiasm]]

In these examples we find that the AP *enthusiastically* and the PP *with great enthusiasm* are fully interchangeable (it makes no difference, syntactically or semantically, which is chosen to follow the NP object). It follows then that the formal realisations PP and AP are in some way equivalent: whatever their internal differences, they have the common property of functioning as the third constituent of the VP (in clauses like our examples (2)). For the moment we do not know what this function is; all that we know is that it is characterised by being non-essential, and that PP and AP are equally capable of realising it and that in this respect they are both clearly in opposition to NP, the realisation of the second function (that of object). It is in this sense that the APs and PPs in the various examples sentences (2a)-(2d) are `oblique': they contrast in terms of formal realisation with the other non-V constituent of VP, and indeed with the other remaining constituent in the S, the NP,S or subject.

Linear order: When V is followed by two constituents, one an NP and the other a PP or AP, then the NP occupies the position adjacent to the V and the other constituent follows. In other words we find the following situation:

1a.   Tom and Jane discussed the matter calmly
1a'.   [NP Tom and Jane] [VP discussed [NP the matter] [AP calmly]]
1b.   *Tom and Jane discussed calmly the matter
1b'.   *[NP Tom and Jane] [VP discussed [AP calmly] [NP the matter]]
2a.   Tom and Jane discussed the matter in a great hurry
2a'.   [NP Tom and Jane] [VP discussed [NP the matter] [PP in a great hurry]]
2b.   *Tom and Jane discussed in a great hurry the matter
2b'.   *[NP Tom and Jane] [VP discussed [PP in a great hurry] [NP the matter]]

3a.   Tom and Jane devoured the cheese enthusiastically
3a'.   [NP Tom and Jane] [VP devoured [NP the cheese] [AP enthusiastically]]
3a.   *Tom and Jane devoured enthusiastically the cheese
3a'.   *[NP Tom and Jane] [VP devoured [AP enthusiastically] [NP the cheese]]

It is important to understand that the ungrammatical examples do not become acceptable in contexts where the NP object happens to contain more important new information than the PP or AP (in other words in cases where the NP is the main focus). In English informational salience is not sufficient to justify an order of elements in which the NP object is not adjacent to the V. In

this respect English contrasts with many lamguages, notably Italian:

4a.   Franco ha letto la lettera attentamente

4a'.   Franco ha letto attentamente la lettera

In English an order of elements similar to that of (4a') - or of (1b), (2b) & (3b) - is only allowed in cases where the NP is syntactically a much heavier element than the PP or AP. In other words we find structures like the following:

5a.   In 1946 Acheson [= Dean Acheson, US Secretary of State for Foreign Affairs 1946-53] opposed unsuccessfully the one-year deadline for free convertibility of sterling into dollars as a condition of making a large loan to Britain.

Here the object NP, the very long *the one-year deadline for free convertibility of sterling into dollars as a condition of making a large loan to Britain* is found not in its normal (or `canonical') position immediately after V but in a special position peripheral to VP. This `movement' is clearly triggered by the syntactic weight of the element (especially in comparison to the single-word AP). We may represent the `movement' that has taken place by inserting empty square brackets in what we take to be the basic or canonical position of the moved element (the NP,VP or object position):

5a'.   In 1946 Acheson [= Dean Acheson, US Secretary of State for Foreign Affairs 1946-53] opposed [   ] unsuccessfully [the one-year deadline for free convertibility of sterling into dollars as a condition of making a large loan to Britain]

This type of movement is referred to as `heavy NP shift' (movimento del SN pesante). In this case, where the NP is indeed exceptionally long and heavy, the canonical order would simply not have been acceptable:

5a".   *In 1946 Acheson opposed the one-year deadline for free convertibility of sterling into dollars as a condition of making a large loan to Britain unsuccessfully.

In the following case, by contrast, the same movement would give rise to reduced acceptability:

5b.   ??In 1946 Acheson opposed unsuccessfully [the one-year deadline]

whereas the following (with a somewhat heavier NP) would be considerably more acceptable:

5b'.   In 1946 Acheson opposed unsuccessfully [the one-year deadline for free convertibility of sterling]

Aside from noting the existence of a type of movement known as heavy NP shift, the purpose of the present section was to show that the NP appears to be linked to the V by a sort of `adjacency constraint' (in English at least). In other words, it must normally occur adjacent to the V, and can only be moved away when certain conditions (exceptional length or complexity) are met. This requirement of adjacency is suggestive of a very close link between the NP and the V.

Movability: Further proof that the AP and PP constituents are somehow different in terms of syntactic function from the NP constituents comes from their transportability. Unlike the NPs, these elements can frequently be moved out of VP, without this resulting in a highly marked structure. Thus we may

have the following:

1a.   Enthusiastically, Tom and Jane devoured the cheese.
1b.   With great enthusiasm, Tom and Jane devoured the cheese.
1c.   Calmly, Tom and Jane discussed the problem.
1d.   In a great hurry, Tom and Jane discussed the problem.

And this clause-peripheral position is by no means the only one available:

1a'.   Tom and Jane enthusiastically devoured the cheese.
1b'.   Tom and Jane calmly discussed the problem.

The NP object may also be moved into a similar peripheral position, but the result of this movement is much more marked than in the case of APs and PPs:

1a".   The cheese, Tom and Jane devoured [   ] enthusiastically.
1b".   The cheese, Tom and Jane devoured [   ] with great enthusiasm.
1c".   This problem, Tom and Jane discussed [   ] calmly.
1d".   This problem, Tom and Jane discussed [   ] in a great hurry.

Whereas in the case of the APs and PPs the positioning of the elements clause-peripherally leads only to a change in their informational salience (in simple terms, no longer being final elements in the clause, they are no longer part of its focus), in the case of the NPs movement seems to result in a clause that demands a particular context if it is to be judged an appropriate.

Indeed, sentences such as (1e") and (1f") might be found in a context of the following type (to be read as a short dialogue):

1i.

Speaker A: What happened to the French cheese and wine you brought back for your friends?

Speaker B: Well, the cheese they devoured with great enthusiasm but the wine they seem to have taken to a party.

In this case the movement of the object NP to a peripheral position seems to be justified by the need to establish contrasting topic entities in the two clauses (in other words a contrast is established in terms of what the two clauses are understood to be about). An alternative reason for this same type of movement is exemplified in the following (an original example taken from a text about the composer Wolf-Ferrari):

1j.   [1] Wolf-Ferrari prospered with him [= his teacher, the German composer Rheinberger], and on his return to Venice had an oratorio performed with success. [2] [This] he followed [   ] with an opera on the subject of Cinderella which was not a success (perhaps because of Rossini's superb opera on the same subject).

Here the placing of the object NP *this* in the clause-peripheral position seems to have been dictated by the need to establish an anaphoric connection with the preceding discourse.

Generally the more marked nature of movement in the case of the NP seems to confirm the idea that this element is more firmly anchored in its position in VP. This in turn suggests that its relationship with the V is closer than that of the other elements.

Extractability: a further illustration of the different syntactic status of the two

constituents following V in the VPs of clauses like the ones we have been considering comes from a test based on extraction. In order to see prepare the way for a test of this kind let us consider the following example:

1a.   Mrs Churchill destroyed the photograph of that art critic after his favourable article about the famous painter Graham Sutherland

Now let us suppose that we do not in fact know the identity of the art critic and the famous painter mentioned in this sentence and that, in order to ask about them, we need to form two interrogative versions of this sentence. This will first of all involve replacing each of the Xs - in turn - in the following with a wh-element:

1a.   Mrs Churchill destroyed the photograph of [X art critic] after his favourable article about [X famous painter]

we will thus obtain:

2a.   Mrs Churchill destroyed the photograph of [which art critic] after his favourable article about the famous painter Graham Sutherland

2b.   Mrs Churchill destroyed the photograph of that art critic after his favourable article about [which famous painter]

These *wh*-phrases will then need to be moved to the special position reserved for such phrases at the beginning of the sentence, as shown in the following straightforward examples:

3a.   Tom bought [which book] at the fleamarket

3b.   [which book] did Tom buy [ ] at the fleamarket?

Now if we attempt this movement of the *wh*-phrases in (2a) and (2b) we obtain the following results:

2a'   [which art critic] did Mrs Churchill destroy the photograph of [ ] after his favourable article about the famous painter Graham Sutherland?

2b'.   *[which famous painter] did Mrs Churchill destroy the photograph of that art critic after his favourable article about [ ]?

What we see is that movement - or `extraction' - of the *wh*-phrase is possible in the first case but not the second. Now in both cases the *wh*-phrase is extracted from a PP that is itself embedded (`incassato') in another constituent:

2a.   [NP the photograph [PP of which art critic]]

2a.   [PP after his article [PP about which famous painter]]

In (2a) the overall containing structure is an NP; in (2b) it is a PP. Thus extraction is possible from a constituent embedded in the NP structure following the V but not from a PP embedded in the PP.

The significance of these facts will become clear if we make a simple assumption: that the more closely a constituent is linked to the V - the more it forms a unit with the element that is head of VP and in some way the most important element in the clause as a whole - the easier it is to extract an element from within it. If this is assumption is correct, then the extraction facts presented above constitute a further piece of evidence that seems to confirm that the syntactic relation between the NP and the V is closer than that between the latter element and constituents such as PP.

Inherent semantics: continuing our exploration of the VP constituents following the V itself, it is perhaps worth devoting some attention to the fact that in many cases the NP constituent (the object) is a referential element while the second (the AP or PP) is not. This is clearly illustrated in the following pairs of sentences:

1a.   Tom defended [Bill Clinton] [tenaciously]
1b.   Tom defended [Bill Clinton] [with great tenacity]
2a.   Jane greeted [the guests] [very warmly]
2b.   Jane greeted [the guests] [with great warmth]

Thus the NP constituents *Bill Clinton* and *the guests* are fully referential, in the sense that they represent specific, bounded (in the sense of discrete, physically distinct) entities in the real world. This is particularly clear in the case of the proper name *Bill Clinton* but it is equally true in the case of the other NP constructed around the common noun *guests*: in this latter case we are asked to note the presence in the discourse world of a certain number of specific entities, each of which is an instantiation of the entity-type `guest'. In sharp contrast to the NP constituents, the AP *tenaciously* and the PP *with great tenacity* deal in an abstract concept, the quality known as `tenacity'; with abstract quality nouns of this type it makes no sense to talk of `instantiations' in the way that we have just spoken of instantiations of the entity-type `guest'. Even when a PP containing the N *tenacity* is given the appearance of specific reference (as in cases such as *with the same tenacity as before*), it is clear that the no absolute identity of reference is intended; rather what is meant is that action in question showed the same *degree* of tenacity:

1c.   Tom defended Bill Clinton [with same tenacity with which he had defended Richard Nixon]

Indeed the only question that can be pertinently formulated in such cases has to do with degree, while interrogative formulations associated with specific identification are inappropriate:

1d.   *With which tenacity did Tom defend Bill Clinton?
1e.   With what degree of tenacity did Tom defend Bill Clinton?

What we have just established, then, is that there are basic ontological differences underlying the syntactic realisation of one element as NP and of the other as AP or PP. In the former case we have concrete, discrete entities (often bearing the semantic features [+ animate] or [+ human]), while in the latter case, we have abstract and non-discrete qualities. Looked at from the point of view of the overall `scene' or `event' depicted in the clause, it is clear that only the NP represents a real objectively-identifiable participant in that event, while the PP or the AP represents something much less tangible, a quality that the event or action can be evaluated as displaying. This is intuitively clear, especially if one thinks that anyone, if asked how many participating entities are involved in the scene represented in sentence (1b) would reply that there are two, not three.

The characterisations that we have just given are undoubtedly valid for the examples they are based on. More broadly, it may be that the lexical class A has its ontological foundation in the representations of quality concepts - rather like the lexical class Adj, with which it has a close derivational

association. Indeed, it is surely significant that the lexical class A contains no items formed directly from Ns. Thus there are no As such as the following:

3a.   *Tom hit the donkey [stickly] [= using a stick]
3b.   *Jane warmed the soup [microwavely] [= using a microwave]
3c.   *Jane and Tom spoke [telephonally] [= using the telephone]

*stickly, *microwavely* and *telephonally* are all impossible As: although it would not be difficult to find interpretations for them, their derivation is in some way blocked. Notice that in the last case there actually exists an A with an interpretation similar to the one indicated: *telephonically*. Crucially though this is derived not from the N *telephone* - or at least not directly from this N -but from the Adj *telephonic*. It seems then that this derivational connection with an Adj is somehow crucial for an A: indeed, even cases where an A is lexically related to an N that itself denotes a `quality' (eg. *courage, tenacity, intelligence*) we find that derivation of the A must nevertheless be based on the Adj: *courageous/-ly, tenacious/-ly, intelligent/-ly*.

The generalisation which we expressed above - to the effect that the second constituent in the VPs of the original examples involves a word denoting an abstract quality - is undoubtedly valid, as we have just seen, for cases where this second element is an AP. It is less uniformly valid however in the case of PPs; indeed only a small proportion of PPs are built around abstract quality expressions on the model of *with great tenacity*. More normally the NP functioning as the complement of the P denotes a concrete, discrete entity. Thus we have cases such as:

4a.   Tom defended Bill Clinton [with [a sword]]
4b.   Tom waited [in [the coffee area]]
4c.   Tom smoked [in [the coffee area]]

In these cases, there is undoubtedly reference to concrete entities - a sword, the coffee area. Indeed the NPs which in (4a) - (4c) are embedded in the PP could equally well function on their own in the position immediately following the V:

4d.   Tom used [a sword] to defend Bill Clinton

4e.   Tom scrubbed [the coffee area]

Conversely, it is perfectly possible for the NP directly following the V to denote an abstract quality:

4f.   Tom showed [great tenacity] in his defence of Bill Clinton

4g.   Jane showed [great warmth] during her contacts with the guests

Even so, there remains a sense in which the entities `sword' and `coffee area' in the original examples, (4a) - (4c), might be said not to participate in the event or scene as entities. This is perhaps clearer in the case of (4b) and (4c) than in the case of (4a), so we will begin by discussing the former cases. Here a comparison with (4e) seems germane. Indeed, if one compares the two original examples with (4e), it becomes clear that, though the same entity - "the coffee area" - is mentioned in each case, it is only in (4e) that it actually participates *as an entity*. Indeed, in this case it is interchangeable with a whole series of other NPs whose denotation is clearly that of an entity:

4h.   Tom scrubbed [the silver jug]

4i.   Tom scrubbed [the car tyres]

4j.   Tom scrubbed [the dog]

Things are complicated by the fact that in ordinary parlance we might say that *the coffee area* is a "place" even in sentence (4e), and this because in some obvious sense that is what the term refers to (after all an "area" is necessarily a place, at least if we are talking about the physical world). But this would be tantamount to confusing reference and sense, and it would involve assuming that linguistic categories have no effect on the latter. Clearly we have to accept that language offers us the possibility of conceptualising reality as we see fit and that the representation of a place as an entity is one of the options that are available.

        In contrast with (4e), the original examples (4b) and (4c) use same NP - this time contained within a PP - in order to obtain a `place' rather than an `entity' interpretation. In other words its referent figures in the event as a place and not directly as an entity. This difference is reflected in the fact that the NP in (4e) represents an entity that is understood to undergo and be affected by the action described by the verb, while in (4b) and (4c) this is not the case; the referent of *the coffee area* in these two cases has no direct role in the event and is understood simply as giving the location. The point we are making is illustrated illuminatingly by the following examples:

5a.   The police combed the forest (= looking for an escaped prisoner)

5b.   The police searched the forest

5c.   The police searched in the forest

5d.   *The police combed in the forest

Once again we have an NP - *the forest* - that can be understood as an entity or as a place. In (5a) and (5b) the former interpretation is triggered by the linguistic representation as NP (rather than PP). In (5c), by contrast, we have the `place' interpretation (corresponding to the embedding of the NP in a PP). In (5d) this is not possible since the verb *comb* ("setacciare"), unlike *search*, is obligatorily transitive (it must be accompanied by an NP object).

        Interestingly, the verbs in (5a) and (5b), while selecting the NP *the forest* and undoubtedly triggering an interpretation in which this is a

participating entity rather than just the location, nevertheless require an N that has the semantic feature [+ spatial extension]. Sentences such as ??*I searched the top of the flagpole* are semantically anomalous because of the lack of this feature, and even examples like *I searched his eyes for a sign of understanding* is slightly somewhat strange (they are perhaps improved if we replace *his eyes* with another NP more easily interpreted as [+ spacial extension]: *I searched his (facial) expression for some sign of understanding*).

This requirement of verbs such as *search* (when used transitively) and *comb* that the object NP should have the feature [+ spacial extension] might seem, at first sight, to cast doubt on the rather fine distinction that we have been trying to make between representation as an entity (NP) and representation as a place (locative PP). There is no doubt that informally we might talk of verbs such as *search* as requiring an object that is a "place"; but this is actually misleading if we fail to add that this "place" is construed as affected entity in (4e), (5a) and (5b) but not in (4b), (4c) or (5c).

The point we are making, then, is that the elements in (4b) and (4c) realised as PPs have a semantically more marginal role in the event or scene represented in the sentence than does the corresponding element - realised as an NP - in sentence (4e). And this despite the fact that the basic NP remains the same and its reference remains the same ("the coffee area" in either case). The realisation of an element as PP, then, is seen to correspond to a semantic status - within the overall semantics of the `scene' represented in the clause -different from that corresponding to a realisation as NP. Put slightly differently, when a referential element is formulated as a PP rather than as an NP its participation in the `scene' or `event' appears to be mediated by some indirect semantic role (location, instrument, manner, direction etc) associated with the P itself.

Summary

The whole discussion above was aimed at showing that, aside from the V itself (with the function of Head), the VP contains (or can contain) a number of other elements. In the cases we have examined there have basically been two elements following the V. These two elements have displayed consistent sets of properties:

	NP (= non-oblique)	PP or AP (= oblique)
Formal realisation:	NP (= non-oblique)	PP or AP (= oblique)
Syntactically obligatory:	sometimes	never
C-selected by V:	yes	no
S-selected by V:	yes	no
Linear order:	adjacent to V	not adjacent to V
Moveability:	for special emphasis	freely moveable
Extractability:	yes	no
Referentiality	referential element	frequently non-referential
Semantic interpretation:	direct participant	not participating entity (location, instrument, quality etc)

At this point we need to remember that the generalisation we have just reached is based on a very limited number of examples (essentially sentences such as *Tom smoked a cigarette in the garden/Jane read the article superficially*). It is undoubtedly valid as a generalisation based on examples of this type, but what we will now see - in section B3 - is that once the range of examples is extended, the generalisation becomes untenable without qualification.

B3.   *The NP object vs other satellites (ii)*
        Given the impressive clusters of properties identified at the end of the preceding section, it seems legitimate to conclude that the two sets of elements (those realised as NP and those realised as PP or AP) do not have the same syntactic status and therefore represent different syntactic functions. This difference in syntactic status appears to be a first and foremost a question of degree of dependence on the V (the Head and thus the controlling element in the VP). It is clear that the NP constituent is closely dependent on the V: it may be non-omissible in the presence of a given verb. In the linear order it has to be adjacent to the V (movement to any other position produces a highly marked structure). Semantically it represents a direct participating entity in the scene or event denoted by the V. It is subject to narrow semantic selection requirements on the part of the V. All in all, we might say that the NP is a lexically selected element: it is present because it is selected by the lexical head V. By contrast the other constituents are not directly dependent on the V (they are not C-selected by the V and are not subject to its narrow S-selection requirements; they are not adjacent to the V in the linear order and are by and large easily movable; they do not represent direct participants in the event). Thus on the one hand we find a correspondence between the syntactic status `strictly dependent on V/selected by V' and the formal realisation as NP and on the other a correspondence between the syntactic status `not dependent on V' and the formal realisation as PP or AP. We will formalise this by speaking of the NP constituent of VP as `Complement' and the other constituents - PP and AP - as `Adverbials' or `Modifiers'. The generalisation about the interaction of formal realisation (NP vs PP/AP) and syntactic status (`strictly dependent on V/selected by V' vs `not dependent on V/not selected by V') that appears to emerge from our discussion is undoubtedly an important one. Looking at it from a slightly different angle, we may say that NPs are elements that need to be licensed by a V, while APs and PPs are elements that are in some way self-licensing: in order to be present in a clause they do not need to be selected by any lexical head such as a V.
        Now the generalisation that we have just arrived at about how formal realisation and syntactic function interact is at first sight in conflict with the point that we have been at pains to underline on more than one occastion during the exposition: that formal realisation and syntactic function are in principle distinct. What we will now proceed to do is to show that this generalisation is at one and the same time basically valid and yet in need of heavy qualification.

The first point we will make is a fairly obvious one. The sort of privileged status of NP as the formal realisation of the status `strictly dependent on V' or `selected by V' is undermined by the fact that certain elements that are undoubtedly Adverbials can also be realised as NPs:

1a.   Tom wrote that letter [NP last week]
1b.   Tom wrote that letter [AP recently]
1c.   Tom wrote that letter [PP in the afternoon]
2a.   Tom solved the problem [NP your way]
2b.   Tom solved the problem [AP differently]
2c.   Tom solved the problem [PP in his usual fashion]
3a.   I've seen that guy [NP someplace]
3b.   I've seen that guy [AP locally]
3c.   I've seen that guy [PP in the neighbourhood]

Thus in the examples (1a) and (2a) we find the NPs *last week* and *your way* functioning as Adverbials exactly like the PPs and APs that replace them in the accompanying sentences. The sort of temporal NP Adverbial we see in (1a) is common in many languages, as the following examples show:

4a.   Gianni ha scritto quella lettera [NP la settimana scorsa]
4b.   Jean a écrit cette lettre [NP la semaine dernière]
4c.   o Yiannis egrapse afto to grama [NP tin perazmena ebdomada]
4d.   Hans hat diesen Brief [NP letzte Woche] geschrieben

Alongside temporal NP Adverbials that indicate a specific time deictically we find others that indicate a duration:

5a.   Tom and his friends waited [NP two hours]
5b.   He just sat there [NP all afternoon]
5c.   We played cards [NP all afternoon]

It would be quite wrong, however, to imagine on the basis of the examples presented that NP is a realisation that is generally available for Adverbials, even within the broad semantic types represented by the above example. Indeed, it is a realisation that turns out to be highly limited, and at least in two cases dependent on the choice of a specific lexical item. Thus (2a) above and (2d) following are both perfectly acceptable, but as soon as we replace the word *way* with even a close synonym, the NP realisation becomes ungrammatical and a P is needed:

2d.   Tom solved the problem [NP the opposite way]
2e.   *Tom solved the problem [NP your fashion]
2e'.   Tom solved the problem [PP in your fashion]
2f.   *Tom solved the problem [NP your method]
2f'.   Tom solved the problem [PP on the basis of your method]

Much same is true in the case of the locative NP adverbial exemplified in (3a). But in this case nothing at all may be changed, neither lexical item nor determiner:

3d.   *I've seen that guy [NP that place]
3e.   *I've seen that guy [NP some part of the world]

Even in the realm of temporal NP adverbials many structures that might be expected to be grammatical are in fact ruled out, as the following examples (non-exhaustively) show:

1d.   I didn't see him [that month]
1e.   *I didn't see him [the Christmas period]
1e'.   I didn't see him [PP during the Christmas period]
1f.   *I didn't see him [the summer]
1f'.   I didn't see him [during the summer]
1g.   I didn't see him [that summer]
1h.   I didn't see him [all summer]
1i.   I didn't see him [the whole summer]
1j.   *I didn't see him [Christmas]
1j'.   I didn't see him [this Christmas]

On the basis of the above examples we may perhaps make two generalisations about when a bare NP adverbial denoting a time period is possible. First of all it seems that nouns with a specific temporal denotation (*week, month, summer, Christmas* etc) are preferred to more general ones such as *period*; secondly the use of a deictic determiner (*this, that, last*) or of words such as *all* or *the whole* greatly improves acceptability. From the point of view of our general discussion, however, what is important is not the question of exactly how and when NP adverbials are licensed; rather it is the fact that NP turns out to be a very marginal realisation for an adverbial: it is limited to certain semantic categories and within these to certain specific lexical items. Unlike PP and AP it is not a generally available realisation for the function adverbial.

The evidence against our generalisation about the correspondence between syntactic functions and formal realisations is not, however, limited to the fact that NPs can, under certain conditions, function as adverbials. Indeed it is easy to show that both of the categories - AP and PP - that we have so far associated with the Adverbial function can in fact realise complements. Moreover, it is possible to demonstrate their status as complements on the basis of the same tests that we have used for NPs. Let us begin by comparing the following cases:

6a.   Tom smoked a cigarette [PP on the deck]
7a.   Tom placed his bags [PP on the deck]

In both these clauses we find - as third constituent of the VP after the V and the NP - a PP with a clear locative value. That there is a difference in syntactic function between the two elements, and that this difference corresponds to the Complement-Adverbial distinction established above, becomes clear if we observe the following facts:

a) omissibility of PP:

6b.   Tom smoked a cigarette [PP   ]
7b.   *Tom placed his bags [PP   ]

In (6b) the PP is clearly omissible, whereas in (7b) the result of omitting it is an ungrammatical structure.

b) replacement with *do so* excluding PP:

6c.   Tom smoked a cigarette on the deck and Richard *did so* [in the cabin]
7c.   Tom placed his bags on the deck and *Richard *did so* [in the cabin]

In (6c) *do so* replaces the V and its object NP but the locative PP may be

excluded from the elements replaced (it is thus possible to specify a different location in the second coordinated clause). In (7c), by contrast, the locative element has to be included in the elements replaced by *do so*. It follows that in the second coordinate clause a locative element must be understood as being present and a new value can therefore not be specified.

c) movement of PP:

6d.　　[On the deck] Tom smoked a cigarette [PP　　]

7d.　　[On the deck] Tom placed his bags [PP　　]

In this case we find no difference in grammaticality between the two realisations but rather a difference of markedness. This can be detected in the preferred interpretation in each case: in (6d) the fronting of the locative PP is perfectly possible without this giving rise to a specially emphatic reading, while the effect of the same fronting in (7d) is to strongly invite a contrastive reading. This is illustrated in the following:

7d'.　　[On the deck] Tom placed his bags and other belongings, while [on his seat in the main lounge] he left only a newspaper

d) extractability of constituent from PP:

6e.　　?[Whose ship] did you hear that Tom smoked a cigarette [PP on the deck of[ ]]?

7e.　　[Whose ship] did you hear that Tom placed his bags [PP on the deck of [ ]]?

In this case there is a difference of acceptability which, while slight, is undoubtedly felt by many native speakers: extraction of the element *whose ship* from the PP in (6e) is felt to be less felicitous than the equivalent extraction in (7e).

　　　All in all, then the examples we have just examined provide sufficient evidence to postulate a difference in syntactic function between the PPs in the original sentences (6a) and (7a). Indeed, the results are entirely parallel to those obtained in our earlier comparison of NP and PP/AP constituents, which furnished the basis for the distinction between Complements and Adverbials. Thus in this case too it appears that we are justified in attributing the status of Complement to the PP in (6b), and the status of Adverbial to the equivalent structure in (6a). What we observe then is that the same formal class, PP, can function both as an adverbial and as a complement. It should be noted, however, that this alternation of syntactic function is not accompanied by any change of interpretation: the PP *on the deck* remains a locative in both cases; when it is functioning as complement (and is therefore in a close relationship of lexical selection with the V), it does not take on a special idiomatic interpretation, nor is the choice of P any more restricted than it is when the element is functioning as an adverbial. On the first point we may compare (2b) with the following:

8a.　　The boys picked on Tom

Here it is difficult to make out a convincing case for the PP *on Tom* being a locative; rather the whole expression *pick on something/somebody* must be considered a unit with non-componential meaning (i.e. its meaning cannot be analysed as the sum of its individual parts). Indeed, the meaning is something like "single out Tom for aggressive treatment" and in this case "Tom" is clearly

a participating entity (the undergoer of the action) rather than a mere location. The existence of Vs which select a given P idiosyncratically is well known and is a common feature of the English verbal lexicon. Our intention in presenting an now is not to launch an investigation of their peculiarities but rather simply to underline the fact that a PP can be selected by a V (and consequently function as a complement) and that there are clearly various different types of PP complement. In certain cases a PP can function as complement without losing its inherent locative meaning (as in (2a) above). Alternatively, its connection with the verb may be in some way idiosyncratic; in these cases the semantic characterisation of NP complements as participating entities - as opposed to PP adverbials which indicate a less direct sort of participation, as a location or an instrument for instance - appears to break down: in certain cases the PP appears to represent a directly participating entity. For our general discussion, however, perhaps the most important point that has emerged is that it is perfectly possible for a PP to be selected by the V and yet retain exactly the same interpretation that it would have as a non-selected element or adverbial.

On the second point (regarding the interchangeability of locative Ps) we may compare the following sets of examples:

9a.   Tom placed his bags [on the deck]/[in the cabin]/[under the bed]

9b.   Tom placed his bags [in front of the stairs]/[on a bunk]/[outside the door]/[on the elephant]

10a. Tom smoked a cigarette [on the deck]/[in the cabin]/[under the bed]

10b. Tom smoked a cigarette [in front of the stairs]/[on a bunk]/[outside the door]/[on the elephant]

In both cases a PP headed by practically any locative P will do, irrespective of whether the constituent is functioning as complement or adverbial. Compare this with the following:

8b.   Tom relied on his mother

8c.   The army depended on supplies that came by ship from Europe

In these cases no other P is possible, locative or otherwise:

8b'. *Tom relied from his mother

8c'. *The army depended from supplies that came by ship from Europe

Our conclusion then is that ordinary locative PPs, while perhaps most commonly found as the realisation of an adverbial function, can nevertheless appear - without any change of meaning - as selected elements or complements. If this is true for PPs, what about the other typical realisation of the adverbial function, AP?

We will approach this question on the basis of a new set of examples:

11a. The boys waited [AP impatiently]

12a. The boys behaved [AP impatiently]

13a. The plan failed [AP badly/unexpectedly]

14a. The plan turned out [AP badly/unexpectedly]

15a. Tom folded his shirts [AP carefully]

16a. Tom worded the letter [AP carefully]

Once again a number of (familiar) tests will serve to reveal that the identical APs in these three sets of examples in fact realise different syntactic

functions.

a) omissibility:

11b. The boys waited [AP   ]
12b. *The boys behaved [AP   ]
13b. The plan failed [AP   ]
14b. *The plan turned out [AP   ]
15b. Tom folded his shirts [AP]
16b. *Tom worded the letter [AP]

What we notice is the omission of the AP produces an acceptable result in the first sentence of each pair but not in the second. In our discussion above non-omissibility was treated as a clear indication of complement status.

b) replaceability:

11c. The boys waited [AP impatiently] while the girls *did so* [more calmly]
12c. The boys behaved [AP impatiently] while *the girls *did so* [more calmly]
13c. The first plan failed [AP badly enough] but the second one *did so* [miserably]
14c. The first plan turned out [AP badly enough] but *the second one *did so* [worse]
15c. Tom folded his shirts [AP carefully] and Richard *did so* [sloppily]
16c. Tom worded the application [AP carefully] and *Richard *did so* [sloppily]

Here we notice that the same V and A combinations which failed the omissibility test in (a) also fall foul of the *do so* test. However individual judgements may differ in regard to the examples (for certain speakers the examples given above without an asterisk are less than completely felicitous), there can be no doubt that the second sentence of each pair is considerably less acceptable than the first. In other words, with certain Vs the AP is obligatorily included among the elements replaced by *do so*, while with others this appears not to be the case.

c) movement (fronting) of AP:

11d. Impatiently, the boys waited [AP   ]
12d. *Impatiently, the boys behaved [AP   ]
13d. Unexpectedly, the plan failed [AP   ]
14d   *Unexpectedly, the plan turned out [AP   ]
15d. Carefully, Tom folded his shirts [AP]
16d. *Carefully, Tom worded the letter [AP]

What these examples show is that with the verbs *behave, turn out*, and *word* the accompanying NP cannot be fronted, while with the other Vs this movement is possible (though occasionally at the cost of slight changes in interpretation). The fact that with certain verbs the AP cannot be moved at all suggests that in these cases its syntactic function is not the same as in the other cases. In other words, we seem to have further confirmation of what was already strongly suggested by tests (a) and (b), that with certain Vs an AP may have the status of selected element or complement.

What is particularly interesting about the facts just observed is that the APs in question are neither referential (in the sense of our discussion earlier) nor linguistic representations of participating entities. Like APs which realise an adverbial function, they represent abstract qualities of actions and events.

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There is thus no sense in which they can be compared to NP complements, which as we have seen represent participating entities, except insofar as they are identified by a certain number of the same syntactic tests. Our conclusion has to be that in exceptional cases a V can obligatorily require an AP. It would appear that the Vs in question are semantically incomplete without the addition of a `quality element'[3].

To summarise, in this section we have reviewed a certain amount of evidence which suggests that the generalisation reached earlier to the effect that NP is the formal realisation of the syntactic function Complement while AP and PP are the formal realisations of the function Adverbial or Modifier cannot stand without modification. What we have seen in the present section is that the two functions can in fact be realised by any of the three formal categories - NP, AP or PP - that we have considered. It follows that not all NPs are complements and not all APs and PPs adverbials, though it appears to remain true that these are the privileged realisations of the respective functions.

B4.   *Types of NP complement*

So far the NP constituents that we have seen in VP have had one of two two syntactic functions, depending on whether they are selected by the V or not. In the first case they are considered to be complements (a particular subtype known as the object) and in the second to be adverbials (NP adverbials, as was pointed out in the previous section, belong to a small number of semantic types). To these two types of NP we will now add a third and a fourth. The discussion will start from the following examples:

1a.   Tom telephoned [NP the whole evening]
2a.   Tom wasted [NP the whole evening]
3a.   The film lasted [NP the whole evening]

The difference between (1a) and (2a) is easy to demonstrate. In (1a) the verb alone may be replaced by *do so*, while this is not possible with (2a):

1b.   Tom telephoned the whole evening and Richard did so the greater part of the following morning
2b.   Tom wasted the whole evening and *Richard did so the following

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[3] We may note that the intranstive Vs which select an obligatory `quality' AP tend to have rather abstract meanings, often with little lexical content of their own beyond the idea that the subject entity acted or was involved in some process. Typical examples are: *act badly, end well/badly, fare well/badly, go well/badly, mean well, augur well* etc. Similarly, transitive Vs selecting a (more or less) obligatory AP tend to denote processes that inherently involve the production of a certain effect but where this effect is not actually part of the denotation of the V itself. Thus in the example in the main text *Tom worded/phrased his application carefully* the process of wording or phrasing a document necessarily involves wording or phrasing it in some way but the V itself does not explicitly include this in its denotation. Similarly in Italian the reflexive verb *esprimersi* necessarily involves some manner and is frequently (but not in fact obligatorily) accompanied by a manner A.

morning

In addition, (1a) may not be passivised, while this is perfectly possible in the case of (2a):

1c.   *The whole evening was telephoned

2c.   The whole evening was wasted

Thirdly, the NP in (1a) is in free variation with a PP introduced by *for*, whereas in (2a) no PP may replace the NP immediately following the V:

1d.   Tom telephoned [for the whole evening]

2d.   *Tom wasted [for the whole evening]

Lastly, a PP may be inserted between the V and the NP in (1a) but not in (2a):

1e.   Tom telephoned [from the office] the whole evening

2e.   *Tom wasted [in the office] the whole evening

In short the different syntactic status of the two NPs has been demonstrated very clearly; let us now compare these two cases with (3a). Subjected to the same tests, this clause presents an interesting set of results:

(a) replacement with *do so* is obligatory:

3b.   *The concert lasted the whole morning but the lecture *did so* only half an hour

(b) passivisation is not possible:

3c.   *The whole morning was lasted by the concert and the lecture together

(c) the NP is in free variation with a PP introduced by *for*:

3d.   The concert lasted [for the whole evening][4]

(d) no PP may appear between the V and the NP:

3e.   *Those concerts last in the summer the whole evening

From the discussion above it will be evident that properties (a) and (c), typical of adverbials, are in contrast with properties (b) and (d), which are typical of complements. It is clear then that the NP in (3a) is neither an object complement (if it were it would not behave as in (3c) and (3d)

B5.   *The predicative complement*

We will compare the following structures, which are superficially similar in that in both the verb is followed by an identical NP *a policeman*:

1a.   Tom became [NP a policeman]

2a.   Tom met [NP a policeman]

It is easy to show that, despite the apparent similarity, these NPs cannot be considered to realise the same syntactic function. In order to establish this, we will subject the two structures to a number of tests designed to show that they are different.

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[4] It is perhaps worth noting that replacement of the NP with a *for* PP is not possible in all cases: *The table measured two metres/*The table measured for two metres; The apples weighed two kilos/*The apples weighed for two kilos*. Since one might think that *for* is excluded in these cases on purely semantic grounds, it is perhaps worth noting the use of this P in a non-temporal sense in the following (where the version with the P is to be preferred to the version without): *The estate extended for several kilometres/?The estate extended several kilometres*.

(a) **replaceability with an AdjP**
In (1a) but not in (2a) the postverbal NP can be replaced by an AdjP:
1b.   Tom became [$_{AdjP}$ uncontrollably passionate]
2b.   *Tom met [$_{AdjP}$ uncontrollably passionate]
(b) **passivisation**
The postverbal NP in (1a) may not ordinarily become the subject of a corresponding passive structure, whereas this possibility exists in the case of (2a):
1c.   *A policeman was become by Tom
2c.   A policeman was met by Tom
(c) **replaceability with an `incomplete' NP**
The NP in (1a) but not that in (2a) may be replaced (in certain cases) by a nominal structure which is `incomplete' in the sense that there is no determiner despite the fact that the N heading the phrase has the features [+ countable] and [+ singular]:
1d.   Tom became [$_{NP}$ president]
2d.   *Tom met [$_{NP}$ president]
2d'.   Tom met [$_{NP}$ the president]
Normally NPs headed by [+ countable] Ns in the singular require a determiner (*a, the, this* etc), as is shown by the following (where the NP in question is in subject position):
3a.   *[$_{NP}$ President] gave that order
3b.   [$_{NP}$ The president] gave that order
Thus (3a) and (2d) represent the normal situation (a singular [+ countable] NP without a determiner is ungrammatical; it follows that (1d) is an exception.
      We may note that even in clauses such as (1d) the possibility of having a determinerless NP does not always exist. For instance the following are all ungrammatical:
3c.   *Tom became doctor
3d.   *Tom became mathematician
3e.   *Tom became soldier
3f.   *Tom became Buddhist priest
By contrast, the following are all possible:
4a.   Tom became leader
4b.   Tom became manager
4c.   Tom became captain
The obvious difference between the ungrammatical cases in (3c)-(3f) and the grammatical ones in (4) is that the latter are intrinsically unique: in other words it is part of the conceptualisation underlying the terms *leader, manager* and *captain* that there is only one in relation to any given group or company or ship. Clearly, the same cannot be said of Ns such as *doctor, soldier* or *Buddhist priest*. The last example is particularly interesting since the following would in fact be grammatical:
3f'.   Tom became priest
But, significantly, in order to be judged grammatical it would have to be interpreted as meaning that Tom became priest in a given parish (in which case priest would be understood as a sort of inherently unique function rather

like that of captain or leader); it is not grammatical if it is simply interpreted as meaning that Tom took holy orders.

Interestingly, the ungrammatical examples in (3c)-(3f) would become grammatical if translated into Italian. Indeed, it seems that in this language the determiner can be omitted in contexts similar to (1a) with singular [+ countable] Ns on a much wider basis than in English (i.e. there is no uniqueness requirement).

(e) **agreement with subject NP**

If we replace the singular subject NPs of our original examples with plural NPs, then the NP in (1a) but not that in (2a) has to change to plural:

1e.   Tom and Richard became *[a policeman]/[policemen]

2e.   Tom and Richard met [a policeman]

(f) **replaceability with *so***

The NP in (1a) but not that in (2a) can be replaced with the element *so* (in order for this test to work clearly it is necessary to replace the V of (1a) with *be*):

1f.   Tom is a policeman and [so] is his brother

2f.   *Tom met a policeman and [so] met his brother

What this shows is that the proform *so* can only replace an NP with the syntactic function that is instantiated in the (1) examples; it cannot replace NPs with the syntactic function (object) that they have in the (2) examples. Notice that, once an NP has been used with the syntactic function that it has in (2a) it cannot be replaced with *so*, even if this proform occurs in a syntactic context that would normally allow it:

2f'.   *Tom met an important international scholar and [so] is Richard

Not surprisingly a similar replacement structure is possible in cases where the place of the NP in (1f) is taken by an AdjP:

1f'.   Tom is seriously ill and [so] is his brother

(g) **choice of relative pronoun**

If we attach a relative clause to the postverbal NPs in our original examples, then different *wh-* pronouns must be used:

1g.   Tom became [NP a policeman], which/*who he had never been before

2g.   Tom met [NP a policeman], *which/who he had never met before

Once again, in this respect the NP in (1g) behaves exactly like an AdjP:

1g'.   Tom became [AdjP seriously ill], which/*who he had never been before

The series of tests we have just seen is sufficient to establish beyond any doubt that the syntactic function of the NP in (1a) is different from that in (2a). Whereas the NP in the latter sentence is a standard object, the corresponding NP in (1a) is referred to as a `predicative complement'. As will be clear from our examples this syntactic function can be realised by an NP or by an AdjP (the latter of course is not a possible realisation for the object). Indeed it is possible to coordinate an NP and an AdjP if they both have predicative complement function:

5c.   Jane is [very hard-working] and [our best student].

From the semantic point of view, an important difference between objects and predicative complements is that NPs used in the former function are referential, while predicative complement NPs are generally not

referential. Thus in sentence (1a), though there are two NPs, *Tom* and *a policeman*, only one human entity is actually identified in the sentence. The second NP, *a policeman*, is not understood to identify a second human entity. This is completely different from the situation with (2a), where both NPs are fully referential and identify different individuals.

We will take the term `predicative complement' at its face value and ask the following questions: in what sense is it predicative and in what sense is it a complement? We will start with the second question, which will lead us naturally back to the first.

The status of the `predicative complement' as a complement is shown by the fact that it is non-omissible:

5a.   *Tom became [$_{NP}$]
5b.   *Tom seemed [$_{NP}$]

Despite the non-omissibility of the elements in question, the term `predicative complement' is arguably not well-chosen, since it suggests that the NP or the AdjP is the result of lexical selection on the part of the V in exactly the same way as the object and other types of complement are. While on the one hand it is undoubtedly true that predicative complements are selected by a distinct subcategory of Vs (known as `copular verbs': *be, become, seem, look, sound, turn out, smell* etc) and that the members of this subcategory divide further according to whether they allow their predicative complement to be realised either as NP or AdjP or only as AdjP, there is a sense in which it is the predicative complement that exercises selection in the clause in which it occurs. We can illustrate this as follows: certain Vs such as *argue* allow a complement to be realised in the form of a PP headed by *with*:

6a.   Jane argued [with Tom]

As an alternative to realising a PP, it is possible to say the following:

6b.   Jane and Tom argued

This possibility is by no means available with all Vs that select a *with* PP, however:

6a'.   Jane sided [with Tom]
6b'.   *Jane and Tom sided

What this means is that structures such as (6b) are directly dependent on the selectional properties of the V.

Let us now compare the examples in (6) with the following:

7a.   Jane became equal with Tom
7b.   Jane and Tom became equal
7c.   Jane became angry with Tom
7d.   !Jane and Tom became angry

What we see in these cases is that the possibility of having a structure such as (7b), and the impossibility of (7d) with the appropriate meaning (! is intended to indicate that the structure, though not ungrammatical, cannot be interpreted in the same way as (7b)), cannot in this case be attributed to the V. Indeed, the V (*become*) does not change; rather it is the Adj that changes, and it therefore appears to be this - and not the V - that is exercising the power of selection in this clause. In this respect, then, the predicative complement is more predicative (i.e. more similar to the V, normally

considered the head of the predication) than complement.

The point that we have just made finds confirmation in traditional grammar, which has always refused to consider copular verbs such as *become, seem, be* real predicates, claiming that they are semantically empty. It follows from this that the real semantic content is to be found in the NP or AdjP which accompanies such Vs.

C. Structure of phrasal categories

C1. *Syntagmatic categories and the head*

Having analysed the structure of clauses above and having paid considerable attention to the question of syntactic functions within VP (in particular we have been at pains to establish a distinction between complements and adverbials/modifiers), we are now in a position to take up the question of the structure of syntagmatic or phrasal categories (NP, PP, AP, AdjP, VP) in general. The first area for exploration will be the relation between lexical category functioning as head and the phrasal category as a whole (so far, in fact, we have simply assumed that each phrasal category is the projection of a lexical category). We will begin our treatment of this question by looking at the examples in (1), and we will focus our attention on the constituents in square brackets:

1a.   Tom drinks [wine]
1b.   *Tom drinks [with wine][5]
1c.   Tom drinks [red wine]

Unlike (1a), example (1b) is ungrammatical and it seems evident that its ungrammaticality is due to an incompatibility between the verb *drink* on the one hand and the constituent *with wine* on the other. The question which we will consider is why *with wine* is incompatible while *wine* in (1a) is perfectly compatible. In an attempt to shed some light on the relationship between lexical categories and phrasal categories, we will adopt a very simple-minded approach to the problem. Instead of giving the obvious answer - that *wine* in (1a) is compatible with the verb *drink* because it is an NP and *with wine* is incompatible because it is a PP - we will start from the basic assumption that the verb *drink* (on the basis of its specific complementation requirements) has to be accompanied by an N - or more properly by a phrasal category containing an N - with the semantic feature [+ liquid]. Examining (1a) and (1b) on the basis of this simple assumption, we will say that, on the face of it, the requirement appears to be satisfied in both cases, in that both in (1a) and in (1b) the verb *drink* is indeed followed by a syntactic unit containing an N with the appropriate semantic feature. Following this simple-minded strategy, our

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[5] (1b) clearly presents problems of interpretation (and could be judged unacceptable purely for this reason); however, in our discussion we will confine ourselves to the syntactic plane, asking ourselves why - notwithstanding the presence of the word *wine* it cannot be considered well-formed syntactically.

question therefore becomes: what is there in the string *with wine* which makes it incompatible with the verb *drink*[6]? What is it, in other words, which makes it different from *wine* in (1a)? And why, finally, is the same incompatibility not to be found in the case of (1c)?

In search of an initial hypothesis, we will make a narrow comparison of (1a) and (1b) - ignoring for the moment (1c) - and we will say that the ungrammaticality of (1b) is due to the presence of another word within the bracketed constituent containing *wine*. As a further `refinement' of this hypothesis we might say that this extra word causes ungrammaticality because it occurs between *drink* and *wine* and thus prevents the latter word from being adjacent to the verb that selects it (let us assume that the V and its object have to be adjacent in English, as seems to be suggested by the ungrammaticality of strings like **Tom drank regularly wine*). Now this simple hypothesis is quite clearly ruled out by the perfectly grammatical (1c), where exactly as in (1b) an extra word - *red* - is present and where this word prevents *wine* from being adjacent to *drink*. Clearly then the ungrammaticality of (1b) cannot be explained in terms either of the simple presence of an `extraneous' element in the constituent containing *wine* or in terms of straightforward linear adjacency. Indeed, as the following examples show, any number of words can intervene between the V and the N *wine*:

2a.   Tom drinks [cheap Yugoslav wine]
2b.   Tom drinks [all that horribly cheap Yugoslav wine]

Conversely, the N *wine* may occur adjacent to the V (with any `extraneous' elements following) and the structure may still be ungrammatical:

1c.   *Tom drinks [wine experts]

Let us summarise the situation: (i) in (1b) some mechanism results in *with wine* having different syntactic characteristics (as regards external compatibility) from *wine* alone, while *red wine* has exactly the same syntactic characteristics as *wine* alone; (ii) this syntactic mechanism, whatever it may be, is abstract in character and cannot be explained in straightforward terms of linear order. This abstract mechanism in some way `eclipses' the N *wine* so that its syntactic and semantic characteristics are not transmitted to the containing phrasal category. By contrast in (1c) this mechanism results in the Adj *red* being `eclipsed' in parallel fashion.

The following case seems to be exactly analogous to the cases just examined:

3a.   The boys acted wildly
3b.   The boys acted drunk
3c.   The boys acted wildly drunk

From (3a) and (3b) we can deduce that the verb *dance* can be followed by an A such as *wildly* or by an Adj such as *drunk.* These two choices correspond to a difference in interpretation: (3a) tells us that the boys' behaviour was in

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[6] We may note that the string of words in question, *with* + *wine*, is not ungrammatical as such: in fact it is found in (perfectly well-formed) sentences such as *They always serve lunch [with wine]*.

some way out of control, while (3b) tells us that they pretended to be drunk. In (3c) we once again have a string of elements such that the V *act* is followed by the A *wildly*; in this case however the interpretation is not that the boy's behaviour was actually out of control but that they were deliberately pretending to be extremely drunk. Once again, then, we have an instance of a word being `eclipsed' syntactically: in (3c) the A *wildly* is no longer co-interpreted with the V; rather it is forcibly co-interpreted with the Adj *drunk*. Put slightly differently, in (3c) it is *drunk*, not *wildly*, that interacts directly with the V - (3c) is therefore the same as (3b), the only difference being that the degree of assumed drunkenness is specified through a modifying element. Once again, the problem that we are facing consists in explaining what abstract syntactic mechanism, given a constituent containing more than one element (lets say A and B), results in one of the elements being dominant and the other being subordinate. In other words, what determines the following results?

4a. $[_{BP}$ B + A] or $[_{BP}$ A + B]
4b. $[_{AP}$ B + A] or $[_{AP}$ A + B]

Alternatively, representing (4b) as tree diagrams:

4c.   AP   AP

        A   B   B   A

In (4c) the broken line is intended to show that the constituent in question is somehow eclipsed, i.e. it does not succeed in transmitting its features to the superordinate structure. We can now modify the representations in (4) so that they show what actually happens in the examples discussed above:

5a. $[_{AdjP}$ wildly <u>drunk</u>]
5b. $[_{PP}$ <u>with</u> wine]
5a'.   [<u>Adj</u>P]

            wildly (A)   <u>drunk</u> (Adj)

5b'.   [<u>P</u>P]

          <u>with</u> (P)   wine (N)

We will account for the mechanism by which one element which succeeds in transmitting its syntactic characteristics to the superordinate structure (as illustrated in (5) by positing a syntactic function within phrase structure called the Head function. What we mean by this is that any phrasal category will have one element within it that is dominant; it will be this element, and not the others, that will determine the syntactic characteristics of the whole unit. Notice that by `syntactic characteristics' we mean first and foremost the category (NP, VP, PP, AP etc). But in fact it is not only a question of overall categorial determination, as is shown by the following (previously presented

as (1d)):

6a.   *Tom drinks [wine experts]

What we have following the V in (6a) is a string of two Ns. In principle, then, one of the main requirements of the V *drink* (that it should be followed by a constituent that has nominal characteristics) is satisfied. But of the two Ns - *wine* and *experts* - only the former has the appropriate semantic feature - [+ liquid] - to combine with *drink* and unfortunately in this case it is not this N which is head of the structure. Indeed, the ungrammaticality of (6a) derives from the fact that the features (in particular the first of the list) of the NP are those of *experts* - [+ human], [+ countable], [+ plural] - and not those of *wine* - [+ liquid], [+ uncountable], [+ singular].

Before closing this section we will make four brief but important points that are relevant to the function of Head. The first is that recognising (as we have done) that in any phrasal category there will be one element with a special function necessarily implies that the other elements that can occur in the phrasal category have different functions. In our analysis of VP above we have already recognised that within this phrasal category elements are to be found with two contrasting functions, complement and modifier (adverbial). In the following section we will investigate whether these same functions are to be recognised in the other phrasal categories. If this turns out to be the case, then clearly we will have the basis for a hypothesising that all the phrasal categories have basically the same abstract stucture.

The second point was perhaps implicit in the main discussion above but it is perhaps as well to underline it: the Head function is realised by a lexical level element, that is to say an N, V, A, Adj, or P. From our discussion of complements and modifiers in VP we know that these function are realised by phrasal level elements (NP, PP, AP, AdjP etc). But since we did not carry our analysis of VP through to completion we do not for the moment know if all syntactic functions in this category - apart from the Head function obviously - are realised by full phrasal categories. And since we have yet to study the internal structure of other phrasal categories, we will need to check whether these are also obligatorily realised by full phrasal categories.

The third point we will make before closing this section concerns terminology: for structures which have a head (i.e. `headed' structures) and which are therefore projections of one of the elements contained in the structure itself, the term `endocentric' is in common use; endocentric structures contrast, then, with those that are not projections of a single element. These are commonly referred to as `exocentric'. On the basis of the analysis we have given so far, the clause, which has been seen to be composed of two immediate constituents of equal importance (NP + VP), would be considered a exocentric structure. Clearly, if it all phrasal categories are endocentric structures, this at least constitutes a *prima facie* reason for thinking that all syntactic structures, the clause included, may be endocentric.

The last point is a straightforward one. So far we have assumed that all the major recognised lexical categories - V, N, P, A, Adj - project to phrasal level. Alongside these major lexical categories there are a number of minor categories which contain function words rather than content words: for

instance the class of complementisers (*that, whether, if* etc), the class of auxiliary verbs (*be, have, must, can, will*) and the class of determiners/pronouns (*the, this, that, some* etc). Given that the full lexical classes all project to phrasal or syntagmatic level, what about these?

C2.   *The syntactic status of non-head elements in phrase structure*
        In the preceding discussions we have focused our attention on various functions in phrase structure: the complement/modifier distinction in VP and the Head function in all phrasal categories. In this section our aim will initially be to investigate a further syntactic function found in phrasal categories and give an adequate characterisation of this in relation to the other functions. Once this has been done we will attempt to draw together the various strings and propose a general account of the structure of phrasal categories.
1a.   [PP right outside the door]
2a.   [Adj.P very satisfied with the results]
In both structures we find that the head - the P *outside* in the first case and the Adj *satisfied* in the second - is flanked by two satellite elements. In the following these are bracketed:
1a'.   [PP [right] outside [the door]]
2a'.   [Adj.P [very] satisfied [with the results]]
We will begin by focusing our attention on the pre-head satellites *right* and *very*. From the semantic point of view it is clear that these both function as `intensifiers' of their respective heads. What is interesting is that despite this substantial identity of function, the two elements are not interchangeable:
1b.   *[PP [very] outside [the door]]
2b.   *[Adj.P [right] satisfied [with the results]]
Wanting to describe this situation as objectively as possible, we might say that between the pre-head satellite element and the head itself there is `covariation': if one is changed, the other has to be changed (and vice-versa). Such covariation is interesting because it is invariably an indication of an underlying syntactic relationship of selection. Indeed, we may safely assume that in our examples the pre-head satellite is selected by the head; the question that we clearly need to address is what is the basis of this selection.
        Turning our attention to the post-head satellite element, we find similar (or apparently similar) covariation:
1c.   *[PP [right] outside [with the results]]
2c.   *[Adj.P [very] satisfied [the door]]
Once again we will assume that the observable covariation is the result of selection exercised by the head, and we will ask the same question as before: what is the basis of this selection? At first sight, it seems reasonable to expect that we have two different types of selection relation: on a formal level the pre-head and post-head elements are very different (they belong to different categories: APs for the pre-head satellites, NPs or PPs for the post-head ones) and then there is the simple fact that they occupy different syntactic positions and cannot be permuted:
1d.   *[PP [the door] outside [right]]

2d.   *[$_{Adj.P}$ [with the results] satisfied [very]]
or rearranged in other ways:
1e.   *[$_{PP}$ [right] [the door] outside]
2e.   *[$_{Adj.P}$ [very] [with the results] satisfied]
1f.   *[$_{PP}$ outside [the door] [right]]
2f.   *[$_{Adj.P}$ satisfied [with the results] [very]]
Since one of the resources syntax uses to make underlying relationships clear is linear order (relations of precedence), we will normally expect that when two elements occupy distinct positions in the linear order they correspond to - or are realisations of - different underlying syntactic functions. What we are building up to, then, is the idea that the satellite elements in our two original examples are not simply `modifiers' (in some loose pretheoretical sense) of the main lexical element or head but realisations of two distinct syntactic functions. Since they are both dependent on selection on the part of the head, it seems reasonable to assume that the two functions - whatever they are - somehow constitute realisations of the syntactic potential of the head.

The simple fact that we are positing the existence of two different functions within phrasal categories apart from the head function itself means that we will have to face the problem of how to represent these relations in formal - i.e. configurational - terms. In very simple terms, given the possibility of having three elements - realising three different functions - within a phrasal category, the problem becomes one of establishing whether one of the two non-head elements (satellites as we have been calling them so far) has a closer relation with the head than the other. If this turns out to be the case, our commitment to giving explicit configurational representations (in the form of syntactic trees etc) we will naturally want to recognise this closer relationship in configurational - and therefore hierarchical - terms.

We will give a very simple illustration of the above point. Assuming that within a phrasal category we have three elements - one essential element H (the head) and two satellite elements Z and Y (Z in a pre-head position and Y in a post-head position) - we will need to establish which of the following correctly represents the relations between these three elements (or more specifically the relations between the head and the two satellite elements):
3a.   Z - H - Y
3b.   Z - (H - Y)
3c.   (Z - H) - Y
Representation (3a) says that the two satellite elements each have a direct relation with the head; it does not assume that either of the satellites has a closer relationship with the head than the other. Given that it makes no distinction between the two relations it has no need for a hierachical structure. The representations (3b) and (3c) are fundamentally different from (3a): they both assume that one of the two satellite elements has a privileged relation with the head. In (3b) it is the post-head satellite and in (3c) it is the pre-head one. In terms of our original examples these representations correspond to the following groupings of the actual linguistic elements:
Representation (3b):
1g.   [$_{PP}$ [right] [outside [the door]]]

2g.   [$_{Adj.P}$ [very] [satisfied [with the results]]]]
Representation (3c):
1h.   [$_{PP}$ [[right] outside] [the door]]
2h.   [$_{Adj.P}$ [[very] satisfied] [with the results]]
In either case the privileged relation is presented as a sort of inner nucleus (indicated by the brackets). Both of these representations are inherently hierarchical; in fact they translate into the following (XP represents the phrasal category which is the full expansion of the head X; the node representing the inner nucleus - the syntactic unity of the head X & Y or Z & the head X -is symbolised by ?:

3b'.   XP

        Z   ?

                X   Y

3c'.   XP

        ?   Y

    Z   X

In these representations the inner nucleus (consisting of the head and the satellite element with which it has a privileged relation) appears at a deeper level of embedding. The question that arises is (naturally) which of these representations is correct, the one - (3b') - which recognises the inner nucleus as consisting of the Head and the Y element or the one - (3c') - which recognised an inner nucleus composed of the Z element and the Head. In order to answer this question we will investigate the relations between the two satellite elements and the Head a little more closely. First of all we will make a general point about types of selection.

        In order to illustrate this general point about types of selection we will introduce the following examples, all of which show covariation between the main lexical verb and the element (or elements) immediately preceding it, excluding the subject NP *Jane*:
4a.   [Jane] has **place**d the sandwich on the table
4b.   [Jane] is **plac**ing the sandwich on the table
4c.   [Jane] should **place** the sandwich on the table
4d.   [Jane] should have **place**d the sandwich on the table
The covariation in each case is evident in the fact that the lexical V *place* assumes a different morphological form (*placed, placing, place*) depending on the choice of immediately preceding element(s) (*has, is, should, should have*). If these exact covariation patterns are not observed, clear agrammaticality is the result:
4a'.   *[Jane] has **plac**ing the sandwich on the table

4b'.   *[Jane] is **place**d the sandwich on the table
4c'.   *[Jane] should **plac**ing the sandwich on the table
4d'.   *[Jane] should have **place** the sandwich on the table

We will assume - as we have already done above - that any systematic covariation is the observable sign of an underlying syntactic relationship. In our examples it appears evident that the element preceding the V *place* exercises some sort of selection over the V, and at first sight we might be led to think that this selection is similar to that exercised by the V over the elements that follow it (see discussion of syntactic relations in VP above). Indeed in this case too we find covariation, in the sense that if we change the V we must change the elements that follow (in the examples that follow the Vs *disappear* and *hand* replace the V of the original examples in (4)):

5a.   *Jane disappeared [the sandwich] [on the table]
5b.   *Jane handed [the sandwich] [on the table]
5a'.   Jane disappeared [   ] [   ]
5b'.   Jane handed [the sandwich] [to Michael]

So what is the difference between the type of covariation in (4) and the type we have just illustrated in (5)?

The first point that we will make in answer to this question is as follows: the covariation observed in (4) exists between the selecting elements (*have, be, should*) and the following element, which must obligatorily belong to the lexical class V. No other lexical class can be involved in this:

6a.   *Jane is **coffee**ing
6b.   *Jane has **contribution**ed to the fund

These clauses are ungrammatical because the elements in question (*coffee*, *contribution*) belong to the lexical class N. Thus there is no sense in which we have different choices of category that follow depending on which individual selecting element we choose. This is clearly not the case with the covariation between the lexical V and the elements that follow it (and are arguably lexically selected by it). The latter may be NPs or PPs or APs (to mention only the most obvious cases) and the choice depends on the individual lexical V. Thus it seems legitimate to conclude that the covariation observed in (4) is specific in some way to the category V. Even more significantly, this same covariation is very limited in its effects: it consists in the choice of a given morphological form of the lexical V (*placing, placed, place*) and does not involve the exclusion of any lexical V as such (with almost no exceptions - see discussion below). Thus whatever lexical V we happen to have, it will simply assume the form required by the preceding element:

7a.   [Jane] has **hande**d the sandwich to Michael
7a'.   [Jane] has **disappear**ed
7b.   [Jane] is **hand**ing the sandwich to Michael
7b'.   [Jane] is **disappear**ing
7c.   [Jane] should **hand** the sandwich to Michael
7c'.   [Jane] should **disappear**
7d.   [Jane] should have **hande**d the sandwich to Michael
7d'.   [Jane] should have **disappeare**d

By contrast the selection exercised by the lexical V is such as to exclude

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certain possibilities completely. Thus the V *place* in our original examples - (4) - must be followed by an NP and a locative PP and is not acceptable with any other combination of elements:

8a.   *Jane placed [the sandwich]

8b.   *Jane placed [on the table]

8c.   *Jane placed [   ]

8d.   *Jane placed [the sandwich] [to Michael]

And the selection properties of the lexical V may even extend to specification of the semantic features that acceptable representatives of the chosen categories must have:

8e.   *Tom placed [the theory] [on the table]

Thus we have one type of selection that simply operates to give us one morphological form or other of the element that follows. It does not extend to the choice of that element as a whole. Thus, unlike the selection exercised by the lexical verb over the elements that follow it, the selecting element in this case does not identify one subset of possibilities as admitted and another subset as excluded: any member of the class V is acceptable, none is excluded. The second type of selection, by contrast, does just this: a V like *place* may be followed by certain types of element (defined in categorial terms - cf. the term C-selection used above - and also as possessing certain semantic requisities - cf. the term S-selection) and not by others. It seems clear then that we are dealing with very different types of covariation and thus with very different types of selection.

        We will make one last point about the selection observed in (4): it is exercised by a very limited number of elements. Apart from *have, be* and *should*, the list is very short and includes the other `modal auxiliaries': *must, can, will, shall* etc. Together these elements form a minor lexical class, said to be a `closed class' in the sense that new members may not be added in the way that it is possible to invent new members of classes such as V, N, A or Adj. By contrast, the selection exercised by a lexical V is, as we will see, typical of open class elements.

        To summarise, then, the sort of selection visible in (4) is special for the following reasons:

(i)   it operates exclusively in relation to a single lexical class, V.

(ii)   it consists in the choice of a given morphological form for whatever member of the class V is chosen. It does not consist in the exclusion of certain Vs and the inclusion of certain others.

(iii)   it is exercised by a restricted group of closed class items.

Taken together, what all this suggests is that the syntactic relation underlying the covariation observed in (4) is basically functional, rather than lexical, in nature. In other words, the selecting elements *have, be, should* etc are specific to the lexical class V and together represent a set of choices that are connected with that lexical class and no other.

        What we will now attempt to demonstrate is that this distinction between functional and lexical selection is to be found not just in relation to V but also with the other main lexical categories. We will begin by examining the

remaining lexical categories to see if they exhibit properties of lexical selection. In other words we will look first of all to see if the other lexical classes can have complements. In all cases, we will assume that where a lexical head of whatever class is obligatorily accompanied by another element (YP) that this element is lexically selected and therefore a complement of the head. We will begin the discussion by considering the class N. The element whose status we wish to determine in the PP *of diplomatic relations*:

9a.   [NPthe hasty establishment [of diplomatic relations]]

A simple test of omission is sufficient to show that the PP *of diplomatic relations* has the status of obligatory element:

9b.   *[NP the hasty establishment [   ]][7]

It might be objected that an N *establishment* which can appear without a following PP does in fact exist, as illustrated in the following:

9c.   [NP The establishment] has always been against a real reform of the
       education system

Here, however, it is quite clear that the interpretation of the N *establishment* is quite different from what we have in (9a): in the former case the N denoted a process, while in this case it is not a `process noun' at all; rather its denotation is entirely concrete (it denotes a particular group of people who are especially powerful or influential in any given country or area of life). Thus the N *establishment* is used in two completely different ways: when it is used as a process N it is obligatorily followed by a PP and may thus be said to lexically select such an element. We may remove any doubt in this respect by replacing the N *establishment* with *re-establishment* (which is used only as a process N and has no concrete denotation). Once again we see that the PP cannot be omitted:

9a'.   [NP the hasty re-establishment [of diplomatic relations]]

9b'.   *[NP the hasty re-establishment [   ]]

Exactly the same alternation between a `process' denotation and the obligatory presence of a PP on the one hand and a concrete denotation and

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[7] Note that the impossibility of omitting the PP in (5b) cannot be explained simply claiming that its omission would lead to the loss of indispensable information; in fact, the PP proves to be non-omissible even in contexts where the information that it carries is already present in the discourse and is thus recoverable, as in the following example:

(i)   [1] It has often been remarked that this was hardly the most appropriate time
       for the United States to seek to establish diplomatic relations with its old
       enemy. [2] Indeed it was to become clear only a little later that this hasty
       establishment *(of diplomatic relations) simply contributed to masking the real
       nature of the relationship with the government and led to a signal failure some
       years later to appreciate the degree to which ...

The asterisk before a constituent placed between rounded brackets - *( ) - signifies that the structure must be considered ungrammatical if the constituent in question is omitted.

the absence of a PP can be observed in the following:

10a.   [NP the careful examination of the documents] took several hours

10b.   ?*[NP the careful examination [   ]] took several hours

10c   [NP the examination] was scheduled for the end of the month

Thus (10a), where the PP is realised, is perfectly acceptable, while (10b), where it has been omitted is ungrammatical; by contrast, (10c) is grammatical but significantly there is a shift in the interpretation: *examination* is no longer interpreted as denoting a simple process of `examining' but rather is understood to have a specialised - and more concrete - meaning (a particular type of conventional event common in schools and universities).

Alongside the examples just given, it is possible to cite many cases where PPs can occur in the post-head position but without being obligatory; in fact, we find many cases in which the PP is optional:

11a.   [NP the portrait [PP of the queen]]

11b.   [NP the portrait]

11c.   [NP the corner [NP of the road]]

11d.   [NP the corner]⁸

In addition, we find nouns which do not permit a PP introduced by *of*:

11e.   * [NP the hit [PP of that ball]]

11f.   [NP the hit]

11g.   * [NP the push [PP of the pram]]

11h.   [NP the push]

The facts just illustrated, which show that alongside Ns which select an obligatory PP complement there are others which are non-obligatorily accompanied by a PP and others again which exclude a PP, should not surprise us. What they reveal is that lexical selection on the part of Ns is exactly like that of Vs: Ns, exactly like Vs, may be divided into subcategories depending on whether they strongly require, optionally admit, or simply exclude a complement.

12a.   Jane was [AdjP very mindful [PP of the advice she had been given]]

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⁸ The question of the presence or otherwise of a PP following the N within an NP is in reality extremely complex: in fact, not all PPs which occur in this position can be considered elements selected in the same way as the NPs which follow the verbs within the VP. This is due to the possibility of having with a large part of nominal lexis a generic relation called `possession' which can be realised as a PP (introduced by *of*).

i.   [NP the cactus [PP of that old man from Chicago]]

ii.   [NP the cactus]

In fact, unlike heads (Ns) inside the NPs of (11a) and (11c) - *portrait* and *corner* - which are intrinsically `relational' in the sense that a portrait is necessarily a portrait of something and a corner is necessarily a corner of something, the N *cactus*

does not imply as such any relation with another entity; the only relation which can be expressed in these cases is therefore the generic and non-inherent one of `possession'.

12a'. *Jane was [$_{AdjP}$ very mindful]

12b. The decorations are [$_{AdjP}$ very reminiscent [$_{PP}$ of a vanished epoch]]

12b'. *The decorations are [$_{AdjP}$ very reminiscent]

12c. Tom's work is [$_{AdjP}$ totally devoid [$_{PP}$ of imagination]]

12c'. *Tom's work is [$_{AdjP}$ totally devoid]

As with verbs and nouns, there are adjectives which can not be followed by a PP:

12d. *The battle was [$_{AdjP}$ very indecisive [$_{PP}$ of the country's fate]]

12d'. The battle was [$_{AdjP}$ very indecisive]

12e. *Tom's business ventures were [$_{AdjP}$ very creative [$_{PP}$ of employment]]

12e'. Tom's business ventures were [$_{AdjP}$ very creative]

We can also find adjectives that occur with a PP, but not obligatorily:

12f. Jane was [$_{AdjP}$ very contemptuous [$_{PP}$ of our efforts]]

12f'. Jane was [$_{AdjP}$ very contemptuous]

12g. Jane was [$_{AdjP}$ very insistent [$_{PP}$ on her rights]]

12g'. Jane was [$_{AdjP}$ very insistent]

12h. Jane was [$_{AdjP}$ very intolerant [$_{PP}$ of our point of view]]

12h'. Jane was [$_{AdjP}$ very intolerant]

Basically, then, we can say that adjectives have lexical selection properties that are comparable to those of Vs and Ns.

Turning now to As and Ps, there is little difficulty in demonstrating that the latter can lexically select elements and that these elements can be obligatory. Indeed, in traditional grammar the distinction between P and A was largely founded on the idea that Ps are always followed by an NP complement while As are not. Examples of Ps that are obligatorily followed by NPs are the following:

13a. Tom threw the hammer [$_{PP}$ at [$_{NP}$ the wall]]

13a'. *Tom threw the hammer [$_{PP}$ at [   ]]

13b. Tom drove [$_{PP}$ to [$_{NP}$ the station]]

13b'. *Tom drove [$_{PP}$ to [   ]]

Once again, alongside these elements that are obligatorily accompanied by a complement, we find cases like the following:

13c. Tom crossed [$_{PP}$ over [$_{NP}$ the railway line]]

13c'. Tom crossed [$_{PP}$ over [   ]]

13d. Tom crawled [$_{PP}$ through [$_{NP}$ the pipe]]

13d'. Tom crawled [$_{PP}$ through [   ]]

13e. Tom walked [$_{PP}$ along [$_{NP}$ the edge]]

13e'. Tom walked [$_{PP}$ along [   ]]

In all these cases - and many others - the P can freely appear without an NP complement. In traditional grammar words such as *over, through* and *along*, when they appear without a following NP, were analysed as As; by contrast they were said to be Ps when followed by an NP. In the light of what we saw with the other lexical categories examined above - that all of them appear to contain, alongside members that are obligatorily accompanied by a complement, other members that optionally select a complement - there would be seem to be little reason not to extend this analysis to Ps and recognise that the unaccompanied heads in (13c'), (13d') and (13e') are Ps

that can but need not select an NP complement. An analysis of this type has two advantages: in the first place it eliminates an unnecessary complication (the traditional analysis involved listing the words in question twice, once as Ps and once as As). Secondly it brings the category P into line with the other categories by recognising that its members behave in exactly the same way as those of the other categories. There is also a third advantage, which has to do with the element *out*. This element behaves somewhat differently in standard British English and in American English:

14a.   Tom climbed out of the window
14b.   Tom climbed out
14c.   Tom climbed out the window

Sentence (14a), where *out* is followed by a PP, is grammatical in standard British English, while (14c), where it is followed by an NP, is ungrammatical. The latter sentence is, however, fully grammatical in American English. In both standard varieties (14b) is fully grammatical. In this last case *out* would traditionally be analysed as an A, while in (14c) it would be considered a P. Sentence (14a) then constitutes a problem: in traditional terms *out* in this sentence is neither a good candidate for the category P, since it is not followed by an NP, nor a good candidate for analysis as an A, since in traditional grammar these elements are generally assumed to occur without complements. If, however, we adapt the analysis suggested above, it becomes possible to say that *out* is a P in all three cases. It would belong to the subcategory of Ps whose complement is not obligatorily realised but with the extra peculiarity that when it is realised this complement takes the form of PP in one variety of English and NP in another.

Moving on now to the category A proper, it has to be acknowledged immediately that lexically selected complements are much rarer than with the other lexical categories. Thus many Adjs which either require of freely admit a complement PP have derivationally related As which don't allow them. The following are standard examples:

15a.   The boys are [AdjP proud [of their results]]
15a'.   *The boys behaved [AP proudly [of their results]]
15a".   The boys behaved [AP proudly]
15b.   The boys are [AdjP happy [with their results]]
15b'.   *The boys behaved [AP happily [with their results]]
15b".   The boys behaved [AP happily]

Although As which fail to select a complement undoubtedly represent the norm for the category, there are a number which do exist:

15c.   [AP Fortunately [for us]] there was another train just ten minutes later
15d.   [AP Indépendamment [de notre volonté]] le magasin reste fermé jusque'à 18h.
15e.   [AP Indipendentemente [di quello che è stato deciso]] continueremo la nostra lotta

Undoubtedly the fact that few As behave like those in (15c) - (15e) requires an explanation; laying this problem aside, for the purposes of the present discussion we will assume (on the basis of the last three examples and others like them) that As can select complements and we will therefore claim that this

property characterises all the main lexical categories. We will now go on to consider the other `satellite' element discussed above (the one occurring in pre-head position).

What we observe in the case of these elements is that they can occur with all the main lexical categories:

16a.   [NP **an** authority [PP on tropical diseases]]
16b.   [AdjP **very** worried [PP about the results]]
16c.   [PP **right** through [NP the middle]]
16d.   [AP **very** differently [PP from us]]
16e.   [PP **completely** destroy [NP the manuscript]]

When speaking of this pre-head element earlier we observed that it was not interchangeable with the post-head element and advanced the hypothesis that it was the realisation of a different syntactic function (we did not give a name to the function it realises). We further noticed that the pre-head element that accompanies a head of one lexical category is generally not admitted by another category (though this requires some qualification: it is already clear from (16b) and (16d) that Adjs and As can occur with the same element (*very*)). That the type of pre-head satellite depends in the first instance on the lexical category of the head is clear from the following:

16a'.   *[NP **very** authority [PP on tropical diseases]]
16b'.   *[AdjP **right** worried [PP about the results]]
16c'.   *[PP **very** through [NP the middle]]
16d'.   *[AP **right** differently [PP from us]]
16e'.   *[PP **very** destroy [NP the manuscript]]

The fact that the type of pre-head satellite appears to be fixed for each type of lexical head cannot but recall our discussion of selection above. In this discussion we compared covariation between auxiliary verbs and lexical verbs on the one hand and between lexical verbs and their complements on the other. One thing that we observed during this discussion was that the covariation between the lexical verb and its complements could involve the selection by the former of practically any category (NP, PP, AP etc), while the selection exercised by an `auxiliary' never resulted in any category being chosen other than V. On the basis of this exclusive relationship between the `auxiliary' and the V we suggested that the relation linking them might not be one of lexical selection but instead might be functional in character. We said in fact that the auxiliary was a functional element realising various choices (aspect) typical of the category V.

Now in the case of our considering the fact that the type of pre-head element also appears to be a function of the category of lexical item occurring as head, it seems reasonable to assume that here too we have a functional relation. This would appear to be confirmed by the semantics of the pre-head elements in our examples (16) above: either we have elements that have a semantic function of degree modification in relation to the head (*very, right, completely*) or elements (*an* in (16a)) that participate in some functional system specific to the head (referentiality in the case of the NP). Thus we seem to have elements selected on a categorial basis for the given function that is required by the lexical category in question (Ns having different

functional requirements from Ps or As, for instance). Notice that when we say that this prehead element is selected `on a categorial basis' we do not mean the same thing as we meant when we said (earlier) that a lexical head exercises C-selection or categorial selection. What we meant with this latter term was that a given head selects the category of element (NP, PP, AP etc) that may accompany it out of a list of possibilities that are all available at least in principle. With the functional elements that we are concerned with here there seem to be very heavy restrictions that apply not to individual representatives of the category but to the category as a whole.

For the pre-head categorially selected element we will use the term Specifier, and for the post-head lexically selected element we will use the term Complement[9] (already used in our discussion of VP). Thus element X is a specifier and element Y a complement). We obtain therefore the following order of elements:

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[9] The term `complement' refers therefore to a syntactic element - which can be a syntagm or a clause - selected by a lexical head; as we have already had occasion to note, not all lexical heads select a complement (in general, to select a complement a lexical element must have a `relational' meaning, that is a meaning such as to presuppose an involvement of other entities: among Ns, for example, *destruction* and *portrait* have a meaning of this kind, while *cat* and *teaspoon* do not). As we noted in the text, all the principle lexical categories permit complements, though it remains true that projecting a complement characterises certain lexical categories - V & P -much more than others - N, Adj & A. Given that `complement' is a term which covers any element whatsoever that is selected by a lexical head, the objects of verbs (both direct and indirect) must also be counted as complements (of which they represent a particular type); the same is true for a PP selected by a verb, as in the case of *Tom shouted [at his sister]* (indeed these elements are sometimes referred to as `prepositional complements' or even `prepositional objects'). Given that the defining property of a complement is the fact that it is selected by a lexical head, those elements that are not lexically selected cannot be considered complements. As a consequence, the term `complement' is **not** adopted for circumstantial elements. For example in the sentence *Tom posted the letter yesterday at the main post-office before going to the yoga class* only the NP *the letter* can be considered a complement. Only this (of the elements in VP) is selected by the verb *post*; only this represents an entity involved in the specific action of `posting'. The other constituents represent other aspects of the event (its temporal and spatial coordinates, the cause etc) which are common to any event and do not specifically distinguish an event of `posting' from any other type of event. In Italian these cicumstantials are referred to as `avverbiali' or `aggiunti' in recent work in syntax; the terms used in the Italian (or rather, Romance) grammatical tradition - `complemento di tempo', `complemento di luogo' etc - are avoided and will be avoided here.

17a.   Specifier - Head - Complement[10]

In the light of what has been stated above regarding the two relations, it will be clear that the one between complement and head, as it is founded on the specific properties of the lexical head, affects the latter in a much more direct way than the other, which is founded on a generic categorial compatibility. Thus, if we wish to provide the two elements, specifier and complement, with precise collocations within the hierarchical structure (as we have set out to do) and if we wish to accept the fact that the relation between head and complement is one of lexical selection, we will choose - between the two representations (3b) and (3c) above - the one which represents as an `internal nucleus' the union of the head and the complement, that is, (3b), which we reproduce here, substituting X and Y with the terms just introduced:

17b.   [Specifier [Head - Complement]]

This choice seems to be confirmed by the interpretation of coordinated structures such as the following, where the Specifier is understood to apply to both combinations of P and complement:

17c.   two metres [above this point] and [below that point]

This internal nucleus will then be recognised as an intermediate constituent in the structure of phrasal categories, that is to say a constituent that is neither a lexical level item nor a full phrasal projection. For this intermediate constituent we will use the notation X' ("X bar"), where X stands for any lexical category. In the following (Italian) examples (taken from Rizzi 1988:) the intermediate constituent is identified:

18a.   [$_{PP}$ molto più [$_{N}$' libri [$_{PP}$ di linguistical]]]

18b.   [$_{AjP}$ troppo poco [$_{A}$' interessato [$_{PP}$ a questo]]]

18c.   [$_{PP}$ tre chilometri [$_{P}$' dopo [$_{NP}$ il confine]]]

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[10] In order to see that this order does not hold for all languages, it is sufficient to consider the two German examples that follow: they show the complement preceding rather than following the head:

1a.   Wir müssen [$_{VP}$ Papier kaufen]

   we - must - paper - buy

   `we must buy paper'

   1b.   Hans ist [$_{Adj.P}$ mit den Ergebnissen zufrieden]

   Hans -is - with the results satisfied

   `Hans is satisfied with the results'