

Assertion and finiteness

The distinction between finite and non-finite verb forms is well-established since the days of the Greek grammarians; but it is not particularly well-defined. Why is it, for example, that *has* is finite, whereas *given* is non-finite, although both of them carry tense and aspect information? Which general property makes *had* sometimes finite and sometimes non-finite, although in neither case it is inflectionally marked for agreement? In this paper, five arguments will be given to demonstrate the following two points:

1. On some level, the structural representation of a finite declarative clause contains an element AST (for "assertion").
2. This element is structurally linked to the finite component of the verb; in fact, being the carrier of AST is the main function of finiteness.

Thus, the distinction between finite and non-finite forms is not a mere surface phenomenon. It reflects the presence or non-presence of an abstract operator in the representation of an utterance.¹

Both theses will become clearer as we go through the five arguments. Taken together, they have numerous and important consequences for the syntax and semantics of finite clauses, but also of non-finite constructions. In section 1, I will present the five arguments, and in section 2, some of the structural consequences will be sketched. In both parts, the presentation will be entirely non-technical, although for clarity of exposition's sake, some simple notational conventions are used. Since the problem is relatively neutral with respect to the particular assumptions of some specific syntactical or semantical theory, I also tried to keep the presentation as neutral as possible. The only assumption made is that there is a surface level and a more abstract level of representation, called here LEVEL*, which are related to each other by a number of partly general, partly specific rules. It is not excluded that there are more levels of representation, but no particular position is taken here with regard to this point.

1 Both theses easily extend to non-declarative sentences and to subordinate clauses; but in the present context, this will not be systematically discussed; see, however, sections 1.2 and 1.3, for some remarks.

1. The arguments

Each of the five arguments outlined in this section deals with a complex phenomenon, and thus would deserve, and in fact requires, extensive discussion. In the present context, however, what matters is not so very much the particular phenomenon with all its potential ramifications but its role for assertion and finiteness. Therefore, I will concentrate more on the general lines of the argument and leave aside all details as well as discussion of related arguments in the literature².

1.1 The contrastive intonation argument

Intonation makes it possible to highlight the meaning of some element in the utterance in contrast to some other element. Thus, if we say *He bought a RED car*³, then this is understood to mark the particular fact that the car was red, in contrast to the possibility that it was not red, for example green or black. And if we say *The book was ON the table*, this highlights the particular "on-ness" of the spatial constellation, in contrast to the possibility that the book was not ON, but, for example, ABOVE or IN FRONT OF or UNDER the table. All of this is well-known, and allows us to use contrastive intonation as a kind of probe for which meaning is carried by some element in the sentence.

Which semantic component is highlighted, if the finite element and only the finite element of a sentence is marked by contrastive intonation? Consider (1a):

(1a) *The book WAS on the table.*

Clearly, by uttering (1a), it is stated that the book was on the table. But this is also the case if the element *was* is not stressed at all, let alone is the only stressed element. The particular contrast marked by (1a) can go in (at least) two directions, as illustrated by (1b) and (1c):

- 2 I wish to mention, however, that I owe many insights to the work of Drubig (1991), Höhle (1992), Jacobs (1984), Sgall et al. (1973) and von Stechow (1992).
- 3 I indicate contrastive intonation by capitals. In the present context, I will not discuss how "contrastive intonation" is phonetically realised. In fact, this is a very difficult question, but it does not directly affect the point made here.

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- (1b) The book is on the table. - No, the book WAS on the table (but it isn't any longer).
- (1c) The book was not on the table.- That's wrong, the book WAS on the table.

In the first case, the contrast relates to the particular time about which a claim is made here: The contrast is between *is* and *was* (it could also obtain, a case not illustrated here, between *was* and *will be*). Hence, it is the "time component" contained in the finite component of the verb which is highlighted by the contrastive intonation.

In the second case, the time component is not at issue. The contrast is between *was* and *was not*. What is highlighted is the mere claim that the book's being on the table at some unspecified time in the past is the case (in contrast to the possibility that the book's being on the table at that time in the past is not the case).

Hence, we must assume that the finite element *was* carries (at least)⁴ two distinct meaning components:

1. the tense component: it marks past, in contrast to present or future;
2. it marks the "claim" - the fact that the situation described by the utterance indeed obtains, in contrast to the opposite claim.

In this particular example, the finite element is a copula, whose inherent descriptive content is thin - although it is not null (a point to which we will return in section 2 below). What about full lexical verbs in their finite form? Consider (2a):

(2a) John LOVED Mary.

This can at least express a two-fold contrast, as illustrated by (2b) and (2c), respectively:

- (2a) John LOVED Mary, but he doesn't love her any longer.
(2b) John LOVED Mary, but he didn't adore her.

In the first case, it is again the inherent tense component which is highlighted, and

4 The finite verb can also carry other meaning components, for example a particular mood. Since this is not directly relevant to the present argument, it will not be considered here.

in the second, it is the particular lexical content of *love* in contrast to *adore*. Is it also possible to highlight the mere claim of his loving her by (2), in contrast to the possibility that he did not love her at that time in the past? The answer is clearly negative. In order to do this, the finite component must be extracted from the finite verb and given independent expression:

(2c) The idea that he didn't love her is plainly wrong: John DID love Mary.

Note that the *do*-support can also be used to mark the tense contrast. But in order to mark the claim contrast, only this construction is possible. Hence, it would appear that the basic function of the finite element is to carry the "claim" made by the utterance in question. Under specific conditions, the finite element can be morphologically unified with the lexical verb, as in *loved* or *bought*. But if it is to be highlighted, it must be isolated. The "emphasis" of the emphatic *do* relates to its role as a carrier of the claim.

We conclude from these observations that, on some abstract level of representation (whose nature and status is entirely open at this point), there is some "claim component" which, in finite clauses, is realised by the finite component of the verb. I shall call this component AST (for "assertion").

1.2 The word formation argument

Most languages provide their speakers with two different strategies to put words together - word formation and syntax. German, for example, is a language, in which the former possibility is particularly elaborated. Consider, for example, a common German compound such as *Bunsenbrenner*. It consists of two nouns, *Bunsen* and *Brenner*. The former is a name (and hence a full noun phrase), the latter is itself a compound word, a derivation from a verb. We shall not consider the particular nature of the two components but only their relation to each other in the compound expression. The syntactic operation which brings the two components together is simple concatenation of two nouns, resulting again in a noun. Which semantic relation corresponds to this syntactic operation? This question has been the subject of much dispute. In fact, it seems difficult to find any clear constraint on the nature of this relation, as is illustrated by the simple fact that, if two arbitrary nouns are combined, then it is always possible, after some thinking perhaps, to establish some relation between them and accordingly to give some more or less plausible reading to the entire word (for example *radio picture* or *picture radio*).

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It is only world knowledge which makes some particular reading more plausible than others. In the case of *Bunsenbrenner*, for example, it is not so plausible that this is a burner which looks like Dr. Bunsen, the eminent chemist, but something like the burner which has been invented by Bunsen, or the burner which was first used by Bunsen, or the burner which is named after Bunsen.

Take now any of these readings, for example the first one, and compare the following two sentences:

- (3a) Der Bunsenbrenner wurde nicht von Bunsen erfunden.
The Bunsen burner was not by Bunsen invented.
- (3b) Der Brenner, der von Bunsen erfunden wurde, wurde nicht von Bunsen erfunden.
The burner, that by Bunsen invented was, was not by Bunsen invented.

Apparently, (3a) is an empirical sentence. It can be true or false, and in order to find out, we would have to inspect some book on the history of chemistry. This is superfluous for sentence (3b): It is analytically false. This difference is observed independent of the particular paraphrase chosen. We get the same effect for examples (4a) and (4b):

- (4a) Der Bunsenbrenner wurde nicht zuerst von Bunsen verwendet.
The Bunsen burner was not first by Bunsen used.
- (4b) Der Brenner, der zuerst von Bunsen verwendet wurde, wurde nicht zuerst
The burner, that first by Bunsen used was, was not first
von Bunsen verwendet.
by Bunsen used.

Again, (4a) is an empirical claim, and only experts can tell whether it is true or not, whereas (4b) needs no special expertise to be recognised as wrong.

Note that the contrast between the two types of construction, and thus the sentences in which they are embedded, does not hinge on the particular semantical relation between the two elements. Thus, we might generalize this contrast to (5a,b), where REL is an abbreviation for an arbitrary semantical relation:

- (5a) The Bunsen REL burner was not REL Bunsen.
- (5b) The burner, that was REL Bunsen, was not REL Bunsen.

No matter what the particular semantic relation REL between the first and the second part of the compound may be - it is not presupposed that this particular relation indeed obtains. If such a relation is made explicit by a relative clause, it is not just a possibility; it is supposed that it really obtains. Hence, the relative clause encompasses something like a 'frozen claim' or 'frozen assertion'. No such claim is involved in the noun compound.

We should assume, therefore, that, on some abstract level of representation, the modification of the head noun by a relative clause involves some element AST, whereas the modification by word formation does not. This appears to be a fundamental difference between composition by word formation, on the one hand, and by composition by phrasal rules, on the other. We are not forced, however, to assume that this abstract element AST must be projected to a finite verb. In the relative clause, there is such a finite component. But we get the same difference for some non-finite constructions. In German, for example, there is a basically equivalent non-finite construction, which, too, leads to an analytically false sentence:

- (6a) Der von Bunsen erfundene Brenner wurde nicht von Bunsen erfunden.
The by Bunsen invented burner was not by Bunsen invented.
- (6b) Der zuerst von Bunsen verwendete Brenner wurde nicht zuerst von
Bunsen verwendet.
The first by Bunsen used burner was not first by
Bunsen used.

Two lessons can be drawn from these observations. First, we must carefully distinguish between the abstract element AST, on the one hand, and the finite component of the utterance, to which it is structurally linked - if there is such an element. After all, there are languages which do not have finite components at all; we would not conclude from this fact that they necessarily lack an element such as AST.

Second, an assertion can be either explicitly made, as in *Der Brenner wurde von Bunsen erfunden*, and it can be somehow be embedded, as in *Der Brenner, der von Bunsen erfunden wurde* or in *Der von Bunsen erfundene Brenner* and perhaps in attributive constructions in general. We might call these "root assertion" and "embedded assertion", respectively. In contrast to phrasal syntactic constructions, word formation does not contain either of those.

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1.3 The tense argument

Conventional wisdom tells us that tense serves to place the action, event, state talked about - I shall say "the situation" - in the past, present, or future. Thus, in *John was ill*, John's illness, or perhaps some illness of John, is placed into the past, whereas in *John is ill*, it is said to be at, or to encompass, the time of utterance, and in *John will be ill*, it is in the future.

This notion is widespread but surely not correct. Suppose *John was ill* is said in answer to the question *Why didn't John come to the party yesterday evening?* Then, it need not at all be the case that his illness does not include the time of utterance. He could still be ill. This point becomes even clearer with a sentence such as *John was dead*. Surely, this sentence does not mean that his being dead does not include the time of utterance; this is most likely the case, unless John resurrected. What is meant by the simple past is the fact that at some particular time span in the past, John was ill. An assertion is made only about this time span in the past, and it is simply left open whether the state obtaining then also obtains later or earlier. Such a time span for which an assertion is made I will call "topic time" (in brief, TT), and it is the function of tense to mark whether TT precedes, contains or follows the time of utterance. The time of the situation itself may precede, contain, or follow TT. I think it is this relation between TT and the time of the situation, which is traditionally called "aspect". Aspect is often morphologically marked, too, although it need not (just as little as tense, which is morphologically differentiated in English or German, but not, for example, in Chinese). A simple analysis of the English perfect is therefore that it marks that TT falls in the "posttime" of (that is, the time after) the time of the situation (this is the "aspect component"), and TT in turn can be in the past, present, or future (this is the "tense component"). This is what the forms *John had been ill*, *John has been ill*, and *John will have been ill* mean. We shall not follow up this analysis here in any detail (see Klein 1994), but only consider some points connected to tense and finiteness.

TT is the time for which a claim is made. But not all utterances make a claim, and still they can be tense-marked. Questions are such a case, imperatives, especially in their negated form, are another one. Consider (7):

(7) Don't go to that party!

In order to be prepared for these cases, it is plausible to assume that tense only marks that some arbitrary time span, for which we keep the term TT, is placed somewhere on the time axis, and that either AST or, depending on the particular

illocution, some other "modality marker", assigns a special function to this time span. So, TT can be the time span for which a claim is made, but it can also be the time span, at which some obligation is put into force (or in which way ever we want to analyse the role of the imperative). These latter cases are perhaps structurally less developed but surely not excluded.

If these assumptions are correct, we should conclude that the finite component in declarative main clauses is typically the carrier of both tense and AST. But these two functions must carefully be kept apart. The finite component simply defines a time span, which can be placed somewhere on the temporal axis. This is what is called here "topic time". In declarative main clauses, this TT is the time for which the claim is made - the time to which the abstract element AST is linked. In other clauses, for example in imperatives, some other illocutionary function may be linked to TT.

This leaves us with two other possibilities. First, there may be no finite element and hence no TT to be filled at all. This is typically the case in examples such as (6a,b) above where there is some embedded assertion without a corresponding finite element, hence without a TT. We could say that there is an AST but it is not linked to the time axis. Second, there may be a finite element and hence a TT, but it is part of a subordinate clause. Then, we either assume that AST is assigned to TT, and its meaning is overruled by something else (for example the meaning of the complementiser), or else it is just TT, and its meaning is not overruled but defined by something else (again, this might be the meaning of the complementiser). In fact, both cases might exist, depending on the particular nature of the subordinate clause.

Our previous observations cannot be made a bit more specific. Apparently, on some abstract level of representation, there is some element FIN*, which may or may not be realised by some finite verb. This element FIN* must contain (at least) two components - a slot for some TT, and a slot for some function such as AST. I note this as FIN* [TT, AST]. Depending on how the two slots are filled, on the one hand, and on the morphosyntactical rules of the particular language, on the other, FIN* can be realised in various ways. In English, for example, FIN* [TT before time of utterance, AST] together with the non-finite component of the sentence - denoted here by INF* [John be dead] - results in *John was dead*. This will be made a bit more precise in section 2.

1.4 The topic argument

In English, the simple past and the present perfect have a related but still clearly

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distinct meaning. The difference has been stated in varying terms, for example by assigning "ongoing relevance" or the nature of "indefinite past" to the present perfect, in contrast to the simple past (McCoard 1978 gives a good survey). None of these accounts can explain the difference between (8a) and (8b):

- (8a) John was dead.
- (8b) John has been dead.

Whereas the former is easily possible, the latter sounds distinctly odd. This can't have to do with the lack of on-going relevance, nor with the indefiniteness of the situation in (8b).

Under the analysis indicated in the preceding section, the difference becomes immediately plausible. This analysis states that in (8a), TT is before the time of utterance (I shall briefly write $TT<$), and the situation at issue, John's being dead, is the case at that time. In (8b), TT includes the time of utterance (I shall write TT_0), and this topic time falls in the posttime of John's being dead. But there is no real posttime of John's being dead: Once dead, forever dead. (If you believe in a possible posttime of being dead, then (8b) is acceptable.)

Whereas someone's being dead has (barring resurrection) no posttime, someone's being dead for two weeks does have a posttime: It is the time span which begins two weeks after the *exitus letalis*. Therefore, it should be possible to say that someone is in the posttime of being dead for two weeks, and so it is:

- (8c) John has been dead for two weeks.

In the simple notation suggested at the end of section 1.4, we may describe the three utterances as follows:

- (9a) FIN^* [$TT<$, AST] applied to INF^* [John be dead]
- (9b) FIN^* [TT_0 , AST] applied to INF^* [POSTTIME (John be dead)]
- (9c) FIN^* [TT_0 , AST] applied to INF^* [POSTTIME (John be dead for two weeks)]

So far, the present analysis with TT and AST being components of FIN^* explains the otherwise mysterious contrasts between (8a - c). But if this is correct, why is it odd to say (8d):

- (8d) *For two weeks, John has been dead.*

The only difference to (8c) is apparently the fact that the temporal adverbial is placed in front of the finite element of the verb (that element which probably corresponds to FIN*). What is the semantical effect of this syntactical operation? If we assume that in English the scope of some operator does not include elements which precede it⁵, and further that FIN* functions like an operator, then the fronting of the adverbial moves the adverbial out of the scope of FIN*, and hence of AST. Thus, the explicit claim made by (8d) is only that TT₀ falls in the time of John's being dead. But the time of John's being dead is forever: there is no time after.

In other words, FIN* need not necessarily apply to the entire INF*, but may pick up some focussed part of it. We shall say that INF* can consist of a *topic component* and a *focus component*, and it is the latter to which FIN* applies.⁶ One way to indicate this partitioning of INF* on the surface is "topicalisation", that is, placing the topic component in front of that element which realises FIN* on the surface.

1.5 The French word order argument

The following two French sentences, just like their English counterparts, are both odd, but for different reasons:

(10a) En Autriche se parle l'Allemand.

In Austria is spoken German.

(10b) L'Allemand se parle en Autriche.

German is spoken in Austria.

Sentence (10a) violates a clear grammatical rule. In French, the subject normally⁷ precedes the verb. Sentence (10b) obeys this rule, it is grammatically perfectly

5 Note that this does not necessarily mean that all elements after an operator are necessarily affected by it.

6 This is not the place for a detailed discussion of the semantics of topic and focus. In accordance with recent work on focus (Rooth 1992, von Stechow 1993), I assume that the topic-focus structure of an utterance reflects the difference between a set of alternatives at issue, on the one hand, and a particular element of this set, on the other. The former is expressed by the topic component, the latter is expressed by the focus component.

7 There are some exceptions to this rule, especially in presentational constructions, but they do not concern this example.

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correct, but it gives the impression that the country where German is spoken is Austria, and this is probably not intended. The immediate reaction would be "But what about Germany, Switzerland, and all of the other countries where German is spoken?". In a way, (10b) answers the question "Where do they speak German?", rather than "What do they speak in Austria?". It has the wrong topic-focus structure. Sentence (10a) has the correct topic-focus structure, it answers the question "What do they speak in Austria?", but it violates a word order constraint of French.

English and German have different ways to deal with this problem. In German, the word order is simply inverted, since there is no constraint such that the subject has to be in initial position⁸:

- (11) In Österreich wird Deutsch gesprochen.
In Austria is German spoken.

In English, the prepositional phrase can be put in initial position, keeping the subject in front of the verb:

- (12) In Austria, German is spoken.

This is also possible in French, but the result is distinctly odd:

- (10c) En Autriche, l'Allemand se parle.
In Austria, German is spoken.

What this means, is something like: In Austria, they do not sing, mumble or shout German (as they do in other countries), they *speak* it. How can we explain this?

Let us assume that in French, just like in English, FIN* - which carries the assertion - functions like an operator, and further, that this operator does not affect elements which precede it. Then the only possible element in its scope is the lexical verb itself: *parle*. It is only this element which is in focus. The sentence answers the question "What is done with German in Austria?", rather than "What is spoken in Austria?", and the answer is "There, it is spoken". In other words, the only alternatives considered are *speak vs. sing vs. mumble vs....* - that is, the alternatives to the lexical meaning of the verb itself.

This leaves us with the question why the syntactically parallel sentence (12) in

8 Note that the main accent is on *Deutsch*.

English does not show this effect. The reason is apparently that in English, the focus component can also be marked by intonation. Note that in (12), the subject *German* is intuitively stressed. If the main stress is on *spoken* - as the nuclear stress rule would predict - we have the same odd effect as in French:

(13) In Austria, German is SPOKEN.

French, with its different intonational system, does not allow for such a compensation. It is odd to stress *l'Allemand* in (10c). The only way to solve this problem in French is to choose a different construction, for example:

(10d) En Autriche, on parle l'Allemand.
In Austria, one speaks German.

Here, the subject precedes the verb, and the crucial focus element, *l'Allemand* is in the appropriate position after FIN*.

1.6 Summing up

Our considerations so far can be summed up in six points:

A. Compound constructions may but need not involve an abstract component FIN*. Word formation is -FIN*, phrasal composition is +FIN*. The presence of FIN* does not necessarily mean that there is some finite verb on the surface: FIN* is an abstract element of the representation of an utterance, and only under special conditions, FIN* is realised by the finite component of a verb.

B. FIN* contains at least two specifiable positions, one for AST (or some comparable illocutionary function), and one for the time span to which this assertion is confined, called here topic time (TT).

C. FIN* need not be topmost in the construction; it can also be embedded. In this case, it is either overruled by some other operator - resulting in subordinate clauses - or it is not realised at all. Then, the result is a non-finite phrase. A noun-phrase, for example, may well contain a FIN*; but in a noun phrase, this FIN* is not topmost, and hence, a noun phrase cannot be used to make an assertion.⁹

9 It is arguable whether this also applies to simple NPs; for instance, an NP such as *the pope* may mean "that entity which is right now/at some unspecified time span a pope", hence also

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D. Suppose FIN* is topmost and "filled" by TT< and AST. Then, the abstract representation of a sentence is FIN* (INF*), where FIN* is an operator over maximally the entire non-finite part of the entire construction, called here INF*.

E. INF* may be partitioned into a topic component and a focus component. FIN* has scope only over the focus component.

F. The concrete implementation of FIN* (INF*) consists of a number of partly universal, partly language-specific morphosyntactic operations. For example, FIN* itself may be expressed by the finite component of the verb, the lexical part of the verb may be fused with this finite component, the topic-focus-partitioning may be indicated by special positions and by intonation.

In the next section, we briefly sketch what these rules look like in English.

2. From FIN* and INF* to surface: A blueprint

In what follows, two minimal assumptions about the organisation of grammar are made.

1. Two levels of representation are necessary and perhaps sufficient. One of them I will simply call "surface"; categories on this level are denoted by capitals, such as FIN, INF, NP, and so on, lexical elements by (inflected) words in italics (*was, John*). The other, more abstract level will be called LEVEL*; categories on this level are denoted by capitals with an asterisk, such as FIN*, INF*, NP* (they need not but may be different from FIN, INF, NP, and so on), lexical elements (in non-inflected form) by italicised capitals, such as *BE, JOHN*, and so on.
2. The two levels are related to each other by a number of rules, whose concrete form may vary within limits from language to language.

There are many ways to give concrete shape to these two assumptions. In the minimalist framework, for example, one may identify "surface" with the "phonological form", and LEVEL* with "logical form", respectively, and the general rules mentioned under 1. might be reconstructed in the form of (generalised) transformations. But other concretisations are imaginable. Given the on-going debate on the overall organisation of grammar, on the one hand, and the fact that the phenomena at hand are quite independent of this debate, I will not

involve FIN*. This is not an easy question to decide, and we shall not follow it up here.

commit myself to any such particular implementation but rather try to give a sort of "blueprint" which can be realised in various ways.

We will begin with a brief recapitulation of the contrastive intonation argument of section 1.1 and extend it to an important point not discussed there - the "descriptive ingredient" of the finite verb. If someone who utters (1a) *The book was on the table* stresses the finite element *was*, then this can be done in order to mark a contrast to (at least) three alternatives:

- in contrast to *The book IS on the table* or else *The book WILL BE on the table*, that is, it is the particular time which is highlighted, in contrast to some other possible time;
- in contrast to *The book was NOT on the table*; in this case, the time is not at issue; it is the assertion as such which is at issue;
- in contrast to some other descriptive content of the verb, such as in *The book WAS on the table, but he did not STAND on the table*.

In other words, there is a meaning component in the English word *was* which it shares with *came, had, worked* - the temporal component. There is a component which *was* shares with *am, were, is* - the "descriptive content" which, in the case of a copula, is quite thin but still present. And there is a component which has to do with the assertion which is made by the speaker (or, in the case of a question, submitted to the listener). Hence, on LEVEL*, the meaning of *was* has to be represented as including three components. I shall abbreviate these as [BE, TT<, AST], where BE is the descriptive content, TT< is a time span before the time of utterance, and AST stands for the assertion which is made when (1) is uttered.¹⁰

Each of these components can be stressed by highlighted contrastive intonation, as illustrated above.

Generally speaking, FIN* involves three variables, which I will call *lex, t* and *mod*, respectively. The first of these, *lex*, can be filled by some descriptive meaning component, for example the meaning BE. The variable *t* can be filled by the specification of some time interval, the "topic time". For present purposes, three such specifications are distinguished, TT< (some time span before the time of

10 As was mentioned in section 1.1 already, the finite verb *was* also exhibits other features, such as modality - *was* in contrast to *would be* or *were*, or purely syntactical features, like agreement; these do not directly matter here.

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utterance), TT_0 (a time span which includes the time of utterance, and $TT>$ (a time span which follows the time of utterance. Finally, *mod* is a variable for the sentence modality, which can be specified by AST, but also by some other "sentence modality marker" (for example for imperatives). In what follows, we shall only consider AST.

What is asserted, is *not* the truth of a certain possible state of affairs, of a situation such as the book's being on the table. What is asserted, is rather that TT follows, contains, is contained in ... the time of the situation which is selectively described by (1b). Part of this description is given by the surface forms *the book* and *on the table*, but part also comes from the surface finite verb form *was*. I shall assume that on LEVEL*, there is a (selective)¹¹ lexical representation of the situation, labelled here INF* [*THE BOOK BE ON THE TABLE*].

Thus, the full LEVEL* representation of a sentence consists of two parts, FIN* and IMF*, where the former operates over the latter. Hence, the representation looks like this (ignoring the internal phrasal organisation of INF*):

(14) FIN* [lex, t, ass] (INF* [V, arguments, optional elements])

In the remainder of this section, I shall assume that the variable *mod* is indeed specified as AST, *t* is specified as $TT<$, and that FIN* is topmost - that is, we only consider declarative main clauses in the past, such as (1). How do we then get the correct English representation?

To this end, three types of rules must be specified:

1. INF* itself is compound of smaller entities, and the rules of this composition must be described; let us call this "INF*-composition".
2. It must be decided, and also marked, which parts of INF* constitute the Topic component and which ones the Focus component; we may label this "TF-assignment" and "TF-marking", respectively.
3. FIN* and INF* must somehow be fused, thus yielding the concrete finite and non-finite forms; in particular, the variable *lex* in FIN* must be filled by some part of INF*; we may call this process "FIN-INF-linking".

11 The lexical representation of the situation is selective, because the situation contains many features which are not - but could be - made explicit, for example the colour of the book, the material of the table, the duration of the situation, etc.

In what follows, I shall sketch the basics of these three rule components, beginning with INF-composition. INF* consists minimally of a verb cluster and its arguments. A verb cluster consists of single verbal element (lexical verb or copula with appropriate predicative), such as *leave*, *be ill*, *remain quiet*, or a series of verbal elements, such as *seem to have left*, *be willing to remain quiet*; I do not consider details here, nor will I discuss which phrasal rules are needed on this level. Minimal INF* can be enriched by operators of different types, notably negation, particles, adverbials. Nothing was said so far about the order of those elements on LEVEL*. I assume that in English (just as in German or Dutch), three default principles apply: (a) Arguments before verb cluster; (b) operator before its scope; (c) among the arguments, "more agentive ones" come first. Note that these principles are default principles: under specific circumstances, they can be overruled; moreover, the last one needs specification; take it as a simple version of a basic semantical constraint on word order, as suggested in one or the other form by many authors.

For a sentence such as (17), this gives us the structure (16):

(16) John seemed to have left London.

(16) FIN* [lex, TT<, AST] (INF* [John, London, seem to have left])

It was tacitly assumed here (and marked by (...)) that the rule "Operator before its scope" also applies to the relation between FIN* and INF*, where the former is an operator with scope over the latter.

Next, let us turn to the rules of topic-focus structure. We must carefully distinguish here between what in INF* belongs to the topic component and what to the focus component, on the one hand, and the way in which these assignments are then indicated in the utterance. The decisions regarding what goes to topic and what goes to focus depend on the speaker's communicative intentions and on various contextual factors. Thus, the TF-assignment is not arbitrary. It follows a number of complex regularities. But for present purposes, I will not go into these complexities and simply assume that in principle, any constituent can be freely marked as T or F, respectively.

The concrete TF-marking, on the other hand, uses several devices: word order, particles, intonation. The basic word order device is to move a topic component out of the scope of FIN* by placing it in front of FIN*. We may state this in the form of a general rule of TF-marking:

(17) TF-marking by word order

Elements which precede FIN* are not in its scope.

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In a way, (17) is a simple consequence of a more general (but not necessarily universal) principle concerning operator scope.

This simple device is regularly complicated by the existence of other possibilities of TF-marking with which it interacts in many ways - partly suspending, partly completing it- as well as by the existence of purely syntactical constraints on word order. This was briefly illustrated in section 1.5. In German, for example, there is a relatively rigid syntactic constraint which confines the position before the finite element to one major constituent. This works fine, if there is exactly one T-constituent. If there is none, then the first position is either filled by a dummy element, or else a focus constituent is placed there (with appropriate intonational marking). If, on the other hand, there is more than one topic constituent, one of them is placed in front of FIN*, and the others are marked by intonation and possibly by word order after FIN*. In English, there is a comparable rule which places the first argument immediately in front of FIN*. If this element happens to be the only T-element, there is no problem. If there are more T-elements, one of them can be placed in front of the initial argument, others are marked by intonation, and if the first argument is an F-element, the first position is either a dummy, or else it is indeed placed in initial position and marked by intonation. In French, the word order constraints on TF-marking are in many ways like those of English. But there is no comparable interaction with intonation. The details of TF-marking in these and other languages are extremely complex, and no attempt will be made here to state them in detail. What matters in the present context is the fact that it is possible to indicate that certain elements of INF* do not fall into the scope of FIN*, and hence no claim is made about them in the particular utterance.¹²

The third set of principles are the morphosyntactic rules of the particular languages which bring FIN* and INF* together and eventually produce the correct surface form. In English, there are two important rules of FIN-INF-linking. A first

12 A systematic analysis of topic-focus structure and its language-specific marking would have to take into account at least two additional points. First, FIN* itself can also be assigned topic-status or focus-status. Normally, FIN* is the minimal topic element; if it is not, this has to be marked by intonation; this yields the intonational patterns discussed in section 1.1. Second, there is one major complicating factor - the "information status", i.e., the difference between information which is maintained and information which is introduced in an utterance. This distinction is not identical to, but strongly interacts with, the topic-focus structure and thus has many consequences for word order, intonation and ellipsis.

general rule, called here TT-attachment, fuses FIN* with a verbal element from INF*. We may state it as follows:

(18) TT-attachment

The topmost verb of INF* is morphologically fused with FIN*, thus yielding FIN, whereas the remainder of INF* becomes INF.

FIN is the finite verb (this can be an auxiliary or a copula), and INF is the non-finite remainder, minimally the arguments of the verb.¹³ The precise form which this rule takes depends on what is in FIN*, on the one hand, and on the particular paradigmatic class to which the verb belongs. In (16), the verb has regular inflection, the content of FIN* is AST and TT<, and the resulting FIN is *seemed*.

What happens with the remnant of the verb cluster from INF*? In German, it simply remains where it is, and so it did in older English. Modern English has an additional rule, which we may call "Verb remnant shift" and which, some complications aside, can be stated as follows:

(19) Verb remnant shift

Place the remnant of the verb cluster immediately before the objects.

It is easy to see that, taken together with the rules of TF-marking, TT-attachment and then Verb remnant shift turn the LEVEL* representation (16) into the surface form (16). Note that these morphosyntactical rules, in contrast to the rules of TF-marking, do not affect scope assignment. This means that the verbal elements, though shifted, still behave as if there were in their LEVEL* position.

As was said already, this picture of the various rule components is very global; it is a blueprint and does not spell out the details. But the main lines should be clear.

3. Conclusion

In section 1, five arguments in favour of an abstract element AST were presented, and it was shown that this component is linked to some abstract counterpart of the finite verb. Let us now see how the picture developed in section 2 covers the

13 There are some complications if there is a negation, or if FIN* itself is highlighted, resulting in a dummy construction with *to do*; again, I will not consider the appropriate rules here.

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observations made there (where the solution to the French word order problem was already indicated in section 1.5).

The intonational facts reflect a situation in which only FIN* (and hence FIN) has focus status and is marked as focus. Everything else in the utterance belongs to the topic component. The difference between word formation and phrasal syntax, as illustrated in section 1.2, is due to the fact that composition according to the former does not involve FIN*, and hence no AST. Attributive constructions, on the other hand, can contain FIN*, albeit not as the topmost element of the entire construction: they include an "embedded assertion". The fact that we can say *John was dead*, although his being dead includes the time of utterance, is due to the fact that the claim only relates to some time span, to which the claim is restricted; it is this "topic time" which is placed before the time of utterance by the past tense marking, rather than the "time of the situation". Finally, the fact that we can say *John has been dead for two weeks*, whereas *For two weeks, John has been dead* is odd, is due to the fact that the fronting of the adverbial moves it out of the scope of FIN* and hence AST: The claim only relates to *have been dead* and places the topic time into the posttime of being dead; but, resurrection aside, there is no posttime of being dead. Hence, such a claim would not make sense. If, on the other hand, the topic time is placed in the posttime of being dead for two weeks, then this surely makes sense: it is true if John's death occurred minimally two weeks before the time of utterance, and false otherwise.

In conclusion, the familiar distinction between finite and non-finite verb forms is not just a matter of surface morphology. Finiteness is an abstract operator with scope properties, whose presence in a construction has manifold consequences in morphology, syntax and semantics.

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