THE LINGUISTIC ANALYSIS OF MODALITY
- WITH SPECIAL REFERENCE
TO ENGLISH AND GERMAN

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Volume 2

PhD Thesis
University of Edinburgh
1978
§ 9 Tense and Modality

9.0 In this chapter I wish first to look further at the relationship between modality and tense in the light of the findings of §§ 7 and 8, and then to make an attempt to classify a set of modal expressions in terms of underlying tense ($t_i$).

§ 9.1 Tense and Time Reference in Modal Expressions

9.1.1 In § 7.1.2 it was pointed out that epistemically interpretable modals may appear with a number of tense-forms in the complement construction.

9.1a. He may be going there tomorrow.
    b. He may be going there now.
    c. He may have been there yesterday.
    d. He may go there.

Of these, the complement of 1a may be said to have future time reference, that of 1b to have present reference, and that of 1c to have past time reference. With 1d there is an ambiguity. Interpreted as if it contained the word sometime, it can only refer to an action in the future; interpreted as if it contained the word often or sometimes, the time reference (if such it may be called) is indefinite and the action has to be understood as being iterative (cp. § 8.3.1). We might be tempted to call this 'timeless' or 'tenseless', but that would not be quite accurate as there is a contrast with:

9.2a. He may have been there often.
    b. He may be going there often.

where the repeated actions occurred in the past (2a) or will occur in the future (2b). These tense-forms may be analyzed as time references (with or without aspect...
and action-frequency) under t. We want, however, to establish also the time reference (if such it is) of the epistemic expressions; might in place of may in 1d, for example, does not give us a past tense version of 1d. In § 7.1.1 it was also pointed out that past and future tense-forms of 'analytic' epistemic expressions were subject to restrictions not to be found with the present tense-form. Thus, all the permutations in 3a are unaccept-
able, cp. 3b.

9.3a.  

\[
\begin{align*}
\text{It will be possible} & \ \\ 
\text{It was possible} & \ \\ 
\text{It has been possible} & \\
\end{align*}
\right\}
\begin{align*}
\text{he's going there tomorrow.} & \\
\text{he's going there now.} & \\
\text{he's been there.} & \\
\text{he was there yesterday.} & \\
\text{he goes there.} & \\
\end{align*}
\right\

b.  

\[
\begin{align*}
\text{It is possible that} & \ \\ 
\text{he's going there tomorrow.} & \\
\text{he's going there now.} & \\
\text{he's been there.} & \\
\text{he was there yesterday.} & \\
\text{he goes there.} & \\
\end{align*}
\right\

The future and past forms that we do find differ in significant ways from those in 3.

9.4a.  

It is possible that there'll be a cure for cancer in 2001.

b.  

* It will be possible for there to be a cure for cancer in 2001.

c.  

* It will be possible for there to be a cure for cancer in 2001.

d.  

There will possibly be a cure for cancer in 2001.

9.5a.  

In 2001 it will be possible to cure cancer.

b.  

In 2001 there will possibly be a cure for cancer.

c.  

In 2001 it will be possible (for us) to cure cancer.

d.  

* In 2001 it will be possible that we can cure cancer.

e.  

In 2001 it is possible that we'll be able to cure cancer.
9.6a. It is possible that there was a remedy for hiccups in 1350.
  b. * It was possible that there was a remedy for hiccups in 1350.
  c. * It was possible for there to be a remedy for hiccups in 1350.
  d. There was possibly a remedy for hiccups in 1350.

9.7a. In 1350 it was possible to remedy hiccups.
  b. In 1350 there was possibly a remedy for hiccups.
  c. In 1350 it was possible (for us) to remedy hiccups.
  d. * In 1350 it was possible that we could remedy hiccups.
  e. In 1350 it is possible that we could have remedied hiccups.
      would have been able to remedy hiccups.

Firstly, the past or future tense-form needs to be within the scope of a time-adverbial; secondly, the past or future tense-form is only acceptable with (for-) to + infinitive complements, not with that-complements. The forms with the adverb possibly are to be understood as equivalent to forms with: it is possible that ... The forms are also cognitively equivalent to:

9.8a. There may be a cure for cancer in 2001.
  b. There may have been a remedy for hiccups in 1350.

We are forced, I think, to the conclusion that epistemically interpretable may and it is possible that ... are not subject to tense distinctions in the normal way. From the discussion in §§ 7.1.2 and 7.4.2, the appropriate assignment of the tense of may seems to be Mod. In the case of the objective modality it is possible that ..., the tense is to be associated with Mod, i.e. $t_i^1$, while the modality specification is associated with Prop. I return to the analysis of it is possible for ... to ... in § 9.3.2.
9.1.2 With deontic modality we noted in § 7.2.2 that the time reference of the complement was considerably restricted:

9.9. He must \{ be starting to pack by six \{ tonight.  
                     go there tomorrow. 
                   \} have been there by six o'clock \{ tonight.  
                                           *last night. \}

That is, the complements refer to points in time that are future. On the other hand, the tense-form possibilities of 'analytic' deontic expressions are considerably greater than those of 'analytic' epistemic expressions, even without the addition of time adverbials like: in 2001, in 1350, tomorrow, etc.

9.10a. He'll be required to go there.  
b. He's required to go there.  
c. He was required to go there.

Since there is no greater restriction on future and past forms than on present forms with such expressions, we should conclude that the Mod specification contains fut, pres, or past \( t_i \). The time-reference of the complement is associated with the \( t_j \) of Prop: similarly, the modality is associated with Prop, thus:

9.10a'. I'll Mod Prop fut ((He go there fut) be required) 

The futurity of \( t_j \) may be said to be redundant (i.e. predictable), because no other possibilities occur with deontic expressions.

I turn now to past tense-forms of 'synthetic' deontic expressions. It will be recalled that in § 7.2.2 I distinguished 'performative' interpretations of some of the 'synthetic' deontic expressions, which would require an
assignment of the modality to Mod. Performativity is, of course, incompatible with past tense \(t_i\), so an assignment of past tense forms which have underlying past tense to Mod is presumably excluded. It is a well attested fact of English that the morphological past tense forms (could, etc.) are not synonymous in affirmative sentences with the 'suppletive' forms (was able, etc.). In German, however, the morphological past tense forms (konnte, etc.) are ambiguous between interpretations like those of could and interpretations like those of was able (cp. § 9.4.2).

It is not true, however, that the 'real' or 'true' past of can, for example, is was able. Given relationships like the following:

9.11a. You can go there
b. You must go there
c. You may go there

(1) You could go there.
(2) You were able to go there.
(1) You must go there.
(2) You had to go there.
(1) You might go there.
(2) You were allowed to go there.

we have to take account of the fact that the (2) forms are all factive, in that they entail the proposition expressed by their complements. This is the case neither with the (1) forms nor with the morphologically related present tense forms. Thus:

You must go \(\rightarrow\) you go/will go.
You had to go \(\rightarrow\) you went.

cp. I said you had to go \(\rightarrow\) you went.

It is arguable, then, that it is not arbitrary of English to distinguish lexically between you must go and you had to go, and that the superficial simplicity of the German system in fact conceals discoverable meaning distinctions.
In the case of the 'suppletive' forms, it seems that an assignment of past to Mod and of the modality to Prop is the appropriate analysis:

9.11a'. Ill  Mod  Prop  past  (you be able (you go there))

The analysis of the morphologically related forms could, might, etc. is less straightforward. I can envisage three possibilities: i) a modal past (non-factive past) under Mod and the same modality as in 11a' under Prop; ii) a non-modal past (factive past = past.) under Mod and a different form of modality under Prop; iii) a modal past under Mod and a different form of modality under Prop.

(For a discussion on non-factivity cp. §§ 11.3.1, 12.2.2, 15.1.) In the case of could, at least, I think (ii) is correct: the interpretation of:


can be glossed: 'it was the case (yesterday) that you were in a position to/it was possible for you to dance'. With the contrasting form with was able:

9.12b. You were able to dance yesterday.

the gloss would read: 'it was the case (yesterday) that you were in a position to/it was possible for you to dance and you did'. In other words, factivity in this case is associated with Prop, not with Mod (cp. § 15.1). I examine the nature of past tense-forms in more detail in § 9.4.

§ 9.2 "Future gap"

9.2.1 In this section I shall look at some questions of time reference involved in the use of time adverbials with regard to what has been called "future-gap" (Givón
"Future gap" designates the phenomenon whereby certain complementizing verbs allow double time reference. This can be demonstrated by the appearance of two time adverbials in a sentence.

9.13a. John knew yesterday that he would see the play today.
   b. * John could yesterday see the play today.
   c. John knew/thought yesterday that he had seen the play the day before.
   d. * John could yesterday have seen the play the day before.

Although it is true that the synthetic modal verbs: can, may, must, will, etc. do not allow future gap, there are many associated expressions which do allow future gap. German wollen and English be willing to, be prepared may be taken as examples. Compare:

   b. Yesterday he wanted to come and visit me.
   c. Yesterday he was prepared to come and visit me.
   d. Yesterday he was willing to come and visit me.
   e. * Yesterday he would visit me today.

(This incidentally is further evidence against regarding be willing to and will as strong paraphrases (cp. Anderson 1971)). Other verbs which pattern this way are: decide, plan, hope, agree, try, intend.

It might at first sight appear that these "Future gap" complementizing verbs should be analyzed in terms of $t_i$ and $t_j$, since this would give us two time reference points. But, of course, as has been made clear, $t_i$ functions differently from $t_j$: it relates to the speaker's view of the world, not to an objective point in time. Although $t_i$ is involved in the analysis of 14b, for example, it accounts for the past tense-form -, it is not by itself enough to
explain the double time-reference. 14b is not analyzable as:

9.14b'. Ill Mod Prop.
    past (he want) pres (he come and visit me) 'yesterday' 'today'

but as:

9.14b". Ill Mod Prop.
    past (pres he want yesterday (fut he come and visit me today))

where the double time-reference ("future gap") is represented in the Prop. This says in effect that the time-reference of (he want ...) is taken as the standard (or neutral term) and that the time reference of (he visit me ...) is future in relation to it. The surface tense of want is a reflex of \( t_1 \) (= past) and the neutral \( t_j \) (pres is used to indicate that \( t_j \) is not marked with respect to \( t_1 \)). "Future gap" might be a useful concept for distinguishing between full predicates and quasi-predicates (§ 1.1.3). With full predicates there may be a time reference associated with each predicate when they are combined in a complex proposition; with quasi-predicates this independent time reference is lacking.

Accordingly be able would qualify as a quasi-predicate and be willing as a full predicate. I have not followed up the line of investigation this would suggest; I submit it merely as a plausible hypothesis.

Before leaving the subject of time adverbials in relation to the tense form of modal expressions, we may consider some problems thrown up by their scope. Consider:

9.15a. Yesterday (,) John could have done it.
    b. John could have done it yesterday.
Although I think both 15a and b are ambiguous, the preferred reading of 15a could be glossed:

9.15a'. 'John was capable of doing it yesterday (but today he isn't).'

while 15b could, depending on intonation, be glossed as either 15b' or b":

9.15b'. 'It may be that John did it yesterday.'

b". = a'

The topicalization of yesterday in 15a seems to predispose the sentence towards an interpretation where could have refers to the past. In the 15b' interpretation could is not past but associated with the t_i of Mod. We could thus represent the two readings illustrating this difference in scope:

9.15bi. = (John could) (have done it yesterday) 'epistemic'

bii. = (John could have done it yesterday) 'dispositional'

We may note also the ambiguity of:

9.16. He wanted me to do it yesterday.

The scope of yesterday may be: 1) do it 2) want 3) want to do. Again the topicalization of yesterday gives a preferred reading in this case with want lying within its scope:

9.16'. Yesterday he wanted me to do it.

The fact that the interpretation of 15b with an epistemic meaning of could excludes the possibility that could lies within the scope of yesterday, or conversely the inclusion of could in the scope of yesterday excludes an epistemic interpretation thereof, is strong support for the analysis of 'synthetic' epistemics as the realization of
elements outside the Prop, and the analysis of disposi-
tionals as elements within the Prop. To conclude this
section on "future gap", we may note an apparently re-
lated phenomenon, namely: future in the past. In fact the
analysis of tense that I have adopted analyzes this phe-
nomenon not as a case of double time reference in the Prop
but as a future time reference $t_j$ within a conceptually
past time/world $t_i$. The lexical items involved here are:
would, was going to, was/were to in English, sollte, würde
in German, f. ex.:

9.17. This was the man who \{ would \\
      was going to \\
      was to \} become
      leader of a forgotten people.

Unfortunately this analysis is not quite transparent in
the case of would. If would is the past tense form of
will, which is analyzed as future in $t_i$, we have the
contradictory situation:

\[
\begin{align*}
\text{will:} & \quad \text{fut (pres)} \\
\text{would:} & \quad \text{past fut}
\end{align*}
\]

In the case of: was/were to the analysis seems to parallel
the most plausible analysis of non-deontic: is/are to as
in:

9.18. The man who is to become president next
year.

as actual i.e. present in $t_i$ with future time reference
in $t_j$.

The case of would is, however, not strong enough to re-
quire a reconsideration of the tense analysis proposed.
We may make appeal to the pragmatics of past modality and
say that the nature of narration entails a neutralization
between \( t_i \) and \( t_j \) futurity. And we may bear in mind that morphological relationship is by no means evidence for a notional parallelism. It would obviously be wrong to analyze 'future in the past' \textit{would} in the same way as 'conditional' \textit{would}, simply because of morphological similarity.

Evidence that the analysis of \textit{would} presented above is correct may be seen in the fact that \textit{would} does not appear to be distinct from \textit{was going to}, unlike \textit{will} and \textit{be going to}.

§ 9.3 Establishing Tense from a Set of Examples

9.3.1 Having indicated in the previous sections how the tense of modal expressions may be the reflex of both \( t_i \) and \( t_j \), I propose here to take a set of minimally distinctive examples and examine their tense relations in some detail. The examples are:

9.19a. The road can be blocked.
   b. The road may be blocked.
   c. The road could be blocked. (92)
   d. The road might be blocked.

Leech (1969) claims that 19a and b are to be distinguished as theoretical and factual possibility respectively.

I maintain, and will attempt to show, that tense is also involved in a significant way.

First, we should establish the possible interpretations of 19a - d, excluding reported speech and, if there are any, past interpretations of 19c and d.
19a'. 'It is possible for the road to be blocked'.
a". 'I give my permission for the road to be blocked'.
a"'. 'This road is blockable'.
b'. 'It is possible that the road is blocked'.
b". 'I give my permission for the road to be blocked'.
c'. 'It is conceivable that the road is blocked'.
c". 'It is conceivable that the road would be blocked under certain conditions'.
c"'. 'This road would under certain conditions be blockable'.
c"". 'It would be possible for the road to be blocked under certain conditions'.
d'. 'It is conceivable that the road is blocked'.
d". 'It is conceivable that the road would be blocked under certain conditions'.

The interpretations Leech was concerned with are 19a' and b'. 19a" and b" are equivalent, the only difference being stylistic or dialectal. In some people's speech, I believe, could and might can be interchanged; if so, then 19c' is a possible interpretation of 19c and equivalent to 19d'. I have used the glosses 'possible' and 'conceivable' to reflect the difference in degree between, on the one hand, can and may and, on the other hand, could and might.

Utterances 19a – d all have passive complements, and this has some effect on the set of possible interpretations. We may establish the following set of active-passive pairs with simple and continuous forms of the infinitive, assuming only epistemic interpretations of the modal expression, where + indicates a stative interpretation of the complement and - a non-stative interpretation.
20ai. The road can \{ be blocked. *be being blocked. +  
aii. They can \{ block the road. -be blocking the road. -  
bi. The road may \{ be blocked. ±be being blocked. -  
bii. They may \{ block the road. -be blocking the road. -  
 ci. The road could \{ be blocked. ±be being blocked. -  
cii. They could \{ block the road. -be blocking the road. -  
 di. The road might \{ be blocked. ±be being blocked. -  
dii. They might \{ block the road. -be blocking the road. -  

From the above it will be seen that all simple passive forms may be \( \pm \) stative, while all simple active forms may only be \( - \) stative. Continuous forms, as might be expected, can only be \( - \) stative. \textbf{Can} is exceptional in not permitting a continuous passive complement.

We can at this point make two provisional conclusions:

i) Leech's examples to illustrate the distinction between 'theoretical' and 'factual' modality, being passive, introduce complications that would not be involved with active examples; ii) certain modal expressions, notably \textbf{can}, do not readily co-occur with certain types of complement. The kind of complement which seems unacceptable with \textbf{can} is one which denotes an action in progress (a state of affairs cp. footnote 86). Significantly \textbf{could} is not affected by this restriction; its complement may denote a state, an event, and an action in progress.

In 21a - d I assume only stative interpretations of the complement. These paradigms give an indication of the possible time-reference of the complements of \textbf{may, can, might,}
could:

9.21a. The road can be blocked \{tomorrow. \\
be blocked \{?now/at this moment. \\
by nightfall/by tonight. \\
*by now/in the meantime. \\
*already. \\
have been blocked \{*yesterday. \\
by now/in the meantime. \\
*already. \\
tomorrow. \\
now/at this moment. \\
*by nightfall/by tonight. \\
*already. \\
\}

b. The road may be blocked \{tomorrow. \\
be blocked \{now/at this moment. \\
by nightfall/by tonight. \\
already. \\
yesterday. \\
*by now/in the meantime. \\
*already. \\
tomorrow. \\
now/at this moment. \\
by nightfall/by tonight. \\
already. \\
yesterday. \\
*by now/in the meantime. \\
*already. \\
\}

c. The road could be blocked \{tomorrow. \\
be blocked \{now/at this moment. \\
by nightfall/by tonight. \\
already. \\
yesterday. \\
*by now/in the meantime. \\
*already. \\
tomorrow. \\
now/at this moment. \\
by nightfall/by tonight. \\
already. \\
yesterday. \\
*by now/in the meantime. \\
*already. \\
\}

d. The road might be blocked \{tomorrow. \\
be blocked \{now/at this moment. \\
by nightfall/by tonight. \\
already. \\
yesterday. \\
*by now/in the meantime. \\
*already. \\
\}

With may, could and might the complement time-reference may be \( t_j = \text{fut/pres/past} \) - the normal pattern with epistemic. With can, however, the pattern is considerably different, much more like that associated with deontics. Moreover, the acceptable cases do not seem to be quite clear. My initial feeling was that the complement has to be future \( t_j \). This is supported by the non-acceptability of: *The road can be being blocked even with a non-stative interpretation. The apparent acceptability of: The road can be blocked already runs counter to this.

We may envisage the kind of context into which such a sentence would fit. Adding: For all I know/we know...
illuminates the sense of: The road can be blocked already, and vastly improves the acceptability of: The road can be blocked now/at this moment. This might suggest that there is a predictive quality attached to can when interpreted as 19a' and that its futurity is to be associated with \( t_i \) not \( t_j \). In other words, it might be modally related to will. Unfortunately, this suggestion doesn't stand up to further testing: can does not seem to be in commutation with will in conditional sentences:

9.22. If it snows in the night, the road \( \left\{ \begin{array}{l}
      \text{will} \\
      \text{may} \\
      \text{*can}
    \end{array} \right. \)

be blocked tomorrow.

may, could and might all share the necessary predictive quality to commute with will, but can does not. Is can, therefore, present under \( t_i \)? And if so, how is it distinct from may? Consider:

9.23a. The road can be blocked tomorrow, but it \( \left\{ \begin{array}{l}
      \text{can't be} \\
      \text{*may not be}
    \end{array} \right. \) today.

b. The road may be blocked tomorrow, but it \( \left\{ \begin{array}{l}
      \text{can't be} \\
      \text{may not be}
    \end{array} \right. \) today.

Regardless of whether can't is a strict negation of can or of its complement (cp. § 10.3.1), the fact that may not, which represents a strict negation of the complement of may, cannot occur after can suggests a distinction in the way judgments of likelihood are made in the case of may and can. May is used when we are judging the possibility of something being the case (the truth of a proposition, for example); can is used to make a statement about the possibility of realization of a state, event, etc.
May seems to be superordinate to can, to judge by the pattern of 23a and b. Moreover, we can attest sequences like 24a and b, but not ones like 24c and d.

9.24a. It may be possible for the road to be blocked.
   b. It may be possible that the road is blocked. (93)
   c. * It can be possible for the road to be blocked.
   d. * It can be possible that the road is blocked.

There is, it seems, a parallel between epistemic can (or so-called epistemic can) and deontic modality. This would account for the unacceptability of 25b:

9.25a. The children may have to go to bed now.
   b. * The children can have to go to bed now.

Although we have seen (§ 8.2.1) that epistemic modality may normally precede deontic modality, this does not seem to work with can. Two possible reasons for this are:
   i) can is not epistemic; ii) there is some other factor precluding it. Can has often been equated with be possible for ... to ... (cp. Anderson § 6.2.2) and there is some reason for doubting the epistemicity of be possible for ... to ... (cp. § 9.3.2), but I shall not pursue the possibility of the non-epistemicity of can. I suggest that we can make a case for tense being the factor precluding can from appearing with a deontic as in 25b. Notice that can is also unacceptable in 26b.

9.26a. The children may be about to go to bed.
   b. * The children can be about to go to bed.

If it can be maintained that may is tenseless (i.e. has no marking for \( t_i \)) and that can has a present tense marking, then tense may be adducible as the reason why a deontic with independent time-reference and an aspectual marker qualifying a time-reference cannot occur after
can. It will be recalled in this connection that the
time-reference of the complement of deontics is always
future with respect to $t_1$ (cp. § 9.1.2). A time-gap ana-
lysis, that is with two $t_j$ nodes is also unwarranted
(cp. § 9.2.1).

The solution I propose to the question of how may and
can may be structurally distinguished is this: may, which
is equivalent to 'it is possibly the case that ...', is
analyzed as a modification on (.) under Mod, while can
is analyzed as 'it is (actually) the case that possibly
...', i.e. pres • under Mod plus (objective) modality
under Prop. Thus:

$$
\text{may} = \text{Mod} \quad \text{Prop}
\text{can} = \text{pres} \cdot \text{vp} \quad (94)
$$

Whether may should be regarded as present or tenseless
is perhaps not immediately apparent. My justification
for treating it as tenseless rather than pres $t_1$ is that
its validity is universal within the world it is referring
to. Moreover, the oblique form might, when epistemic,
appears to function neither as a past tense-form nor as
a conditional form, but only as a 'tentative' form (cp.
below): in other words, both tense ($t_1$) and time-reference
($t_j$) seem to be irrelevant to the nature of may and its
related form might.

9.3.2 I shall now discuss the analysis of epistemic might
and could with respect to tense.

Although the glosses of could (19c' - c'""
) indicate senses
that are not quite parallel to those of can, the glosses of might match those of may rather better. When might appears in 'counter-factual' environments, its interpretation (as intimated above) does not seem to be conditional:

9.27a. If it were to snow, the road might be blocked tomorrow.
   b. If it had snowed, the road might be blocked tomorrow.

9.28a. If it were to snow, it's possible that the road would be blocked tomorrow.
   b. If it had snowed, it's possible that the road would be blocked tomorrow.

9.29a. * If it were to snow, it would be possible that the road is blocked tomorrow.
   b. * If it had snowed, it would be possible that the road is blocked tomorrow.

Again, the tense of the epistemic expression seem to be unmarked, and more importantly, superordinate to the 'counter-factuality', as the gloss 'it is possible ... would ...' suggests (cp. Leech 1971). In fact, might is not restricted to cases involving 'counter-factuality'. In the following, it is associated with the future time-reference of the complement:

9.30a. The road might be blocked tomorrow, but today it can't be.
   it isn't.
   won't be.
   b. It is possible that the road will be blocked tomorrow, but it can't be today.
   it isn't.
   won't be.

We may note also the ambiguity of might have:

9.31a. The road might have been blocked yesterday.
   b. The road might have been blocked yesterday if it had been snowing all night.
9.31a'. It is possible that the road was blocked yesterday.

b'. It is possible that the road would have been blocked yesterday if it had been snowing all night. (95)

An analysis of **might** which specifies it as tenseless, in the same way as **may**, may be proposed if we can find some way of explaining the greater tentativeness of **might** with respect to **may**, which is, to an extent, reflected in the glosses (in 19b', d' and d'') 'conceivable' versus 'possible'. The cases where **may** and **might** are not fully interchangeable seem to be governed by: i) the nature of the time reference of the modalized proposition ($t_j$) or: ii) the tense of the world the possibility is valid for ($t_i$) together with: iii) certain expectations and implications. Otherwise we may claim that **may** and **might** are cognitively equivalent and that the form of **might** is a reflex of other factors in the structure of the utterance.

I have already noted that 19c' is equivalent to 19d', at least in some people's speech. The same applies, I think, to 19c'' and d''. But **could** may also, unlike **might**, have a conditional interpretation, as in 19c''''. I would, however, make a modification to this gloss, which was based on Leech's account, in the light of the discussion of **can** above. This modification is motivated by the implausibility of 32' as a gloss for 32:

9.32. If the astronauts lost contact with earth, the whole mission could be ruined.

9.32'. 'If the astronauts lost contact with earth, it would be possible for the whole mission to be ruined'.
It should be noted that 32 is not equivalent to 33, which is plausibly glossed by 33':

9.33. If the astronauts lost contact with earth, the whole mission might be ruined.
9.33'. 'If the astronauts lost contact with earth, it's possible the whole mission would be ruined'.

I suggest that a better gloss for could in 32 and can in 19a would be: 'there is/would be a possibility', i.e.

9.32". 'If the astronauts lost contact with earth, there would be a possibility of the whole mission being ruined'.
9.19ai. 'There's a possibility the road will be blocked tomorrow'.

There are two other reasons for rejecting the gloss 'it is possible for ... to ...'. The first is the strangeness of 34a as against 34b:

9.34a. ? It is possible for him to know the answer.
   b. He can/could know the answer.

The second is its questionable epistemic status. Although 19c may certainly be interpreted epistemically, I find 35a and b closer to dispositional senses, cp. 36a and b:

9.35a. It is possible for them to block the road.
   b. It is possible for the road to be blocked.
9.36a. They are able to block the road.
   b. * The road is able to be blocked.

The sense of 35a and b is surely that the potentiality or possibility is located within the referent of the item within the scope of for. In the case of be able we have to do with an inherent capacity of the grammatical subject. This seems to be the difference between an external and an internal disposition.

Having rejected the 'it is possible for ... to ...' gloss
for epistemic can and could, we are now in a position to re-examine the conditional interpretation 19c"". This, I suggest, is a dispositional sense of could, as the following examples should make clear:

9.37a. The road could be blocked tomorrow if we were able to get enough dynamite to blow it up.
   a'. 'It would be possible for the road to be blocked tomorrow if we were able to get enough dynamite to blow it up'.
   b. We could block the road tomorrow if we were able to get enough dynamite to blow it up.
   b'. 'It would be possible for us to block the road tomorrow if we were able to get enough dynamite to blow it up'.

Finally, it is possible to distinguish the two senses of Anderson's 1971b example:

9.38. We could be in Greenland. (Anderson 1971b, p. 109)

in a more illuminating way if we make the modification to the analysis of epistemic could suggested above. One interpretation of 38 is:

9.38'. 'It would be/have been possible for us to be in Greenland'.

cp. We could be in Greenland if you hadn't made us miss the flight.

The other interpretation is:

9.38". 'There's a possibility that we are in Greenland'.

cp. We could be in Greenland, to judge by the scenery.

§ 9.4 Past Interpretations

9.4.0 Here I shall look at various kinds of 'past' interpretation of modal verbs. It will be necessary to distinguish the 'narrative' past (past in $t_1$), past time reference (past in $t_j$) and 'reported speech' past (a variety
of past in $t_i$ – see § 12.1.2). Furthermore, we will need to distinguish under past in $t_i$ a modal and a non-modal past. I consider in detail only the set of modal expressions restricted to verb phrase initial position with the addition of have to and be supposed to.

9.4.1 Under the notion of 'reported speech', it is possible to distinguish a narrative usage (cp. Seuren 1969), which is divorced from all reference to and within the world in which the reporting is conducted (deictically distant) and a non-narrative usage, which, in some respect, may be deictically proximate. In the following the a-examples are narrative usage:

- b. John said that Harry met Mary right here.

- b. John said that Mary loves Henry.

In Table V, of reported speech uses of modal verbs, I am concerned primarily with narrative usage. The general rule that present tense-forms may, can, must, shall, will have to, be to, have got to, be supposed to are replaced by past tense-forms and that non-present tense-forms remain unchanged appears to have exceptions only in the case of must, needn't and daren't. The case of may and can in reported speech is, I think, a question of non-narrative usage. In 41a and b, reference is to eternal possibility or permission.

- 9.41a. He said that the moon may be made of green cheese.
- b. He said that a citizen may/can question his country's laws.
The following seem to me to be more appropriate to narrative usage:

9.41a'. He said that the moon might be made of green cheese.

b'. He said that a citizen might/could/had the right to question his country's laws.

The case of must, needn't and daren't deserves further examination. With must, there is a narrative reported speech usage which is distinct from had to. Compare:
9.42a. She told him then that the old man must live nearby.

b. She told him then that the old man had to live nearby.

That must behaves differently from may can be seen from:

9.42a'. She told him then that the old man \{ *may \overline{might} \} live nearby.

We may cite as further examples of reported epistemic must:

9.43a. She told him that the old girl must have seen her.

b. She told him that the old girl had to have seen her.

9.44a. She told him then that the gardener must be the culprit.

b. She told him then that the gardener had to be the culprit.

Had to, it seems, reports have to as in:

9.45a. The old man has to live nearby - there's no other explanation.

b. The old girl has to have seen me - I can't explain it otherwise.

c. The gardener has to be the culprit - unless I've overlooked something.

We might distinguish 42a and b in the following terms:

9.42a'. She told him then that she thought the old man must live nearby.

b'. She told him then that (*she thought) the old man had to live nearby.

The fact that we can insert she thought in 42a but not in 42b is consistent with the difference in interpretation in non-reported forms:

9.46a. She must be the murderer.

b. She has to be the murderer.

where must is glossable as: 'I am forced/have reason to conclude/think etc.' and have to as: 'it is necessarily the case that ...'.

With deontic interpretations, there may also be a distinction between must and had to:
9.47a. She told him that people must obey the law.
   b. She told him that people had to obey the law.

9.48a. She told him that Mary must apply herself.
   b. She told him that Mary had to apply herself.

9.49a. She told him that Mary must be back in Palm Springs by the end of that year.
   b. She told him that Mary had to be back in Palm Springs by the end of that year.

9.50a. She told him that her father must live nearby.
   b. She told him that her father had to live nearby.

The difference between 47a and b is between an obligation that either stems from the speaker or is supported by him and one that is objective. Compare:

9.47a'. ?*She told him that she thought/believed that people must obey the law, but she wasn't sure.
   b'. She told him that she thought/believed that people have to obey the law, but she wasn't sure.

In 47b' she thought/believed is to be interpreted: 'she thought/believed it to be the case that ...'. This is consistent with the non-reported senses of must and have to (as noted by Larkin 1969):

9.51a. My daughter must be in by 10 o'clock.
   b. My daughter has to be in by 10 o'clock.

where must is either a performative or a statement about the speaker's requirement, and have to is a statement about a general requirement with which the speaker does not necessarily associate himself. In the case of 50b there is an additional factor involved in interpretation, namely an ambiguity as to the time-reference of the complement, cp.

9.50b'. She told him that her father had to live nearby because she went to help him about the house every day.
   b". She told him that her father{ had to \\ would have to } live nearby so that she could go and help him about the house.
This ambiguity is not present in 48b and 49b, but in both cases would have to could replace had to. Moreover, to give a past-referring interpretation had to could be replaced by had had to.

The above considerations are, I think, consistent with an analysis of must and have to where have to is potentially subject to tense modification (t_1), while must is tenseless. I would distinguish epistemic must, which seems to relate to the illocutionary node, from have to in the following terms:

<table>
<thead>
<tr>
<th>Ill</th>
<th>Mod</th>
<th>Prop</th>
</tr>
</thead>
<tbody>
<tr>
<td>must</td>
<td>Δ·</td>
<td>P</td>
</tr>
<tr>
<td>have to</td>
<td>·</td>
<td>Δ·</td>
</tr>
</tbody>
</table>

In the case of deontic must and have to, the distinction seems to be expressible:

<table>
<thead>
<tr>
<th>Mod</th>
<th>Prop</th>
</tr>
</thead>
<tbody>
<tr>
<td>must</td>
<td>Δ</td>
</tr>
<tr>
<td>have to</td>
<td>{fut, pres, past} (Δ(p))</td>
</tr>
</tbody>
</table>

There are, however, cases of deontic must which do not fit the pattern described above. In the following, it is not clear that must reports a personal necessity or requirement on the part of the speaker that is distinct from have to (cp. 52' and 53'):

9.52a. She ran up to him and said she must tell him the gossip she had just heard.
   b. She ran up to him and said she had to tell him the gossip she had just heard.

9.53a. She told him that she must have the roof fixed.
   b. She told him that she had to have the roof fixed.

9.52'. I must tell you the gossip I've just heard!
9.53'. I must get that roof fixed!
In 53b had to is temporally ambiguous, cp. would have to and had had to, though these forms would also report will have to and had to in 53', which would not be equivalent to must. I suspect that had to in 52b and 53b is the normal reported form for the use of must in 52' and 53'.

It also seems that had to has to be used to report must in questions. Consider:

9.54a. - What must I do?
   - He asked what he {?must
      had to
      should
      would have to
   } do.

b. - Must you leave so soon?
   - She asked if he {must
      had to
      should
      would have to
   } leave so soon.

c. - Must I repeat myself?
   - He asked if he {?must
      had to
      would have to
   } repeat himself.

d. - Must I go there?
   - She asked if she {?must
      had to
      would have to
   } go there.

In 54 must is not a very satisfactory means of reporting the direct speech. The would have to form is presumably related to will have to in direct speech. Although acceptable, it is perhaps not the most accurate report of the question. We should also note that have to may replace must in the direct speech:

9.54a'. What do I have to do?
   b'. Do you have to leave so soon?
   c'. Do I have to repeat myself?
   d'. Do I have to go there?

The explanation I think lies in the pragmatics of the speech situation: must, in questions, is marked as the
form for 'do you require' or in the case of b 'is it (absolutely) essential to you that ...' as against the more usual have to, which is consistent with an external obligation or necessity, i.e. not one stemming from the addressee (96). Even in cases like:

9.55. Must these children starve?

where, clearly, the addressee is not asked whether it is his requirement that they die, the use of must is marked as against have to:

9.55'. Do these children have to starve?

must questions the addressee's willingness to let the apparently inexorable happen: have to, with normal intonation asks whether starvation is inexorable (cp. § 7.4.1).

A word should be said about needn't and daren't. The epistemic use of needn't in reported speech (narrative usage) is possible but less usual than not necessarily. Interestingly, didn't have to allows an epistemic interpretation, whereas didn't need to does not. Compare:

9.56a. She told him that the old man needn't {didn't necessarily} 
{didn't need to}
{didn't have to}
live nearby.

b. She told him that the old girl needn't {hadn't necessarily} 
*didn't need to have
{didn't have to have}
seen her.

c. She told him that the gardener needn't {wasn't necessarily} 
*didn't need to have
{didn't have to}
be the culprit.

d. She told him that there needn't {wasn't necessarily} 
?*didn't need to have
{didn't have to}
be an answer.
The insertion of she thought in 56a in parallel fashion to its insertion in 42a suggests that the difference we discovered between must and had to with respect to 42a is reflected in the difference between not necessarily and didn't have to.

9.57a. She told him that she thought the old man needn't
[ didn't necessarily] live nearby.
[ didn't need to]
[ didn't have to]

b. She told him that she didn't think the old
[ didn't need to live]
[ needed to live]
[ had to live]

With deontic interpretations of needn't, the forms needn't and didn't need to appear to be genuine variants:

9.58a. She told him that people needn't
[ didn't need to]

b. She told him that he needn't
didn't need to go
to work the next day.

c. She told him that Mary needn't
didn't need to return to Palm Springs before the end of the year.

d. She told him that her father needn't
didn't need to live nearby.

Unlike the case of deontic have to, differences in time reference do not seem to be possible with didn't need to cp. needn't:

9.59. She told him that he didn't have gone
[ hadn't needed to go] to work that day.

Deontic uses of dare and daren't are rare: when daren't is reported it remains unchanged, the form didn't dare being interpretable, at least in my speech, only dispositionally.
9.60a. She told him that he \{\text{daren't} \}
\text{be late.}
\begin{itemize}
  \item[b.] She told him that he \{\text{daren't} \}
  \text{question the boss's decision.}
  \item[c.] She told him that she \{\text{daren't} \}
  \text{be seen together with him.}
\end{itemize}

Unlike \textit{needn't}, \textit{daren't} doesn't seem to allow past time
reference of its complement, cp. \textit{didn't dare to}:

9.61a. \textit{*} She told him that she \textit{daren't} have seen
\textit{him before.}
\begin{itemize}
  \item[b.] She told him that she \textit{hadn't dared to see}
  \textit{him before.}
\end{itemize}

\textit{hadn't dared to} in 61b is to be interpreted disposition-
ally rather than deontically.

9.4.2 Having established the paradigm of modal expres-
sions in reported speech, I turn now to the question of
narrative past (past \(t_i\)) interpretations of modals. In
considering this question we must be careful to distinguish
cases of past time-reference (past \(t_j\)), though it is not
always easy to do so. Notionally, the narrative past con-
cerns states, actions and events within a world which is
no longer actual, while past time-reference is reference
to a point or period of time irrespective of the concept-
ual world it is involved in. Thus in 62, 62a represents
narrative past, while 62b represents past time-reference
when the tense is present (\(t_i\)):

\begin{itemize}
  \item[9.62a.] He worked in France.
  \item[b.] He has worked in France.
\end{itemize}

Formal confusion is introduced by the fact that in some
subordinate clauses the simple past (normally narrative)
occurs where it is difficult to justify a change in the
speaker’s conceptual world. For example:

9.63. This seems to be an interesting candidate. He’s spent several years abroad—actually when he was* has been* with the army—speaks fluent Swahili.

Apart from 62b the following may also have past time reference ($t_j$ past) without being narrative past:

9.64a. He’s been working in France.
   b. He used to work in France.

In fact, 64b can be both past-referring and narrative past. With modal expressions, although we can construct syntactic distinctions similar to those in 62, assignment to the various categories of past is less easy.

In Table VI I am concerned with narrative past interpretations of modal expressions used epistemically. It is apparent from the test-frames that the only three forms that come anywhere near being generally acceptable when interpreted epistemically are could, would and was/were supposed to, and even these are doubtful when a particular instance (cp. paradigm b) is involved. We should distinguish between would, on the one hand, and could and was/were supposed to on the other. Would expresses a prediction made via the narrative viewpoint. Could and was/were supposed to express a quantification over times (‘was often’) and a general opinion respectively. Thus would tends to be more acceptable when its complement refers to an event, while could and was/were supposed to tend to be more acceptable when their complements refer to states-of-affairs.
The situation is totally different when the modal expressions have past-referring complements as in paradigms f - j. Here we find the pattern of acceptability to parallel that to be found with modal expressions in present tense situations. And indeed, the essential point is that in all these cases but one, the modality is not past but (at least implicitly) present, i.e. 'we (nowadays) consider it possible/likely etc. that something was the case'. This is, of course, confirmation of the view taken in earlier sections that epistemic expressions like may, etc. are 'tenseless' or 'unmarked for tense'. The one exception, it seems to me, is was/ were supposed to have been etc., which contrasts with is/are supposed to have been etc. The past tense-form here indicates a past supposition about the state-of-affairs, while a present tense-form indicates a still valid supposition.
Table VI

a. They left on 26th May 1578. In those days the journey from London to Edinburgh

\[
\{ \text{might} \quad \text{could} \quad \text{must} \quad \text{had to} \quad \text{would} \quad \text{should} \quad \text{ought to} \quad \text{needn't} \}\text{ be dangerous.}
\]

b. Maisie \{ \text{might} \quad \text{could} \quad \text{must} \quad \text{had to} \}\text{ be there the day they celebrated the repeal of prohibition.}

\[
\{ \text{*would} \quad \text{*should} \quad \text{*ought to} \quad \text{*needn't} \}\text{ was suppose to}
\]

c. On that occasion reflation \{ \text{might} \quad \text{could} \quad \text{must} \quad \text{had to} \}\text{ be the answer.}

\[
\{ \text{would} \quad \text{should} \quad \text{ought to} \quad \text{needn't} \}\text{ was suppose to}
\]

d. In those days people \{ \text{might} \quad \text{could} \quad \text{must} \quad \text{had to} \}\text{ under-}

\[
\text{take risky journeys.}
\]

e. On that occasion they \{ \text{might} \quad \text{could} \quad \text{must} \quad \text{had to} \}\text{ re-}

\[
\text{flate the economy.}
\]

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f. They left on 26th May 1578. In those days the
g. Maisie
h. On that occasion reflation
i. In those days people
j. On that occasion they

Table VI (continued)
journey from London to Edinburgh
have been dangerous.

\[
\begin{align*}
\text{might} & \quad \text{could} \\
\text{must} & \quad \text{*had to} \\
\text{would} & \quad \text{*should} \\
\text{*ought to} & \quad \text{?needn't} \\
\text{was supposed to} & \quad \text{have been dangerous.}
\end{align*}
\]

\[
\begin{align*}
\text{might} & \quad \text{could} \\
\text{must} & \quad \text{*had to} \\
\text{would} & \quad \text{should} \\
\text{ought to} & \quad \text{needn't} \\
\text{was supposed to} & \quad \text{have been there the}
\end{align*}
\]

\[
\begin{align*}
\text{might} & \quad \text{could} \\
\text{must} & \quad \text{*had to} \\
\text{would} & \quad \text{should} \\
\text{ought to} & \quad \text{needn't} \\
\text{was supposed to} & \quad \text{night they celebrated the repeal of prohibition.}
\end{align*}
\]

\[
\begin{align*}
\text{might} & \quad \text{could} \\
\text{must} & \quad \text{*had to} \\
\text{would} & \quad \text{should} \\
\text{ought to} & \quad \text{needn't} \\
\text{was supposed to} & \quad \text{have been the answer.}
\end{align*}
\]

\[
\begin{align*}
\text{might} & \quad \text{could} \\
\text{must} & \quad \text{*had to} \\
\text{would} & \quad \text{should} \\
\text{ought to} & \quad \text{needn't} \\
\text{were supposed to} & \quad \text{undertaken risky journeys.}
\end{align*}
\]

\[
\begin{align*}
\text{might} & \quad \text{could} \\
\text{must} & \quad \text{*had to} \\
\text{would} & \quad \text{should} \\
\text{ought to} & \quad \text{needn't} \\
\text{were supposed to} & \quad \text{reflated the economy.}
\end{align*}
\]

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Two further points should be noted about paradigms f - j. First, should have been etc. and ought to have been etc. are not epistemically interpretable, cp. the restrictions on their 'present tense use' in § 7.1.2. Second, would have been etc. is ambiguous between a prediction via the narrative-past viewpoint and a counterfactual conditional, the latter presuming some inexplicit if-clause (cp. § 13.3.1).

Paradigms for deontic interpretations are given in Table VII. From paradigms a - d it seems that could, had to, daren't and was/were supposed to are readily interpretable as past deontics in all cases. Might, it seems to me, is marginal. This may have something to do with the tendency of may, rather than can, to be used performatively. That might appears to be generally more acceptable as a reported speech past is consistent with this. Otherwise, might in past tense situations (cp. might have in paradigms e - h) is more readily interpreted epistemically. Acceptability in the case of was/were to is dependent on the nature of the complement: it is acceptable when the complement refers to an event, less so when it refers to a state-of-affairs. Needn't, at least in my speech, does not have a narrative past interpretation as a deontic. It would have to be replaced by didn't needn't to or didn't have to.

In paradigms e - h, the few cases of genuine past interpretations include daren't have, should have, ought to have, was/were to have, but there are certain restrictions:
Table VII

a. In those days {wealthy
poor} prisoners

{might
could
*must
had to
*should
*ought to
*had got to
*needn't
*daren’t
were supposed to
*were to
*had better

{enjoy special privileges.
endure squalid conditions.

b. Maisie {go to the Mah-Jong

{might
could
*must
had to
*should
*ought to
*had got to
*needn't
daren’t
was supposed to
was to
*had better

party that night.

{might
could
*must
had to
*should
*ought to
*had got to
*needn't
daren’t
were supposed to
were to
*had better

c. On that occasion they

stay at school.

{might
could
*must
had to
*should
*ought to
*had got to
*needn't
daren’t
were supposed to
*were to
*had better

d. In those days they

the church.

{might
could
*must
had to
*should
*ought to
*had got to
*needn't
daren’t
were supposed to
*were to
*had better

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Table VII (continued)

e. In those days (wealthy} prisoners
  *wealthy
  poor

  might have
  could have
  must have
  *had to have
  ?should have
  ought to have
  *had got to have
  ?needn't have
  daren't have
  were supposed to have
  *were to have
  *had better have

  enjoyed special privileges.
  endured squalid conditions.

f. Maisie

  might have
  could have
  *must have
  *had to have
  should have
  ought to have
  *had got to have
  needn't have
  daren't have
  ?was supposed to have
  was to have
  *had better have
  gone to the Mah-Jong party that night.

  might have
  could have
  *must have
  *had to have
  should have
  ought to have
  *had got to have
  needn't have
  daren't have
  ?were supposed to have
  were to have
  *had better have

g. On that occasion they

  stayed at school.

  might have
  could have
  must have
  *had to have
  ?should have
  ought to have
  *had got to have
  ?needn't have
  daren't have
  were supposed to have
  *were to have
  *had better have

h. In those days they

  gone into the church.
should have, ought to have, and was/were to have are acceptable only with event complements (paradigms f, g, h) not with state-of-affairs complements (paradigm e). With could have, interpretations appear to be conditional, i.e. 'could have ... if he/she/they had wanted etc.', but not past. In the case of might have, it is difficult to get a deontic interpretation at all with paradigm e (state-of-affairs), while in the case of paradigms f - h (events) a deontic past interpretation seems possible only if a very stilted style of language is presumed. Finally, in the case of was/were supposed to have a past deontic interpretation is possible when the complement refers to an event, especially if the utterance is completed by something like: but he/she/they didn't. With paradigm e (state-of-affairs) was/were supposed to have can only have, so far as I can determine, an epistemic interpretation, namely 'it was supposed/thought that they did/had done etc.'.

With dispositionally interpretable modal expressions, the paradigms, though minimal in extent, reveal something significant about the nature of narrative past modality. I assume for the sake of argument that habitual interpretations (of would) may be regarded as dispositional.

9.65a. In those days she \( \begin{cases} \text{could} \\
\text{would} \end{cases} \) dance.

b. On that occasion she \( \begin{cases} \text{could} \\
* \text{would} \end{cases} \) answer the question.

c. He \( \begin{cases} \text{would} \\
\text{would} \end{cases} \) always help a friend. (98)
d. Last year he \{ \text{\textit{could}} \} \text{go to England for a couple of weeks.}
\{ \text{\textit{would}} \}

9.66a. In those days she \{ \text{\textit{could have}} \} \text{danced.}
\{ \text{\textit{would have}} \}

b. On that occasion she \{ \text{\textit{could have}} \} \text{answered the question.}
\{ \text{\textit{would have}} \}

c. He \{ \text{\textit{would have}} \} \text{always helped a friend.}
\{ \text{\textit{would have}} \}

d. Last year he \{ \text{\textit{could have}} \} \text{gone to England for a couple of weeks.}
\{ \text{\textit{would have}} \}

In 65, \text{\textit{could}} and \text{\textit{would}} are acceptable when the complement does not refer to a single event, cp. \text{\textit{would}}. \text{\textit{Could}}, however, can occur with a complement referring to a single event in 65b, though not with 65d. With an event like \text{\textit{go to England}}, \text{\textit{was able}} would be the modal expression used. As I suggested earlier (§ 9.1.2) \text{\textit{was able}} entails the realization of what is referred to by its complement, while \text{\textit{could}} does not. It may be noted that under very specific conditions and with the right intonation, it is possible to construe: \text{Last year he could go to England for two weeks, cp.}

9.67. - He says he can't go to England for more than a couple of days.
- I don't see why! Last year he could go for two weeks.

With \text{\textit{could}} in 65b and in 67, the speaker is concerned with whether the referent of the subject is in a position to do something, not with whether he did it. In other words, the focus is on the (dispositional) modality. In the case of \text{\textit{was able}}, the focus is on the event. It is
a fact of English - one that is often difficult for non-native speakers to comprehend - that a distinction is made between a modal past and a non-modal past. In general, the non-present forms of synthetic modals are capable of expressing a modal (as against as non-modal) past, but was supposed to and in some cases had to\(^{(99)}\) may be added to the list. Non-modal pasts are probably more frequent than modal pasts. This is presumably a natural reflex of the pragmatics of present and past as conceptual worlds - we generally know more about the past than we do about the present, or at least, are more prepared to commit ourselves about it. Past tense \((t_1)\) has a categorical nature that present tense \((t_1)\) does not; present tense is typically 'open' with respect to realization or factuality. The preference for stative, or states-of-affairs, or habitual interpretations of complements with modal past tenses may also be seen as a reflex of the pragmatics of past tense \((t_1)\), since both states and repeated actions are not located specifically at a time point. The modal past is non-implicative as to the realization of the complement - a non-specific time-reference does not seem to contradict this. With events or instan-tial action there is always a specific time point referred to or implied. This seems to run counter to the less categorical nature of the non-implicative modal past, but is, of course, consistent with the more categorical nature of the non-modal past.
§ 9.5 Conditional Interpretations

9.5.1 Although it may seem that distinctions between conditional and past-tenses of the modal verbs are hard to establish notionally, there are some cases where, despite superficial identity, this may be done. Palmer (1965) cites two cases:

9.68a. If he went to the circus, he would enjoy himself.
\[= i) \] If he were to go to the circus, he would enjoy himself.
\[= ii) \] If (= whenever) he went to the circus, he enjoyed himself.

b. If he practised, he could lift 2 hundredweight.
\[= i) \] If he were to practise, he would be able to lift 2 cwt.
\[= ii) \] If (= whenever) he practised, he was able to lift 2 cwt.

The distinction is conditioned by two distinct types of conditional sentences (cp. § 13.1.2).

In the following I shall consider the modal expressions in Tables VI and VII and in paradigms 65 and 66 from the point of view of conditionality, by which I mean primarily 'irrealis'. We should note first that the synthetic modal verbs may not all have a conditional interpretation of their non-present forms. The forms that are found with a conditional interpretation are:

- epistemic: could, would
- deontic: could/might
- dispositional: could (would)

Would is enclosed in brackets under dispositional since I dispute the existence of a discrete volitional sense of would: stressed would cannot have a conditional interpretation. Should is primarily acceptable as a marker of...
'tentative' realis conditionality; when the subject of the apodosis is \( I \) (i.e. \( I \) or \( we \)), it may also, like would, be interpreted as irrealis, assuming an epistemic interpretation. \textit{Ought to} is not found with an irrealis interpretation, at least not in my speech. Palmer (1965), however, claims that it may have a conditional interpretation in his example (p. 134): 

9.69. If he wanted to find out, he ought to ask me. 
For me, this utterance is not interpretable as an irrealis conditional. For such an interpretation it would have to read: 

9.69'. If he (had) wanted to find out, he ought to have asked me. 
As it stands, 69 is presumably interpretable as a tentative use of a past tense-form of \textit{want} and thus equivalent to: 

9.69". If he wants to find out, he ought to ask me. 
cp. \textit{There was something I wanted to ask you} = \textit{There is something I want to ask you}. Anderson (1971b) also classifies \textit{ought to} as conditional, but his criteria for conditionality, indeed his use of the term, are different from mine. The term 'tentative' used by Palmer (1965) and Leech (1971) would be more appropriate to Anderson's sense. Here are a few more examples where I find a conditional interpretation of \textit{ought to} impossible, acceptable conditional forms being given in the b examples. 

9.70a. * If she were to go, she ought to take an umbrella. 

b. If she goes/should go, she ought to take an umbrella. 

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9.71a. * If he knew who did it, he ought to tell us.
   b. If he knew who did it, he ought to have told us.

9.72a. * If she were to see him, she ought to invite him to the wedding.
   b. If she sees/should see him she ought to invite him to the wedding.

9.73a. ?* If he were a bachelor, he ought to live alone.
   b. If he is a bachelor, he ought to live alone.

I turn now to constructions of the might have-type. From the exceptions in the paradigms of § 9.4.2 (cp. § 13.3), it seems that the following inventory of conditionally interpretable items may be established:

   epistemic: might have could have
             would have (also: should have
                     with I-subjects)
             ?needn't have

deonitic: could/might have
         ?needn't have

dispositional: could have
              (would have)

The ? in front of needn't indicates that a conditional interpretation is marginal, preferred forms being: wouldn't necessarily have and wouldn't have needed to. The brackets around would have indicate, as before, my doubts about the volitional interpretation of would and will.

Although we do not find, at least under normal circumstances, utterances like: She can have done it with an interpretation such as: 'she is able to have done it' or: 'she has been able to do it', and we would therefore expect utterances like: She could have done it not to be interpretable as 'she would be able to have done it', we do in fact find the interpretation: 'she would have been able to do it' possible for: She could have done it.
Similarly, with a deontic interpretation could have is interpretable: 'she would have been allowed to do it' rather than: "she would be allowed to have done it'.

Could have is, I believe, a genuine past-referring conditional form, as the following suggests:

9.74a. She could have done it if she had wanted to.
   b. She would have done it if she had wanted to.

There is, however, another interpretation of could have possible in:

9.75. The journey from Edinburgh to London could have been dangerous in those days but in fact it wasn't.

Here the interpretation of could have seems to be past rather than conditional, as the gloss suggests:

9.75. 'There was a possibility/chance in those days that the journey from Edinburgh to London would be dangerous (but in fact it wasn't)' (would in the gloss functions as a future in the past not as a conditional).

The conditional epistemic interpretation of could have requires some comment. It is difficult to find a conditional epistemic interpretation for the following apparently epistemically interpretable utterances.

9.76a. The journey from Edinburgh to London could have been dangerous if they had attempted it.
   b. The journey from Edinburgh to London could have been dangerous if they hadn't had an armed guard.

The following potential paraphrases seem to me to be questionable:
There would have been a chance/possibility that the journey from Edinburgh to London was/would be dangerous if they had attempted it.

It would have been possible for the journey from Edinburgh to London to have been dangerous if they hadn't had an armed guard.

The only appropriate paraphrases seem to involve a 'past possibility':

There was a chance that the journey ... would have been dangerous if they had attempted it/if they hadn't been accompanied by armed guards.'

It seems, then, that epistemic could have represents a past possibility \((t_1)\) with past time reference \((t_j)\).

Finally, I wish to look at the forms: should have and ought to have, which I have excluded from the list of conditionally interpretable 'past' modal + have forms. Although they may occur in reals conditional sentences, they do not occur in irrealis conditional sentences.\(^{100}\)

* They should have arrived yesterday if they had left on time.
  b. * They should have arrived if they were to leave on time.

The following acceptable utterance:

They should have arrived if they left on time.

is a realis condition with past tense, not past subjunctive, interpretation of left.

As we have already seen, both should and ought to may be epistemically or deontically interpretable - though there
are considerable restrictions on their occurrence. In:

9.79a. They should have arrived yesterday.
    b. They ought to have arrived yesterday.

the deontic interpretations may be paraphrased:

9.79'. They were supposed to arrive yesterday.

It seems that should have and ought to have, at least in these examples, are simply past tenses (cp. § 9.4.2).

With the rarer epistemic interpretations should and ought to are modalities distinct from the marker of past time-reference have. Their meaning is difficult to paraphrase - perhaps the modal adverb presumably comes closest.

9.79". 'Presumably, they arrived yesterday.'

Contextually, should and ought to require that some kind of reconstruction (in the past) or speculation (in the present or future) of the occurrence of an event, usually in a sequence of events, has taken place. They seem to have certain similarities to must and will - they are deductive like must and yet predictive like will. They differ from must and will in the degree of certainty they express. In view of this, it would seem to be an appealing proposal to analyze them as 'tentative' forms (cp. might, could). It is worth noting that must does not have a related 'tentative' form, and that would is only 'tentative' with a dispositional interpretation, mainly in questions:

9.80. Would you come in?

The form to be found in:

9.81. That'd be the postman.

is to be interpreted as past t_i with fut t_j, this utterance being inappropriate in a situation where there has
just been a knock on the door, but perfectly appropriate as an interpolation during a narrative in which a knock on the door figures.

9.5.2 In conclusion, I present a table of the tense and time-reference possibilities of the modal items discussed in this chapter. I have not been able to discuss every entry - in particular the 'necessitative' and 'obligative' verbs have received little treatment. I have listed only present tense-forms and anomalous forms; where a regular past tense-form or conditional form exists, I have noted this in the margin.
Table VIII: Tense and time-reference possibilities of modal verbs restricted to verb-phrase initial position

<table>
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<tr>
<th></th>
<th>'tense-actual predic-tive</th>
<th>tenta-tive</th>
<th>narrative reported condition-less</th>
<th>past</th>
<th>speech</th>
<th>al past</th>
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<td>epistemic</td>
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1*) cp. had to/would have to; 2*) cp. was to; 3*) cp. was supposed to; 4*) cp. had got to; 5*) cp. was to; 6*) was/would be supposed to; 7*) didn't/wouldn't need to
Table VIII (continued)

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<td>? daren't have</td>
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| **dispositional** | | |
| (will have) | - | - | - |
| can have | - | - | - |
| would have | - | - | + |
| could have | ?+ | + | + |

1*) cp. had to have/would have had to
2*) cp. was supposed to have
3*) cp. would have had to
4*) cp. were to have
5*) cp. were/would be supposed to have
5*) cp. didn't need to/wouldn't have needed to
§ 10 Negation and Modality

10.0 Negation in natural languages presents a much more complicated picture than the system of negation in formal logic. Thus, although we can find natural language examples where strict polar negation (also called contrary negation cp. Jespersen 1924) applies:

That's not possible ≡ That's impossible

there are many cases where we might expect polar negation but in fact find neutralizing negation (cp. Jespersen's contradictory negation):

That's not long  ≠ That's short

Here: That's not long is not only consistent with: That's short but also with: That's not short and: That's neither long nor short. When we have non-complementary terms, negation has to be neutralizing:

That's not blue  → That's black

° That's black, white, red, etc.

If we include pragmatic factors, the picture is even more complex.

10.1a. Say, that's not  bad ≡ Say, that's pretty good.
       b. Well, that's not  bad (but it's not good either).
       c. He's not  wicked ≡ It's not true that he's wicked.
       d. He's not  wicked (just a little naughty).

The fact that we need to make use of intonation is surely an indication of the potential ambiguity of negation. In 1c and d we could say negation functions as a means of denying the validity of a proposition (1c), or of questioning the appropriateness of a term in that proposition (1d). Another example of this is:
10.2a. He didn't ¬dance.

Here the proposition (he dance) - which was presumably entailed at some point during the discourse - is stated to be invalid. On the other hand:

10.2b. He didn't ¬dance.

entails that the referent of the subject did something comparable, sing, for example.

There is another function of negation (topic negation) whereby a term in a proposition is corrected:

10.3. It's not Bill who's going.

The proposition (Bill is going) is denied, but at the same time there is an entailment that someone is going.

A further ramification is to be seen in:

10.4a. It's not the case that Bill's going.
   b. Bill's not ¬going.

which are logically equivalent but illocutionarily distinct. 4a normally asserts the falsity of the proposition (Bill's going), while 4b informs the hearer or addressee that anticipation of the proposition (Bill's going) is not tenable ('cancelled expectation' in Leech's 1974 terms). This is true of 4b only with the neutral intonation that I have indicated; with a different intonation and stress assignment we can get an interpretation that is very close to 4a:

10.4b'. Bill's ¬not going.

Formal linguistic accounts of negation may be divided into three types:

i) those that treat negation as a single operator expans-
tion of Aux in phrase structure rules - this is the position of earlier transformational grammar (Chomsky 1957, 1965). Modifications of this allow a second negative operator (Klima 1964, Hakutani/Hargis 1972). (Cp. §§ 5.3.1 and 5.3.3)

ii) those that see negation as a complex of negation possibilities. So far as I am aware, this position has never been formalized. Jackendoff (1968) develops an account of negation that includes a number of distinct semantic functions while still adhering to a standard formalization like that of type (i) above. The different types of negation are thus regarded as a problem for the interpretive component.

iii) those that treat negation as a 'higher predicate' which may be 'lowered' onto the lower predicate by means of transformational rules. This is the view taken by generative semanticists (cp. Lakoff 1971, f. ex.).

Whilst I cannot accept that any of these approaches is adequate, the last view seems logically and language philosophically most acceptable, though the term 'predicate' may be a stumbling block (cp. § 1.1.3). The view put forward by Wierzbicka (1972) whereby negation is the reflex of 'I don't want' or 'nill' (a term taken from Duns Scotus) seems to be a variant of this position which is, to an extent, convincing with regard to the function of negation in denial.

Having made these introductory remarks on the complex nature of negation, I turn to a discussion of negation
with respect to modality and the Mod node.

§ 10.1 Modality Negation and Proposition Negation

10.1.0 Let us assume that the type of negation involved in denials is properly treated as an operator outside the proposition, and let us associate this item with the Mod node in the framework established in § 1, since a denial involves the speaker's view of what is true or not, just as a judging epistemic expression involves the speaker's view of how likely something is. We may call this 'modality negation'. (Jackendoff 1972 considers negation to be a modality while subscribing to a very different view of semantics, cp. § 5.4). The question is, is it sufficient to have this 'modality negation' alone to account for all the negation phenomena involved in the analysis of modality? Even if we adopt the view that the various types of negation illustrated in § 10.0 may be accounted for in terms of pragmatics (illocutions, scope, etc. and lowering transformations), there are some cases which, I submit, cannot be so handled. For this I have two main arguments: double negation and the negation of modality expressions.

By 'double negation' I mean not the cumulative negation of Middle English or non-standard Modern English, but utterances like:

10.5a. He isn't not going.
   b. He can't not go.

where two negative items cancel, as in formal logic, to give a positive claim. Pragmatically, of course, there is a distinction between a double negated form and
a non-emphatic positive form, that is: He isn't not going is not strongly equivalent to: He's going. Klima (1964) and Seuren (1969) have suggested that emphatic forms like:

10.6a. He isn't going.
b. He does know the answer.
c. He can go.

may be derived from a double negative source i.e. 'it is not the case that ... not'.

There are two facts relevant to my argument: i) that two negatives can occur in a simplex sentence and be interpretable without difficulty; ii) that not more than two negatives seem to be interpretable in a simplex sentence. Although we find forms like:

10.7. It's not impossible that she's not going.

i.e. a complex sentence with three negatives, which may, though perhaps not so readily, be interpreted, we do not find:

10.8. ?* She can't not be not going.

occurring naturally. It seems that to deny a negation claim about a negative proposition requires an 'analytic' form - it will become clear in later discussions that such utterances, like apparently negative 'performatives', are to be treated as secondary or descriptive utterances with a complex proposition which contains a propositional or transferred modality (see § 7.4.1). Thus 7 is given the approximate structural analysis:

10.7' Mod Prop
    not (not-possible (she not go))

The claim that negation is outside and 'above' (= higher
in the phrase structure) the proposition may be upheld if another claim, namely that there is only one source for negation, is discarded. There is at least a second type of negation, which is associated with Prop and which I shall call henceforth 'proposition negation'. Proposition negation may, as in formal logic, be regarded as being outside the 'proposition' in the logical sense, not the sense I employ, in being an operator. This avoids the consequence, to some logically suspect, of having a basic proposition that is negative, (for discussion see Wierzbicka 1972) i.e. rather than \((\sim P) x, y\), we have \((\sim (P x, y))\). Since Prop in my formulation may be complex, more than one occurrence of proposition negation is possible, as would be necessary to explain \(7^{(103)}\). Modality negation, however, is limited to one occurrence.

The alternative to this, having complex negation under Mod, is not an attractive proposal, as is indicated by the behaviour of negation with regard to the modal verbs may and can with epistemic interpretations. Given that:

\[
10.9a. \quad \text{He may be coming.} \\
10.9b. \quad \text{He can be coming.}
\]

may be analyzed along the lines suggested in § 9.3.1 as:

\[
10.9a'. \quad \nabla \cdot p \\
10.9b'. \quad \nabla p
\]

we should presumably analyze 10.10a and b in parallel fashion:

\[
10.10a. \quad \text{He may not be coming.} \\
10.10b. \quad \text{He can't be coming.}
\]

\[
10.10a'. \quad \nabla \cdot \sim p \\
10.10b'. \quad \sim \nabla p
\]
There is, however, a problem with 10b: its meaning seems to be 'it's not possibly the case that he's coming' rather than 'it's not the case that he is possibly coming', as we might expect from the analysis arrived at in § 9.3.1. The analysis should, therefore, presumably be something like 10b'.

10.10b*. \text{\sim} \Box \cdot \text{p}

This analysis seems to be confirmed when we consider 11.

10.11. He can't not be coming.

which can be glossed: 'it's not possibly the case that he is not coming', but not: 'it's not possibly not the case that he's coming'. This, I think, indicates that a multiple modality negation analysis of 11 is excluded and that the claim that only one negator can appear under Mod upheld, at least for the cases discussed.

As further confirmation we may add the following set of examples:

10.12a. It's not\{ Bill who's not going.
   b. * It's not\{ not Bill who's going.
   c. It's Bill who's not going.
   d. It's not\{ Bill who's going.

Topic negation is, I suggest, a sub-type of modality negation; we are not denying the validity of a proposition as such, but the validity of the proposition with respect to one of its arguments. The proposition may be positive (12d) or negative (12a and c). A negative topic denies the identification of the topicalized argument; a positive topic identifies the argument involved. We can have a combination of modality negation (on Topic) and proposition
negation \( (✓(x\; \text{go})) \) as in 12a, but not double modality negation, as in 12b.

§ 10.2 Stress and Negation

10.2.0 Having argued for a distinction between modality and proposition negation and having made various references to stress and negation patterns, I shall now investigate this complex of superficial phenomena. The account of stress given here is a modified version of Kingdon 1958.

10.2.1 In declarative sentences there seem to be three stress possibilities for modal verbs: stressed, de-stressed, emphatically or nuclear stressed, as may be seen in:

- She may go there. si mē .sav go 3er
- She can go there. si kən .sav go 3er
- She will go there. si 3wəl .sav go 3er

Different senses of the modal verbs - I shall confine myself to may, can, shall, will, must, might, could, should, would, ought to, be to, have to here - are associated with various stress possibilities, which I list in Table IX. I ignore the possibility of contrastive stress in this table, since contrastive stress may be considered a re-stressing under specific conditions, cp.

10.13a. You 3will do it.
    b. You 3will \( ✓ \) do these things.

13a is contrastive and might be glossed: 'I say you'll do it and don't you dare say you won't'; 13b, however, has will with nuclear stress as part of a complex intonation contour and may be glossed: 'you persist in doing these things'.
Although it doesn't seem to be possible to see stress as a clear guide to the sense a modal verb is used in, it is striking that in the case of may, must, might and should an epistemic interpretation seems to be associated with a stressed modal verb, while a deontic interpretation goes with a destressed modal verb. In the case of will and shall, which contradict the pattern observable with the other modal verbs, it can be pointed out that their status as epistemics is debatable, the assumption that they may be epistemic being attributable to the fact that they are also markers of future tense (cp. § 7.3.2). The fact that can
is also an exception may perhaps not be unrelated to the fact that it differs in other respects from the behaviour of may (cp. § 9.3.1); could, notably, seems to be epistemically interpretable both when stressed and when destressed.

The pattern that we have observed with declaratives is also to be observed with wh-questions, but in yes-no questions all items may normally appear stressed. Those with 'reduced' forms, however can also, in informal speech, appear destressed:

10.14a. Shall I go?
   b. Shall I go?

The pattern with negatives is again different. Normally the negative item not is stressed, but when not coalesces with the modal verb, the stress moves to the modal verb, irrespective of whether it normally has stress in the sense it is being used in.

10.15. I shall not go \(\Rightarrow\) I shan't go.

Thus the following forms are all stressed: isn't to, aren't to, shan't, can't, won't, mustn't, mightn't, couldn't, shouldn't, wouldn't, oughtn't to. An apparent exception is have to which has the negative form: don't/ doesn't have to; in fact the principle is the same, the difference is that have to requires do-support in negatives (and questions). (cp. also: haven't got to). May does not normally have a reduced negative form.(104).

There is a complication in the pattern of negation in the shape of contrasts such as:

10.16a. She cannot go. \(\Rightarrow\) She can't go.
   b. She can not go.
16a is reducible to can't; 16b is not. Their stress patterns are:

10.16a'. șî kânt/kânt gō  
   b'. șî kăn nôt gō  (105)

16a has modality negation, while 16b has proposition negation; in this case, notably, not becomes nuclear. In the case of must, there is a tendency for a deontic interpretation to be associated with the reduction of not, while an epistemic interpretation does not seem to allow such a reduction of not. 17b has an epistemic interpretation and the same stress pattern as 18, which is also epistemic. Both 17b and 18 are cases of proposition negation.

10.17a. He můstn't be tůld.  
       b. He můst nôt have been tůld.  

10.18. He můy nôt have been tůld.  

Although we have failed to find any neat pattern correlating negation and modal interpretation, stress does to an extent function as a means for disambiguating the various senses. The fact that the wrong stress pattern hinders a native speaker's comprehension of which sense of a modal verb (with or without negation) is intended indicates that a stress marking is inherent to at least some of the modal verbs, even though its assignment may, unfortunately, be asymmetric.

§ 10.3 An Analysis of Modality Expressions with Respect to Negation

10.3.0 I shall now examine more closely which type of negation is normally associated with the modality items
listed in § 7.0. As before I shall divide the modality items up according to their interpretation i.e. epistemic (§ 10.3.1), deontic (§ 10.3.2) and dispositional (§ 10.3.3). Three questions concern us: i) is the negative form modality or proposition negation or both? ii) where is modality negation indistinguishable from proposition negation? iii) where are there gaps vis-a-vis the paradigm of positive modality items?

10.3.1 I begin first with analytic epistemic expressions. The following paradigms should be compared with those in § 7.1.1.

\[
\begin{align*}
\text{think} \\
\text{believe} \\
\text{know} \\
\text{doubt} \\
\text{suppose} \\
\text{*guess} \\
\text{*suspect}
\end{align*}
\]

10.19. I don't \{that\} he's there.

It would seem that, because we have an overt two-clause structure, the negation should apply to the state of knowledge rather than the complement proposition. This is only the case if the above are interpreted as contradictions or denials (in speech don't would have nuclear stress), but such interpretations are not what concern us here. The sense of: I don't think/believe/know ... is best conveyed by the gloss: 'I think/I'm inclined to believe he's not there.' The sense of: I don't suppose he's there is similarly: 'I suppose he's not there'. Transformational grammarians have called this phenomenon 'negative-transportation' or 'negative raising' (106) (see § 10.4.1). In the case of I don't doubt (and its more idiomatic synonym: I've no doubt) the sense is: 'I think it highly
likely that he's there'. The three cases may be summarized:

10.19a. \[ \phi \left( \sim (\text{he be there}) \right) \]
10.19b. \[ \phi' \left( \sim (\text{he be there}) \right) \]
10.19c. \[ \sim \phi \left( \sim (\text{he be there}) \right) \]

where \( \phi \) represents an unspecified operator (cp. § 7.1.2).

19c needs some explanation. It can be observed that doubt is very close in meaning to don't think (= \( \phi' \)) thus don't doubt should be analyzed as \( \sim \phi \) (cp. some modal logical systems: possible-not = contingent; not-contingent = not-possible-not = necessary (certain), see § 4.1.3). That \( (\phi \sim \sim) \) would be implausible as an analysis of don't doubt may perhaps be indicated by the non-occurrence of doubt ... not, except with contrastively stressed not, which is a contradiction, or with contrastively stressed doubt, which is also a contradiction (107).

10.20. \[ \{ \begin{array}{c} \text{think} \\ \text{believe} \\ \text{know} \\ \text{*doubt} \\ \text{suppose} \\ \text{guess} \\ \text{suspect} \end{array} \} \ (\text{that) he's not there.} \]

think-not, and believe-not are less idiomatic forms of not-think and not-believe; know-not is not equivalent to not-know. The forms suppose-not, guess-not, and suspect-not seem to differ only in degree and connotation, and I will tentatively group them together. This leaves only: I know he's not there unaccounted for by the previous three approximate analyses. My suggestion for it is:

10.19d. \[ \phi'' \left( \sim (\text{he be there}) \right) \]

In terms of modal logic we are on more familiar ground with the following paradigms:
10.21a. It's not possible
   *probable likely certain
   ?conceivable obvious
   ?clear impossible improbable unlikely
   ?uncertain inconceivable

   [that he's there.]  

b. It's possible
   *probable likely certain
   conceivable obvious clear
   ?impossible improbable unlikely
   ?uncertain inconceivable

   (that) he's not there.

With some of the above the acceptability or at least idiomaticity is improved by the addition of intensifiers, f. ex.: It's very likely, It's not even conceivable, It's not at all certain. Moreover, except as denials, not possible and, to an extent also, not certain are unidiomatic: preferred forms are impossible and uncertain. With the apparently doubly negated modal expressions: not impossible, etc. we have to decide whether we have a case of double negation under Mod or whether only one negation is under Mod with the second negation and modal expression in Prop. The criteria for deciding this is whether an utterance like:

10.22. It's not impossible that he's there.

can be said without reference to a prior explicit or implicit judgment of likelihood or belief, i.e. I believe he's there; it's unlikely that he's there, etc.\(^{(109)}\). My
feeling is that it cannot, and thus the possibility of it being the basis of a counter-claim to my claim that there can be only one negation under Mod does not arise. I would say, therefore, that doubly negated modal expressions like: it's not impossible are analyzable as:

$$\text{Mod} \quad \sim \quad \text{Prop} \quad \sim \left[ \sim \square \quad (\text{he be there}) \right]$$

Since $\square$ here is an operator within the Prop, it may be negated independently of the sub-proposition - we can in principle have:

$$\sim \left[ \sim \square \quad (\sim (\text{he be there})) \right]$$

The remaining examples in the paradigms may be summarized in terms of two approximate analyses:

$$\sim \alpha[\text{Prop}]$$

$$\sim \alpha[\text{Prop}]$$

where $\alpha$ is an unspecified epistemic modality ($\square, \Box$, etc.).

There remain now the 'synthetic' modals. Here, it is somewhat harder to determine what kind of negation is involved. A common procedure to determine where the negation belongs relies on the pattern of paraphrase expressions; this can, as noted by Huddleston (1969), be misleading. Problems arise particularly in the case of will, should and ought to.
10.22a.  He

\[
\{ \begin{align*}
\text{may not} & \quad \text{m} \\
\text{mightn't} & \quad \text{m} \\
\text{can't} & \quad \text{m} \\
\text{can not} & \quad \text{m} \\
\text{couldn't} & \quad \text{m} \\
\text{must not} & \quad \text{m} \\
\text{ought not to/oughtn't to} & \quad \text{m} \\
\text{should not/shouldn't} & \quad \text{m} \\
\text{won't} & \quad \text{m} \\
\text{will not} & \quad \text{m} \\
\text{has to not} & \quad \text{m} \\
\text{is supposed not to} & \quad \text{m} \\
\text{appears not to} & \quad \text{m} \\
\text{seems not to} & \quad \text{m} \\
\text{is bound not to} & \quad \text{m} \\
\text{said not to} & \quad \text{m} \\
\text{needn't} & \quad \text{m}
\end{align*} \}
\]

be there.

b.  He's not \{ \begin{align*}
\text{bound} & \quad \text{m} \\
\text{supposed} & \quad \text{m} \\
\text{said} & \quad \text{m}
\end{align*} \} to be there.

c.  He doesn't \{ \begin{align*}
\text{appear} & \quad \text{m} \\
\text{need} & \quad \text{m} \\
\text{have to} & \quad \text{m}
\end{align*} \} to be there.

The form: He's not supposed to be there cannot receive an epistemic interpretation, likewise doesn't need. He's not said to be there can only be interpreted as a contradiction, i.e. with Mod negation and be said as part of the proposition. In the case of: not bound to, too, I think the utterance, whilst not a direct contradiction, is a modification of a prior assertion or proposition, that is, when the intonation is: He's not bound to be there. With the forms: doesn't appear and doesn't seem there is ambiguity between a contradiction and an interpretation identical to the interpretation of: appear not and seem not. These forms then might be accounted for in the light of 'negative transportation'.

Of the remaining forms, those marked with 'm' are cases of modality negation, i.e.

\[ \sim \alpha[\text{prop}] \]
the rest have proposition negation, i.e.

\[ \kappa \left[ \neg (\text{Prop}) \right] \]

I have already commented on the negation of will in § 7.3.3, where I claimed that there is only one negation of will, i.e. there is no cognitive distinction between won't and will not. It should be added, of course, that will not/won't may equally reflect modality and proposition negation. In: He won't be going there, I would say that won't represents proposition negation, i.e. 'it will be the case that he doesn't go there'. This I believe is the most usual interpretation of won't. On the other hand, in: He won't go, you know where 'he'll go' is denied, we have modality negation, i.e. 'it will not be the case that he goes there (contrary to what you say)'.

The case of ought to and should is, I believe, similar. Normally, they represent proposition negation but can represent denials i.e. modality negation. This suggests, of course, a distinction between won't, shouldn't and oughtn't, on the one hand, and can't and doesn't have to, on the other, a distinction that may not be unrelated to the ascription of these sets in § 7 to different types of modality.

I present below an argument which upholds my analysis of won't, shouldn't and oughtn't. To avoid the difficulty involved in using glosses for the modal verb when trying to determine their analysis with regard to negation (cp. § 7.3.2 on will), I resort to other means. We have already identified the forms can't and doesn't have to,
as modality negation; we have also noted that can not is interpretable as proposition negation. Observe what happens in the following:

10.23a. There doesn't have to be a solution \( \neq \) There has to be no solution.
   b. There can't be a solution \( \equiv \) There can be no solution. \( (\nabla \sim) \)
   solution. \( (\sim \nabla) \)

Although: There can be no solution is ambiguous between \( (\sim \nabla) \) and \( (\nabla \sim) \) interpretations, There has to be no solution is unambiguously an instance of proposition negation, i.e. \( (\Delta \sim) \). This pattern suggests that where an utterance with negated nominal is unambiguously and apparently synonymous with an utterance with the modal item negated, then we have an instance of proposition negation, for example:

10.24. There may not be a solution \(^{110} \) \( \equiv \) There may be no solution.

We may thus establish the negations of should, ought to and will under normal conditions of stress as proposition negations.

10.25a. There should be no solution \( \equiv \) There shouldn't be a solution.
   b. There ought to be no solution \( \equiv \) There oughtn't to be a solution.
   c. There will be no solution \( \equiv \) There won't be a solution.

10.3.2 The pattern of deontically interpretable modality items introduces a new problem - the problem of apparent negative illocutions. This can be seen best in the case of the potentially performative 'analytic' modality expressions.
Searle (1969) accepts that negative illocutions do exist (cp. Austin's (1962) criteria for performativity which include non-negativity) and he cites as an example: I don't promise to come.

The distinction between illocutions and 'performatives' was discussed in § 5.1, and it is clear that Searle's example, while not including a negative performative, does represent a particular illocution by virtue of the fact that it commits, or rather fails to commit, the speaker to a course of future action. This is, however, by no means evidence for a negative illocution, at least in the view of illocution adopted in this study (111) (for further discussion see §§ 11.1 and 2). What concerns us here is whether the examples above can be interpreted performatively, as their non-negative equivalents can, or whether they may only be interpreted descriptively (i.e. non-performatively). Whilst it may be claimed that the illocutionary act involved in: I don't promise to come is that of refusing, it is, I think, impossible to uphold such a claim in the case of 26a, and b: 'I refuse to require/demand/request that he be there' ≠ 26a; 'I refuse to forbid/permit/order him to be there' ≠ 26b.

These glosses are equivalent rather to:

10.26a'. I won't [require\demand\request] that he be there.
b'. I won't \(\{\text{forbid} \}\) him to be there.

I find it impossible to accept 26a, and b, in any interpretation other than a descriptive one, thus: I don't permit him to be there is glossable as: 'I say I don't give/haven't given my permission for him to be there' cp. I permit him to be there 'I (hereby) give my permission for him to be there'. A possible objection to this argument is that forbid is logically: \(\sim\) permit', and yet forbid may have a performative interpretation. But here, this kind of logic is inadequate, because we are not concerned exclusively with a closed system: forbid \(\equiv\) \(\sim\) permit; \(\sim\) forbid \(\equiv\) permit, etc. Particularly in the latter case, it can be seen that:

\[10.27. \text{I don't forbid him to be there} \neq \text{I permit him to be there.}\]

in the normal use of English. On the other hand, 'not forbid' might be equivalent to 'allow'(112), which does not normally have a performative interpretation (cp. § 7.2.1).

In the analysis of illocutions and performative utterances I develop in § 11 on the basis of arguments in § 5.1, it will be possible to represent examples like a and b without resort to symbolism like Searle's:

\[\sim F(p) \text{ (where } F \text{ is an illocutionary force)}\]

For the sake of completeness we may look at the complementary paradigms for the modal expressions in 26a and b.
10.28a. I demand that he should not be there.  

b. I forbid him not to be there.

Whether the question mark on forbid is structurally significant I would doubt; it seems far more likely that it merely reflects the unusualness of the combination forbid + not. The utterance seems at least to be construable. In passing we may also note a restriction on negative reduction in the case of subjunctive should (cp. § 12.2.2).

10.29. * I demand that he shouldn't be there.

I shall now turn to the 'stative' 'analytic' expressions of deontic modality.

10.30a. You aren't entitled to be there.

b. It isn't required that you (should) be there.

c. You are not to be there.
d. It is \{permitted, required, requested, expected\} for you not to be there.

Apart from the dubiousness of negated be requested and be ordered there is little difficulty in finding a suitable analysis for the forms in these paradigms - the 30b and d forms may be regarded as 'extraposed' or 'clefted' versions of certain 30a and c forms respectively. In all cases, I suggest, the negation is proposition negation (unless 30c and d are interpreted as denials, in which case modality negation is to be supposed).

Thus we have two cases:

\[
\begin{align*}
\text{Ill} & \quad \text{Mod} & \quad \text{Prop} \\
10.30a', b' & \quad \cdot & \quad \cdot & \quad \left[ \sim \text{permitted (you be there)} \right] \\
& \quad \cdot & \quad \cdot & \quad \text{etc.} \\
c', d' & \quad \cdot & \quad \cdot & \quad \left[ \text{permitted (} \sim \text{(you be there)} \right] \\
& \quad \cdot & \quad \cdot & \quad \text{etc.}
\end{align*}
\]

Synthetic expressions of deontic modality, like those of epistemic modality, are not so susceptible to simple analysis.

\[
\begin{align*}
\text{mustn't} & \\
\text{oughtn't to} & \\
\text{shan't} & \\
\text{shouldn't} & \\
\text{won't} & \\
\text{can't} & \\
\text{*couldn't} & \text{m} \\
\text{may not} & \text{m} \\
\text{*mightn't} & \\
\text{aren't to/'}re not to} & \\
\text{?*hadn't better} & \\
\text{'}d better not} & \\
\text{needn't} & \text{m} \\
\text{don't need to} & \text{m} \\
\text{daren't} & \text{m} \\
\text{don't dare to} & \text{m} \\
\text{don't have to} & \text{m} \\
\text{'}re not supposed to} & \\
\text{haven't got to} & \text{m}
\end{align*}
\]

10.31. You \{mustn't, oughtn't to, shan't, shouldn't, won't, can't, *couldn't, may not, *mightn't, aren't to/’re not to\} be there. (113, 114)

The test I used with epistemics doesn't appear to work
with deontics - at best we get very odd sentences:

10.32a. You oughtn't to buy a car.
   b. ? You ought to buy no car.

The paradigm above was arrived at by comparing non-negated forms: if may, for example, deontically indicates 'permission', does may not indicate 'absence of permission' (modality negation) or 'permission not to do something' (proposition negation)? Clearly, the former - which is interesting in view of the fact that epistemically may not indicates proposition negation.

The paradigm given accords with the claims made by Leech (1971). But there are a number of problem cases, in particular: mustn't, oughtn't, shouldn't and be not supposed to. Although mustn't, for example, is logically equivalent to 'required not to', its meaning seems to be closer to 'not allowed to'. In some forms of modal logic, 'not allowed to' and 'required not to' are said to be equivalent. English, however, as an example of natural language, certainly does not have strong equivalence between:

10.33a. You mustn't go.
   b. You may not go.

The difference between may not and mustn't is, I think, that may not is essentially the expression of prohibition and usually performative cp. I forbid, despite the fact that we might wish to analyze it on other criteria: 'I don't permit/it is not permitted'. In the case of mustn't it is difficult to interpret it performatively: it asserts the existence of an obligation/requirement not to do something. Differences between the modality negated modals
and the proposition negated modals can be seen in their behaviour as answers to questions of the form: modal verb + I (+ to) + go?. The first set gives the cases where the modality negated modal is the appropriate form for the reply: No, and thus the direct negation of the positive.

10.34a. May I go? Yes you may. No you may not.

b. Have I got to go? Yes you have. No you haven't.

c. Do I have to go? Yes you do. No you don't.

need only has a Q-form and a negative-form, so the positive has to be provided by some other verb, must and have to:

10.35. Need I go? Yes you *need/must/have to. No you needn't.

The rare item dare in its deontic interpretation 'have the right/justification' is a similar case to need.

10.36. Dare we expect that of them? Yes, we *dare/can. No, we daren't.

In the second set a negative answer has to be of a different order - to answer with a negation of the modal verb in the question is not equivalent to answering No; it gives a rather different answer as in:

10.37. Must I go? No, in fact you mustn't! (No \(\equiv\) you needn't/don't have to)
10.38a. Must I go? Yes you must. 
No you needn't/don't have to. 
Yes you should. 

b. Should I go? No you don't have to. 
Yes you ought to. 

10.39. Shall I go? 
Yes, go. 
No, don't go. 

In the case of shan't and won't we cannot construct question-answer patterns like the above because will and shall in questions have different functions, f. ex. shall enquires whether the addressee is agreeable to some course of action; and would probably be answered with an imperative:

10.39. Shall I go? 
Yes, go. 
No, don't go.

Except for voluntative will, which is not deontic, there is no doubt that won't and shan't represent propositional negation, as they normally do epistemically, given the terms of reference of this study. Won't is interpretable as: 'I insist that ... not ...' or: 'I command that ... not ...' and shan't as: 'I promise that ... not ...' 'I guarantee that ... not ...'.

There are two items that remain unaccounted for: \( \psi \) be to, and be supposed to. If these are cases of proposition negation, we should expect them to behave rather like the second set above, not the first. In the case of \( \psi \) be to, I suspect that its negation is not simply equivalent to: No.
10.40. Am I to go? Yes ≡ you are to go. No ≠ you're not to go.

Here again, a response like you needn't or you don't have to or there's no need etc. seems to be the appropriate way of neutralizing the obligation contained in the modal.

In the case of be supposed to, we may have a case where both modality and proposition negation are involved.

Usually:

10.41. You're not supposed to go.

has to be interpreted 'You were told (etc.) not to go'
i.e. proposition modality.

But it seems that modality negation is to be found in:

10.42. Am I supposed to go? Yes ≡ you're supposed to (go). No ?≠ you're not supposed to (go).

If this is so, we can associate: be supposed to with the set of verbs that permit negative-transportation. Compare:

10.43a. I don't believe he's there. (~believe (p))
   b. I don't believe he's there. (believe (~p))
   b'. = I believe he's not there.

10.44a. He's not supposed to be there. (~supposed (p))
   b. He's not supposed to be there. (supposed (~p))
   a'. = He's supposed to not be there.
   b'. = He's supposed not to be there.

10.3.3 Having looked at the pattern with deontically interpretable modal verbs, I turn now to dispositional senses of expressions of modality. Here certain items resist negation.
10.45a. I'm not\{apt
\} to go. (115)
\{liable
\}
\{able
\}
\{willing
\}
\{prepared
\}
\{determined
\}
\{resolved
\}
\{capable
\}
of going.
want
\{hope
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\{intend
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case of tendency, then, the opposite must be stasis, which would be glossable 'it is the case that ... always/never ...'.

The case be resolved/determined is not clear: it may be that they refer to resultant states (cp. intend which refers to a state but not a resultant one) and thus may not be negated. When, however, we examine other cases in more detail and when we see that hope allows no negation cp. wish, want and expect do, while its German equivalent hoffen does, it seems more likely that the lack of negation is a matter of inability to undergo negative transportation, which is a notably idiosyncratic rule. I take up the question of negative transportation in § 10.4.1. Finally we may note the pattern of negation with synthetic expressions of dispositional modality.

10.46a. He \{ \text{can't, needn't} \} sing.
   b. He doesn't need to sing.
   c. He \{ \text{will not sing, need not sing, needs to not sing} \}

As a dispositional can't, I think, unlike its epistemic and deontic interpretations, normally represents propositional negation i.e. (\text{n}able). (Obviously when it represents a denial, it may be modality negation.) This follows from the analysis of dispositional modals as being associated with Prop and not Mod (cp. § 7.4.2). I have excluded won't and will not since I rejected them as candidates for dispositional modality in § 7.3.2. With doesn't need to we have propositional negation unlike epistemic and deontic senses of needn't, and parallel to dispositional
can't. The question mark on needn't indicates my doubt as to its use in a dispositional sense; the form don't/doesn't need to certainly seems more usual. Leech (1971) notes a pair of examples where a difference of interpretation is dependent on whether needn't or doesn't need to appears.

10.47a. The hedges needn't be trimmed this week.
   b. The hedges don't need to be trimmed this week.

(Leech 1971, p. 96)

where 47a would probably be interpreted as a lack of requirement i.e. 'it is not necessary (for you) to trim the hedges' i.e. deontic need, while 47b would most likely be interpreted: 'The hedges don't need trimming this week' i.e. a lack of need.116

The remaining cases, which have proposition negation, assuming appropriate stress patterns, are unusual, though obviously possible. The synthetic form need is not found in such cases; it has to be replaced by the regular: need/needs to not. Whether emphatic will can occur with a negative complement I very much doubt.

§ 10.4 'Negative Transportation' and the Question of Equivalence

10.4.1 It has frequently been noted that equivalence relationships exist between various configurations of modality and negation. For instance, it's not possible that he's there is said to be equivalent to it's certain/necessary that he's not there i.e.

\[ \neg \forall p = \Delta \neg p \]
Likewise: He doesn't have to be there or He needn't be there are said to be equivalent to: He may not be there i.e.

\[ \neg \Delta p = \nabla \neg p \]

Such equivalences may undoubtedly be found, but even in the case of epistemics, where they are clearest, we cannot claim a strong paraphrase relation, i.e. semantic identity, as, for example, Anderson (1972) does in postulating primitive \( \nabla \) modality and deriving \( \Delta \) modality from it by means of multiple negation \( (\neg \nabla \neg) \).

I have already noted the weakness of the equivalence between may not and mustn't in deontic interpretations. As noted in § 6.2.3 Leech (1969) establishes a second system of logical equivalences based on volition: i.e.

\[
\neg 'willing' = 'insist' \neg \\
\neg 'insist' = 'willing' \neg \\
\neg 'willing' \neg = 'insist' \neg \]

etc.

The inadequacy of such systems is obvious when we try to apply them to modals other than may, can, must, have to and the putatively volitional will. Shouldn't and oughtn't to, for example, would receive the same specification as mustn't, to which they are not equivalent. And, to take a German example, soll nicht and darf nicht are not equivalent, but would both be specified \( \Box \neg p \) (likewise: sollte nicht, dürfte nicht) I distinguish them as \( \Box \neg p \) and \( \Delta \neg p \) respectively (cp. § 7.2.2). Another point where equivalences in modal logic fail to capture natural language semantics is to be seen in one case of double modal negation:

\[ \neg \nabla \equiv \nabla \]
Only in cases of denial is: *It's not impossible* equivalent to: *It is possible* (with stressed *is*) i.e.

\[
\begin{array}{ccc}
\text{Il} & \text{Mod} & \text{Prop} \\
\vdots & \neg \vdots & \{ \text{it is not possible} \} \\
\equiv & \vdots & \{ \text{it is possible} \}
\end{array}
\]

Otherwise *it's not impossible* asserts that something is possible but implies that it is only just possible. That is, the logical meaning captures only part, not the most important part, of the meaning of *it's not impossible*. Welke (1965) notes equivalence between:

10.48a. Wir wollen nun einmal nicht, daß dort eine Bank steht.

\[b. \quad \text{Wir wollen nun einmal, daß dort keine Bank steht.}\]

And it is possible to find English examples where such equivalence holds:

10.49a. I never want to see you again.

\[b. \quad \text{I want never to see you again.}\]

In terms of Leech's volitional system, we might say that *want* (or *wollen*) represents a neutral form of volition intermediate between willingsness 'weak volition' (Leech 1969) and insistence 'strong volition', and that the equivalence:

\[\text{vol} \sim \equiv \sim \text{vol}\]

may be established cp. *\sim \text{willing* = insist*\sim* and *\sim \text{insist = willing*\sim* above. An alternative approach is to treat Welke's example as a case of negative transportation:}

\[\text{vol (} \sim \text{ p) } \equiv \sim \text{vol (p)}\]

- in fact the difference is slight, a negative transportation approach introduces a negative proposition, the equivalence approach is unstructured and relies on permutability.
The problem as regards natural languages is whether such equivalence and-or transportation process is adequate to explain all the cases of negated want that are not attributable to denial. I incline to the view that it is not. It is difficult to see what's wrong with the equivalence in:

10.50. I don't want to see the movie \( \equiv \) I want to not see the movie.

The obvious observation about the two sentences is that the second is unidiomatic. If so, then it is conceivable that English 'idiomaticizes' by transporting the negative to the main clause. If, however, we paraphrase want with have a desire, we come up with utterances which are not, to me at least, equivalent:

10.51a. I have no desire to watch the movie.
   b. \( \not= \) I have a desire not to watch the movie.

Experiencing a lack of desire to do something and experiencing a desire to not do something are clearly two very different emotional states. We must conclude, I think that, though in some cases it may apply, in 512 for example, negative transportation may not be supposed to operate in all cases of negative want.

The phenomenon of negative transportation is subject to a considerable degree of doubt and reservation in the literature. It has been noted by Stockwell et al 1972 that two classes of items seem to be involved (i) when the 'propositional attitude' expressed is 'a moderate one, such as think, believe, seem'; ii) when 'the attitude is dichotomous, such as true and false'. To an extent this is borne
out by the findings of this chapter, and § 7.3 though we
would have to add certain items like want, intend which
sometimes, but not always, appear to behave similarly -
want and intend could hardly be termed 'moderate'.

Stockwell et al. do not accept that there is a process of
negative-transportation, claiming that an interpretive
equivalence may hold in the case of the 'propositional
attitudes' they cite. In other words, the pair of sentenc-
es:

10.52a. I don't think he's there.
       b. I think he's not there.

(assuming them to be synonymous) are not derived from the
same structure, but are identified as equivalent by the
(interpretive) semantic component. This is problematic,
as they note, if 52a(and sentences like it) is ambiguous,
as I claim it is, between a denial and a sense equivalent
to 52b, since there is no means of distinguishing structur-
ally the two senses of 52a. On the other hand, a rule or
process of negative movement is problematic in the case
of know.

10.53a. I don't know that he's there.
       b. ≠ I know he's not there.

but: I don't know that he's there can be very nearly equiv-
alent to:

10.54a. I don't think he's there.
       b. ≡ I think he's not there.

Clearly - whether an equivalence holds or not depends on
the semantics of the verbal item when negated. In this
respect, the Stockwell et al. proposal is more appealing.
Is it possible to produce an analysis which is sensitive
to the ambiguity of sentences like 52a? If the denial interpretation of 52a is correctly analyzed:

10.52a'. Ill Mod Prop

[I think (he be there)]

and 52b is correctly analyzed:

10.52b'. Ill Mod Prop

[I think (he be there)]

then for the second interpretation of 52a we could only have two possible analyses:

10.52a". Ill Mod Prop

[I don't think (he be there)]

Analysis 52a" requires not only that we put certain propositional attitudes on the same level with illocutions (cp. § 7.1) but also that these propositional attitudes, and hence by implication, illocutions, can be negative (cp. § 10.1). Such an analysis is what is suggested in Lyons 1977.

What should determine our decision as to which analysis is appropriate is the nature of the utterance? If it can be claimed that: I don't think he's there is descriptive of the speaker's state of mind, then analysis 52a" with 'I don't think' as part of the proposition is appropriate. If, on the other hand, it can be claimed that: I don't think he's there is primarily an expression of the speaker's commitment to the validity of the proposition (he be there), then analysis 52a" would be more correct. Further arguments relevant to this problem will be found in §§ 11 and 12.

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10.4.2 In this chapter I have distinguished modality negation from propositional negation. Effectively, I have subcategorized modality negation into denials (of the form $\sim \nu$) and negative modalities (of the form $\sim \mu$). The number of items that have a negative modality interpretation is restricted in comparison to those that may have an interpretation with propositional negation. I list below the items that I find to be susceptible to negative modality.

not doubt (have no doubt), not know, impossible, uncertain, unlikely, inconceivable, not necessary can't, needn't, not have to, couldn't as epistemics may not, needn't, not need to, not have to, haven't got to can't, daren't as deontics.

The following cases I have counted as proposition negation: won't, shan't, as epistemics.

won't, shan't, wouldn't, oughtn't, mustn't as deontics.

can't, not need to as dispositionals.
§ 11 Mood in Main Clauses

11.0 In this chapter I shall examine constructions involving 'main clause mood' (cp. §§ 3.1.1 and 3.1.2) as opposed to 'dependent' or 'subordinate clause mood', which is discussed in §§ 12 - 14. (It will be recalled that the traditional term 'mood' is being used as a convenient label for phenomena that are related to both the illocutionary and the modality node in my framework.) In particular I shall be concerned with interrogatives (also termed 'mode' in some grammars), imperatives and hortatives. I shall not restrict my examination to morphological moods but will also examine cases where modal verbs supplet the mood system, i.e. where they may be classifed as subjunctive substitutes.

§ 11.1 The Illocutionary Node

11.1.0 In § 5.1 I discussed some of the problems associated with the 'performative' analysis of mood and I suggested an alternative involving the illocutionary node I. Before discussing the syntax of 'main clause' mood it will be necessary to establish an analytical framework for the node I.

11.1.1 From the numerous kinds of mood discussed in § 3.1, from only a very small sample of the world's language, it seemed that classifications of mood in one language in direct contradiction of those in another language were not to be found. This encourages us to posit on the basis of the sample certain abstract illocution types which may be said to underlie moods in individual languages. Let me
suggest first three parameters of illocutionary meaning:

1) stating - reporting - pledging ...
2) questioning - wondering - considering ...
3) determining - proposing - requiring ...

These may be distinguished as follows: in 1) the illocutions all describe the world or imagined worlds; in 2) the illocutions seek solutions to some lack of knowledge about the world; in 3) the illocutions seek to change the world in some way. The differences between the individual terms in the parameters may involve factuality, actuality, beliefs/commitments, volitions, emotions, 'power structures', etc. These are mainly the province of Mod (cp. § 7.4.2).

It is, of course, arguable that we should posit a fourth type involving exclamations (cp. Householder 1971 and § 15.1). The illocutionary status of exclamations is by no means clear: on the one hand their syntax seems to 'borrow' from other illocutionary types (compare: Is syntax easy? and Boy, is syntax easy!); on the other hand, their function in human language seems to be closest to the signalling function generally supposed for non-human communication. I shall not pursue this matter further.

To symbolize these three illocutionary types I shall use the Stenius notation adopted (with modifications) by Lyons (1977), namely • for type 1; ? for type 2; and ! for type 3.

There is a certain apparent similarity between • and ?, which neither seems to share with!. Both • and ? may have a tense specification under Mod i.e. \( t_1 \). Thus the combination • and fut \( t_1 \) gives the configuration for predictive
statements (or 'predictive mood' cp. § 2.2.5), while the combination · and past \( t_i \) gives the configuration for recounting (past) events (or 'narrative/reportive mood' cp. § 2.2.5), as in: He'll be there and: He was there respectively. When the illocutionary mark is ?`, we have: Will he be there? and: Was he there? respectively.

Such 'moods' are independent of epistemicity because they are both subject to epistemic qualification.

11.1. I think/know\{ he'll be there. he was there.
11.2. Will he be there
        Was he there
}\, do you think/know?

Although we clearly do not have comparable forms with !

11.3 * Will be there!
     * Were there!
     Be there!

I will suggest that tense\( (t_i) \) is not completely irrelevant to sentences with a ! mark (§ 11.2.5).

I have not so far mentioned the different participant relations associated with ·, ? and !. Participants may be simple or compound based on the primitive I (speaker), II (hearer), III (not-speaker, not-hearer) with the possibility of II and III being specified for number. (118)

Consider the following epistemic expressions:

11.4a. I know she's there.
       b. You know she's there.
       c. He knows she's there.

11.5a. Do I think she's coming?
       b. Do you think she's coming?
       c. Does he think she's coming?

4a differs from 4b and c in that the statement is not the result of prior investigation (I exclude the interpretation
of 4b when glossable I tell you (you know) she's there', which is performative). It can be said that the speaker has a qualitatively different role from II and III in the case of .. In the case of ? the qualitatively different role is that of the hearer. 5a may be either an echo-question or an alter-ego question, but it may not, except perhaps humorously, be considered a question asked of the hearer as 5b can. With 5c, if it is asked, there are two possible interpretations, one where the hearer is in a position to know the state of III's mind (cp. 4c) and one where he is not in such a position. In the latter case, 5c 'conversationally entails' in the sense of Gordon/Lakoff 1971 (cp. § 1.4.2) the instruction: Ask him if he thinks she's coming! and can be appropriately responded to by: I don't know, I'll ask him, etc.

It has often been noted that the hearer occupies a special position in the case of imperatives, especially by those who derive imperatives from 'performative' structures with abstract [I order] (cp. R. Lakoff 1968, Lakoff 1971, etc.) and yet there have been many traditional grammarians who have set up imperative paradigms complete for all persons. It may be that this approach is not so idiosyncratic if we get away from the naive assumption that imperatives are equatable with ordering and from another assumption, namely that imperatives are the only form reflecting a 'world changing' illocution (cp. § 11.2.1).

§ 11.2 'World Changing' Utterances
11.2.0 In the following sections, I shall examine the
syntax and semantics of what I classify as 'world changing' utterances: imperatives, hortatives, jussives and 'performative use'.

11.2.1 Let me consider first the following:

11.6a. Go!
   b. You will go!
   c. You are to go!

6a can be interpreted, depending on the speech situation and linguistic context, as a command, as advice, as a challenge, or even as a granting of permission. The following bring out these interpretations:

11.6a'. Go! And never let me see you again!
   a". Go west, my son!
   a"'. Go then, nobody's stopping you.
   a"". Go if you want to.

It is difficult to see how the common transformational proposal that imperatives like 6a should be derived from deontic will as in 6b can account for such semantic diversity. The range of interpretations of 6b is considerably less than that of 6a. 6b can be interpreted as a command (performative use), but it does not appear to have any other important interpretation possibilities. 6b' is performative use; 6b" is predictive and thus non-deontic; 6b"' has the sense of 'won't not' and it is difficult to determine whether this is deontic (whether performative or not) or epistemic i.e. predictive like 6b".

11.6b'. You will go there, reconnoitre and report back as soon as possible.
   b". (You'll go when the time comes - just you wait and see.)
   b"'. You will go, if I have any say in the matter.

We may note also that 6a", a"' and a"" are very close in meaning to other forms: 6a" to: Why not go west, my son,

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Why don't you go west, my son, or You should go west, my son; 6a"" to: You can go, nobody's stopping you; and 6a"" to: You can/may go if you wish.

Of 6c we may say that there are at least the following interpretations:

6c'. You are to go (because I say so).

6c". You are to go (because X, who has authority, says so).

6c"". You are to go (as you requested - your request has been granted).

which again only partially correspond with those of 6a.

There is also a pragmatic argument against identifying 6a and b in deep structure. In the a' interpretation the speaker exercises his authority; in the b' interpretation the speaker's authority is, I think, taken for granted - he describes events taking placed in a world of his making.

Although I reject the transformationalist analysis of imperatives and 'performatives' deontic will constructions, there are undoubtedly certain features they share in common. One of these is an intention to change the world. I wish to propose an analysis capturing this before proceeding to a closer examination of imperatives and hortatives, which I have so far not mentioned. The proposal is that 'performatives' uses of deontic modals be analyzed in terms of the same world-changing illocutionary mark as imperatives. Thus an utterance like 6b with interpretation b' would be analyzed roughly:

\[ \text{Ill} \quad \text{Mod} \quad \text{Prop} \]
\[ ! \quad \text{fut} \quad (\text{you go}) \]
\[ \Rightarrow \quad \text{You will go!} \]

There are two definite advantages to this analysis. Firstly,
it avoids distinguishing several will's in semantic specification. We can say that will realizes future tense ($t_1$) and that this can be given a deontic interpretation by 'performativization' through !. Epistemic will is really the use of futurity to make predictions, which I analyze as:

\[
\text{Ill} \quad \text{Mod} \quad \text{Prop} \\
\cdot \quad \text{fut} \quad \text{(you go)} \\
\Rightarrow \text{You'll go.}
\]

The fact that it is not always possible to clearly differentiate epistemic and deontic will as noted above with 6b'" is consistent with such an analysis. So is the fact that it is difficult to attest a non-performative deontic use of will (cp. § 7.2.2).

Secondly, the pragmatic nature of utterances like 6b' (establishing what will happen in a world of one's making), which I noted above, is well reflected in this analysis.

11.2.2 I turn now to the syntax of imperative constructions. Basic is the uninflected verb form (in English). In addition there may be 'softeners' like: please; intensifiers like the pro-verb do; a negative element don't/do not; and the contrastive pronoun: you. The paradigm is thus:

\[
\begin{align*}
\text{Go!} & \\
\text{Please go!} & \\
\text{Do go!} & \\
\text{Do please go!} & \\
\text{Don't go!} & \\
\text{Please don't go!} & \\
\text{Don't not go!} & \\
\text{You go!} & \\
* \text{Do you go!} & \\
\text{Don't you go!} & \\
\text{Don't you go (mind)!} & \text{ i.e. /don't go/}
\end{align*}
\]

The last appears to be minatory rather than commanding.
The fact that: *Do you go is not permissible is to be explained as a restriction on contrastive items. The force of do is that of a double-negative: Do go may be interpreted: 'don't not go' and anticipates: 'you are not going'. The force of you is obviously: 'you, not someone else' supposing: 'someone else is going'. In other words, the anticipation and the supposition are contradictory. Similarly, although we can have contrastive do + negative:

17.1'.  Đồ'n't go! — you are going.

we cannot have:

11.7".  * Đồ'n't yốu go! (cp. Don't yốu go!)

The item please when added after the imperative has a reinforcing effect rather than a softening effect. Normally, a separate tone group is required.

11.8a.  Go, please.
        b  ?* Go please!

It may also be noted in this context that: Do please go is not a softened version of: Do go, which actually is encouraging rather than ordering, but an intensified version of: Please go!, which may be either polite or begging depending on intonation. It is only the latter interpretation which may be associated with: Do please go.

As noted in § 11.2.1, imperatives do not necessarily express orders or commands. Apart from intonation, which can distinguish several senses of imperatives, and apart from the cases already mentioned, there are items which always have this effect. These include: well, oh, then as in: Well, go; Then go: Oh, go (, I don't care). In:

11.9a.  Go then!
        b.  Đồ'n't go then!
The effect of *then* on the simple imperative: *Go!* is to turn it into an expression of (grudging) permission or a proposal; with the negative: *Don't go!* it is to turn it into a proposal only.

There are co-occurrence restrictions with *then.*

11.10a. ?*Do please go then.*
   b. ?*Please don't go then.*
   c. ?*Don't you go then.*
   d. *Then do go.*
   e. *Then don't you go.*

I have by no means exhausted all the syntactic possibilities of imperative constructions, but this is not so important. We have established that the formation of imperative constructions is systematic - this may be indicated by the following syntactic description:

\[
\left( \left\{ \begin{array}{c}
   \text{please} \\
   \text{Neg (Neg) (please)}
\end{array} \right\} \right) \lor \left( \left\{ \begin{array}{c}
   \text{then} \\
   \text{please}
\end{array} \right\} \right)
\]

Constraint: *please ... please.*

Let me now consider how imperative constructions may be analyzed. We have posited so far an illocutionary mark !, and we suppose that the propositional content of: *Go!* is (you go) or more abstractly: \((v_g \text{ go})\). What we have not discussed is the nature of Mod.

In factual statements the nature of Mod is glossed: 'it is the case' and symbolized . It would be counter-intuitive to suppose that imperatives have the same specification, unless, of course, a convention were introduced whereby * has a different value when the III node is *. (There are, however, other objections to this if * is also used to
specify performative uses, where an 'it is the case' specification with future tense \((t_1^*)\) is apparently necessary (and more plausible)). (121)

It has been noted (§§ 7.2.1 and 9.1.2) that complements of deontic expressions necessarily have a time reference (not tense) that is future with respect to the deontic expressions and that this may be redundant as far as semantic specification is concerned. This is something that is shared by imperative constructions. Is the future tense \((t_1^*)\) specification that we proposed in the case of performative deontic will also necessary for imperatives? I claim that it is not.

What future modality and the modality of imperatives have in common is non-factuality. Saying that something 'will be the case' does not assert its factuality in the way that saying that something 'is the case' or 'was the case' does. Similarly, seeking to change the world by means of a command, etc. entails that what the speaker wants to happen is at the moment of speaking \((t_0)\) a non-fact. I suggest therefore that future \(t_1^*\) is just one of a number of modality specifications involving non-factuality and that some other non-factual specification is involved in the analysis of imperatives. I shall not pursue this further here since the question of non-factuality arises again in the discussion of interrogatives (§ 11.3).

The analysis of negative imperatives poses a basic question: is the negation modality negation or propositional negation?
The question is not so easy to answer. We might, for instance, argue that saying: Don't go is expressing the demand that something should not come to be the case. Moreover, the fact that we can have utterances like: Don't not go might suggest that the don't realizes modality negation and the not propositional negation. However, it is also possible to argue that: Don't go is at least weakly paraphrasable by: 'I tell you not to go', which presumably has propositional negation, i.e. 'I say: it (should) be the case: you not go'. And if we compare paraphrases of a negative command with prohibitions, we find the meaning relationship is not one of strict equivalence:

11.11a. I forbid you to go.
   b. I tell you not to go.

The difference between 11a and b lies not just in the degree of strength involved in forbidding and commanding but in entailments too. 11a entails a prior intention of going on the part of the hearer, or his request to be allowed to go. With 11b this entailment doesn't (or at least doesn't necessarily) hold: the speaker confronted with a set of possible courses of action selects one (not going) as the proposition of his command. I would infer from this that forbidding represents modality negation, while a negative command such as 11b represent proposition negation (cp. Lyons 1977, p. 774). It is, however, also arguable that negative imperatives like: Don't go are ambiguous between a prohibition like 11a and a command not to do something like 11b. Conceivably intonation dis-
ambiguates: nuclear stress on don't for modality negation; nuclear stress on go for propositional negation.

11.2.3 I turn now to the syntax and semantics of hortative expressions like: Let's go. The form let's can be distinguished from the full verb let in expressions like: Let us go meaning 'Allow/permit us to go' or 'Release us' by means of their co-occurrence with certain interrogative tags:

\[
\begin{align*}
11.12. & \quad \{ & \text{Let's go, shall we?} \\
& & * \text{Let's go, will you?} \\
& & * \text{Let us go, shall we? (\# 'release us')} \\
& & \text{Let us go, will you? (\equiv 'release us')} \\
\}\n\end{align*}
\]

The hortative paradigms for English and German are given below. English has basically only one construction type with let's; German has laß uns and the subjunctive form V-en wir.

\[
\begin{align*}
11.13. & \quad \{ & \text{Let's go!} \\
& & \text{Do let's go!} \\
& & \text{Let's not go!} \\
& & \text{Don't let's go!} \\
& & \text{Please let's go!} \\
& & \text{Please don't let's go!} \\
& & \text{Please let's not go!} \\
\}\n\end{align*}
\]

\[
\begin{align*}
11.14. & \quad \{ & \text{Gehen wir!} \\
& & \text{Laß uns gehen!} \\
& & \text{Gehen wir bitte!} \\
& & \text{Laß uns bitte gehen!} \\
& & \text{Bitte laß uns gehen!} \\
& & * \text{Bitte gehen wir!} \\
& & \text{Gehen wir doch!} \\
& & \text{Laß uns doch gehen!} \\
& & ? \text{Gehen wir nicht!} \\
& & \text{Laß uns nicht gehen!} \\
& & ? \text{Gehen wir doch nicht!} \\
& & \text{Laß uns doch nicht gehen!} \\
& & \text{Gehen wir bitte nicht!} \\
& & \text{Laß uns bitte nicht gehen!} \\
& & \text{Laß uns bitte nicht gehen!} \\
\}\n\end{align*}
\]

The output specification for the English construction is fairly straightforward. If utterances like:

- 430 -
11.15a. Do let's not go.
   b. Don't let's not go.

are acceptable, and assuming as for imperatives that do
realizes Neg - Neg, we may specify:

(please) (Neg (Neg) let's (Neg) V (, please)
Constraint: *please ... please

And for German we would have:

\[
\begin{align*}
\{ \text{V-en wir} & \quad \text{(bitte) laß uns} \} \\
\{ \text{(doch (bitte)) (doch (nicht))} & \quad \text{\{ \emptyset \}} \\
\text{Constraint: *bitte ... bitte} & \quad \text{*doch ... doch}
\end{align*}
\]

There is a pragmatic, if not a semantic, distinction be¬
tween the two German construction types: \text{laß uns ... V-en}
and \text{V-en wir}. The former expresses a proposal with which
the addressee may fall in or not, basically his agreement
is sought. With the latter, however, his agreement is tak¬
en for granted; it is used rather as a reminder of an al¬
ready accepted proposal. \text{laß uns gehen} would be more
appropriate in a plan making situation; \text{gehen wir}, however,
once the plans have been made and it's just a matter of
putting them into effect.

There is also a distinction, at least potentially, between:
\text{Let's not go} and \text{Don't let's go}, namely that the former is
a proposal not to do something, whereas the latter, in
addition to this (for some dialects), may be a counter¬
proposal, i.e., also appropriate where a proposal has al¬
ready been entertained (and implicitly agreed upon) and is
now to be gone back on. This would suggest that the form
\text{Don't let's go} may stand for modality or proposition neg¬
ation, while \text{Let's not go} stands for proposition negation.
Further aspects of the analysis of the \text{let's} construction
will be discussed later.
11.2.4 In English there is a further imperative-like construction with *let*. Typically it appears with III participants. There is apparently no parallel construction in German (122). Examples of it are:

11.16a. Let X be a circle.
 b. Let it not be thought that I am insensible to your feelings.
 c. Let it not be said that she is dishonest.
 d. Let it be clear right from the start that I am corruptible.
 e. Let Kennedy help.
 f. Let him

   \begin{align*}
   \text{die.} \\
   \text{rot.} \\
   \text{fume.} \\
   \text{wait.}
   \end{align*}

In some of the above cases there is ambiguity with an 'allowance' sense of *let*. This ambiguity is scarcely conceivable in those cases where the participant is unwilling to enact or incapable of enacting what is expressed in the complement construction.

Equivalent expressions in German usually involve the subjunctive:

11.17a. X sei ein Kreis.
 b. Gegeben sei ein Kreis X.
 c. Man meine nicht, daß ich sein Vorhaben unterstütze.
 d. Es sage uns niemand, unser Staat sei keine Demokratie.
 e. Er sterbe!
 f. Man nehme 6 Eier ...

The last example differs pragmatically from English: Take 6 eggs ... which is, of course, imperative.

The *let*-construction in English and the German subjunctive are typically used to express demands of third persons. (cp. my comments on the *may*-constructions in § 11.2.5). It is difficult to find cases where the participant is other than III.
11.17a. ? Let me be rich!
   b. Let me see, oh Lord!
   c. * Let you help!

The *let me* forms are interpretable rather as imperatives addressed to God or some omnipotent force. (It is, of course, arguable that this applies to some of my other examples especially those with a more archaic flavour. But I think this interpretation is not the only one in the case of more everyday uses of *let* such as: *Let her peel the potatoes!* *Let Johnny do some work for a change!*)

Both English and German have expressions with modal verbs such as *be to, shall* and *sollen* which come near to the *let*-constructions in meaning.

11.18a. He shall die!
   b. It shall not be said that I lied.
   c. They shall be remembered.
   d. They shall not pass.

11.19a. Er soll (doch) zahlen!
   b. Es soll nicht gesagt werden, daß ich sie betrogen habe!

But these expressions are not strong paraphrases of the *let*-expressions, i.e. they are not equivalent. We may distinguish them by saying that *let*-constructions demand while *shall* and *sollen*, etc. determine. Unlike the *let*-construction, *shall*, *sollen*, etc. can occur with participants other than III without a change in function:

11.20a. You shall die!
   b. You shall not pass!
   c. I shall be heard!
   d. I shall be rich!

In view of the fact that expressions with *shall*, etc. like expressions with *will*, do not direct how the world is to be, as imperatives and *let*-constructions do, I suggest they require a distinct analysis from that of the *let*-
construction. They are, however, it should be noted, 'performative'. Since, as we have seen, the let's-construction, the imperative and the let-construction specialize with respect to participants (I, II and III respectively), it seems reasonable to propose an analysis which unites them illocutionarily but distinguishes them propositionally. Thus:

<table>
<thead>
<tr>
<th>Ill</th>
<th>Mod</th>
<th>Prop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(we go)</td>
<td>i.e. let's go!</td>
</tr>
<tr>
<td>!</td>
<td>(non-fact) (you go)</td>
<td>i.e. go!</td>
</tr>
<tr>
<td></td>
<td>(he/she/it/they go)</td>
<td>i.e. let him go!</td>
</tr>
</tbody>
</table>

(cp. Lyons 1977)

The pragmatic differences between the three kinds of expression, it seems to me, should be treated as reflexes of the nature of the participants involved. It should be recalled that the paradigm of deontically interpretable modals (§ 7.2) was also considerably affected by the nature of the participants. This parallel is, I submit, no accident.

Such an analysis as the above is not incompatible with the claims of traditional grammar (cp. § 4.1.3) that there is a complete imperative paradigm for all persons except first person singular.

11.2.5 In addition to the let-construction, we find a somewhat similar construction with may.

11.21a. May they be deliriously happy! (123)

b. May he choke on his own words!

These utterances differ, however, in one important respect from let-expressions: they do not demand, but express a fervent hope or wish. There is thus a distinction with
regard to the speaker's authority and the reality of his control over events. There are syntactic differences between the *may*-construction and the *let*-construction. Firstly, the *may*-construction allows a variety of participants:

11.22 \[
\begin{align*}
\text{May } & \{ \text{?I we you} \} \text{ be happy!}
\end{align*}
\]

Secondly, it allows a perfect infinitive complement.

11.23a. May Caesar have conquered!
   b. * Let Caesar have conquered!

11.24a. May Kennedy have won!
   b. * Let Kennedy have won!

This latter fact may be compared with the pattern in imperatives and deontic *will* expressions respectively.

11.25a. * Have conquered Gibraltar (by tea time)!
   b. Have Gibraltar conquered (by tea-time)!

11.26a. You will have conquered Gibraltar by tea-time!
   b. You will have Gibraltar conquered by tea-time!

These two facts suggest (independent of the pragmatic difference noted above) a different analysis from that of the *let*-construction for *may*-constructions. My proposal is that there is a modality specification involving futurity, since this would account for the non-reality of hoping.

There is a further set of constructions which involve not non-reality, but unreality.

11.27 Would that he \{ understood. \\
                      \begin{align*}
                      \text{would understand.}
                      \text{had understood.}
                      \end{align*}
\]

11.28a. Would he but understand.
   b. Had he but understood.

These may be compared with German:
11.29a. Sähe er das doch ein!
b. Würde er das doch einsehen!
c. Hätte er das doch eingesehen!

11.30a. Möchte er das doch einsehen!
b. Wollte er das doch einsehen!

There are equivalents to be found in truncated conditional sentences:

11.27'. If only he \{ understood. \\

woud understand. \\

had understood. \\

11.29'. Wenn er das nur \{ einsähe. \\
einsehen würde. \\
eingesehen hätte.

Like the may-construction the would that-construction allows all participants.

11.31. Would that \{ I/we \\
you \\
he/she/it/they \} were happy.

Another construction type which is very close semantically, but which I think is pragmatically distinct, involves an expression of wishing.

11.32. I wish he \{ understood. \\

would understand. \\

had understood. \\

11.33. Ich wünschte er \{ sähe das ein. \\
würde das einsehen. \\
hatte das eingesehen.

These I believe to be descriptive utterances not 'world changing' utterances.

The modality specification in the would that-construction involves irrealis, a modality for which I argue in § 13.3.2.

11.2.6 Finally a word about the time reference (t_j) of the constructions I have discussed in § 11.2. We can discover three patterns: i) that of imperatives and the let-construction; ii) that of deontic will and shall and the

- 436 -
may-construction; iii) that of the would that-construction.

The fact that imperatives and the let-construction involve future realization of the propositional content is not evidence for a necessary future time reference. The enacting of the command may occur immediately after its uttering i.e. effectively 'now', or at a later time. Compare:

11.34a. Come here this minute!
   b. Come here tomorrow!

It is therefore plausible that time reference \( t_j \) should allow a choice between fut and pres, the latter being understood as the neutral term, i.e. not significantly later than the moment of speaking, though obviously, since it would be empirically impossible, not coincident with the moment of speaking. The choice between pres and fut \( t_j \) is not grammaticalized in the verb; only adverbs can distinguish.

In the case of deontic will and shall and the may-construction, the time reference \( t_j \) may also be past, even past with respect to the moment of speaking, as in:

11.35. May Caesar have conquered this morning before I was up.

We can, I think, potentially have pres, fut or past \( t_j \), of which the distinction between past and pres/fut is grammaticalized in the verb phrase; adverbs can distinguish pres from fut.

In the case of the would that-construction, there is even grammaticalization of pres, fut, past time references by means of the past subjunctive, the conditional, and the pluperfect subjunctive respectively.
§ 11.3 Questions and Interrogative Tags

11.3.0 In this section I shall examine first the nature of modality in various types of question, and then the occurrence of modal verbs in questions and the relationship thereof to declarative utterances. I exclude from the discussion echo-questions of the type noted by Jespersen (1924): Is that true?! (cp. Ob das wahr ist?! ) said as a retort to a question, roughly: 'what do you mean, is that true?'; and exclamatory expressions like: Boy, is syntax easy! cp. Jespersen (1924) N. McCawley (1973).

11.3.1 In § 5.2.4 in my comments on Householder's analysis of questions I suggested an analysis of questions involving a disjunction of positive and negative propositions i.e. ?(p V ~p). Here I shall attempt to justify and refine this analysis. One of the principal objections that might be made is that the specification ?(p V ~p) suggests a surface form as in: Are you going or aren't you (going)? which is to be distinguished from: Are you going? when the latter is interpreted as an open-question. The objection is only valid if it can be shown that: Are you going or aren't you? may have an open interpretation. The distinction between open and non-open interpretations may be defined thus:

An open question is one in which the speaker (= questioner) does not make any supposition about the truth or falsity of the questioned proposition (p).

A non-open question is one in which the speaker (=questioner) makes a supposition about the truth or falsity of (some part of) the questioned proposition (p).
and exemplified as follows. If someone receives an invitation to a party and I want simply to know his intentions about accepting the invitation, I would normally ask: Are you going to go? or: Will you go?. Perhaps if I know that he has already made up his mind (not, however, that he is going), I should ask: Are you going?. This is still an open-question because I do not suppose that the questionee is going to go. If, however, I have already been informed by him, or someone else, that he is going to the party, and I see him just before the party heading in the opposite direction, then I should probably ask: Aren't you going (then)? In other words, the non-open interpretation of questions is dependent on some prior knowledge or assumption on the part of the speaker.

The distinction between open and non-open interpretations is often exemplified with a positive and negative questions respectively. Although it is scarcely conceivable that a negative question could have an open interpretation (I at least cannot think of one), positive questions are apparently susceptible to both interpretations.

To return to the case of: Are you going or aren't you?. I would claim that this utterance is, like a negative question, only interpretable as a non-open question. It would be said, usually in exasperation, when the speaker has assumed that the addressee will go (the speaker may even have demanded it himself) and the latter now shows signs of vacillation. An appropriate gloss might be: 'Is it the case that you are going or is it the case that you are not going?'
Some evidence in favour of: \( \ldots \)\( p \lor \neg p \) as an analysis of open questions is the existence in Mandarin reported by Lieberman 1967 of yes-no questions of the form: 'John ate didn't eat his soup?' Further evidence may be seen in the frequent occurrence of or not in the reporting of open questions: \( \text{I asked them whether they were going or not or: I asked them whether or not they were going} \) (cp. § 12.1.3).

Finally I make appeal to the function of yes-no questions. If a question is said to invite or request the answers yes or no, then it is surely inviting the addressee to state whether \( p \) or \( \neg p \) is the case. (Yes and no, of course, have other functions besides those of stating 'it is so' and 'it is not so' respectively; they may also indicate 'I agree/I'm willing' or 'I disagree/I'm not willing' respectively.) Thus it seems to me that \( p \) and \( \neg p \) are implicit within the question itself.\(^{(124)}\)

There is a complementary argument, namely that \( \ ? \ p \) is not an adequate specification for (open) yes-no questions. Before this argument can be stated, however, we need to look at the nature of the modality involved.

To discover the nature of the Mod, we may take the following minimal pair:

\[11.36a. \text{Are you going anywhere?} \]
\[b. \text{Are you going somewhere?} \]

While 36a is susceptible to an open-interpretation, 36b can only be non-open (assuming neutral intonation in both cases - the interpretations possible are, of course, affected by contrastively stressing are, you or going).
36a might, for example, be a question posed as a reaction to the statement: Tomorrow's a holiday/my day off, etc. It does not ask where the addressee is going, but whether he is going anywhere or not, i.e. ' (you go to some unspecified place) or (you not go to some unspecified place) '.

36b, on the other hand, may pragmatically presuppose the going and ask if there is a particular place to be gone to; or it may ask if going to a particular place is the reason for not doing something else. Situations corresponding to these could be: i) I see a suitcase or other evidence of departure, and ask: Are you going somewhere;  ii) Someone says, for example: I can't see you tomorrow, and I reply (searching for an explanation): (Why), are you going somewhere? (There are obviously other situations in which the question is appropriate, and there may be other interpretations too).

In order to distinguish these interpretations of 36a and b, we need to propose a distinction in Mod, the implications of which will become clearer further on. (I can think of no good arguments for supposing that the distinction can be handled in terms of Prop.)

In the case of 36a, we are not asking:

11.36a'. Is it \{true \text{ the case} \} that p or that \neg p?

but:

11.36a". Is p or \neg p \{true \text{ the case } \}?

In the case of 36b, we are asking:

11.36b'. Is it \{true \text{ the case} \} that p

The distinction between some- and any-forms is often
associated with assertivity, i.e. some- is assertive; any- non-assertive (cp. the discussion on conditional clauses in § 13). The terms 'assertive' and 'non-assertive' are not exactly transparent with regard to questions.

We may perhaps more neatly epitomize the distinction with terms like: information-seeking (non-assertive) and confirmation-seeking (assertive). The former will be symbolized ; the latter . under Mod. 36a thus receives the specification: ? ; (you go to [unspecified] place) v (you not go to [unspecified] place)

36b on the first interpretation is:

\[ ? \cdot (\text{Foc} \quad ([\text{unspecified}] \text{ place (you go to)}) \]

On the second it is:

\[ ? \cdot (\text{you go to [unspecified] place}) \]

Notice that we can now distinguish notionally:

11.37a. Are you going?
   b. Are you going or aren't you?

as:

11.37a'. ? ; (p v \neg p)
   b'. ? ; (p v \neg p)

If we have specifications of the form:

11.38a. ? . (p)
   b. ? . (p v \neg p)

it is natural to ask whether, in contrast to:

\[ ? \cdot (p v \neg p) \]

we also have:

\[ ? \cdot (p) \]

The only candidate for this that I can think of is the open interpretation of: he's going? It seems that there is a distinction between:
11.39a. He's going?
   b. Is he going?

39a can, I believe, have an open interpretation (cp. He's going? (- I thought he wasn't) with high rising intonation, which is non-open). The difference between 39a and b can perhaps be illustrated as follows:

11.40. A: I saw Cyril this morning. He said he's finally made a decision about the job in Tasmania?
   B: He's going?
   A: Yes/No, he's not.

Here B's question, I believe, expects the answer yes; whereas 39b in this situation would expect neither yes nor no. Interestingly, I think there is also an open interpretation of:

11.41. He's not going?

unlike: Isn't he going? Here, of course, ~p is expected.

? & ( ~ p)

Expectation of p or ~p is, of course, consistent with the actual occurrence of a different reply.

To return to the question of whether yes-no questions such as 39b can be specified: ? & p rather than: ? & (p V ~ p), it must be shown that either 39a and b are equivalent (and hence have the same specification) or that 39a cannot have the specification: ? & p if a and b are not equivalent (as I maintain). Before turning to wh-questions, let me summarize the pattern of interpretations in the question forms so far considered.
11.3.2 The analysis of *wh*-questions is more straightforward than that of *yes-no* questions. I have no hesitation in assigning to them the same illocutionary mark: ? as *yes-no* questions. There are two aspects of their nature that should be discussed: i) their modality ii) the *wh*-item. It might seem in view of the foregoing arguments, that *wh*-questions are non-open, since they clearly make a supposition about part of the proposition (p). We would suppose then that their specification would be of the following order:

? • (p)

This is, I believe, incorrect. The supposition does not involve what is being asked about. If we ask:

11.42. Who was at the party?

we presuppose that there was a party\(^{(125)}\) and suppose that there were people at it. But what we are doing in putting the question is seeking information about the identity of the people at the party. Thus the modality involved can be specified: , which has the *wh*-element, not the proposition (x be at the party), in its scope. This leads us on to the second question, the nature of the *wh*-item.

In § 1, I suggested that a grammar must have a means for specifying topic and focus – symbolized Top and Foc – and
I distinguished them thus:

Topic is the psychological subject of the sentence.

Focus refers to the new information in a sentence. Thus the grammatical subject of a sentence when it is in initial position, an adverb, an identifying expression:

it is x who ... and an existential expression: there's x ...

... may all be classified as topics, as in:

11.43a. John opened the door.
   b. Yesterday I went swimming.
   c. It's John you should see.
   d. There's a wasp in the marmalade.

Focus, however, is typically responsible for contrastive and non-neutral stressing.

11.44a. John opened the door.
   b. Yesterday I went swimming. etc.

Focus and topic may coincide as in:

11.45. John opened the door. (i.e. not Mary) etc.

With wh-questions it is the wh-item that is the topic, and I therefore suggest that a more adequate specification of them should be:

\[
\text{ILL} \quad \text{Mod} \quad \text{Top} \quad \text{?} \quad \text{Top} \quad \text{?} \quad (\text{wh} \quad -(p'))
\]

11.3.3 I turn now to interrogative tags (or 'tag-questions'). We can make an initial division into those tagged onto statements (discussed here) and those tagged onto imperatives and let's-constructions (11.4.1).

In addition to the basic pattern:

- positive statement + negative tag
- negative statement + positive tag

We have the possibility of both rising and falling intonation on the tag, which gives the four possibilities as in:
11.46a. You aren't going, are you?
b. You aren't going, aren't you.
c. You're going, aren't you?
d. You're going, aren't you.

The interpretations of 46a and c as against 46b and d are as follows.

- intonation: 'I was under the impression that p but now I have reason to ask if it is so.'
- intonation: 'I believe that p and invite you to confirm this.'(126)

This ignores the possibility of focusing by means of stress on various items, for example: You are going, aren't you? It also ignores utterances where there is no polar contrast between the form of statement and the form of the tag; as in:

11.47a. (So) you aren't going, aren't you.
b. (So) you're going, are you.
c. He said that, did he.
d. I'm an idiot, am I?

None of these, it seems, functions primarily as a question. 47a and b usually precede comments like: Well, we'll see about that! 47d signals a menacing reaction, which 47c can too, as well as indicating surprise (cp. Well, well - I never thought that likely).

Of 46a - d, only 46a and c can be interpreted as questions requiring an informative response. They may be paraphrased by expressions with surely:

11.46a'. Surely you're not going (, are you)?
c'. Surely you're going (, aren't you)?

The form of 46a and c might lead us to posit an analysis:

11.46a". (• : ~ p) \wedgesum (? : p)
c". (• : p) \wedgesum (? : ~ p)

i.e. 46a" 'I say it is the case that you are not going
and I ask if it is the case that you are going'; and to 46c", I say it is the case that you are going and I ask if it is not the case that you are going'. But there are problems with this formulation. The first difficulty is that although we may find (? · p) and (? ∼· p) intuitively correct as specifications of the tags of 46a and c respectively, and even if there seems to be no obvious objection to the conjunction (Λ), it is difficult to justify the illocutionary mark and modality of the first term of the conjunction. You're not going and You're going in 46a and c are not claims or statements of fact; at most they are statements of belief. A second difficulty is the specification of 46a' and c', which need only have a single clause. If 46a and 46a', and 46c and 46c', are in a paraphrase relation, their specifications should be mutually translatable. 46a and c appear to be non-open questions of the sort:

\begin{align*}
11.46ai'. ? & : \sim p \\
\text{ci}'. ? & : p
\end{align*}

Under this kind of analysis surely becomes a surface marker of a non-open question. If this is correct, and it is certainly the most promising analysis of surely (127) I know of, it is still difficult to see how, for example, 46a" could ever be translated into 46ai' since there is no motivation for ? cancelling out or substituting . . The first difficulty I cannot solve. There is, however, a very neat solution to the second problem which also happens to circumvent the first problem. It is that 46a and c are not in fact the realization of
a 'two-clause' structure, but a particular translation of a 'one clause' structure involving Top.

Let us assume that both 46c and c' are derivable from:

11.46ci". \( ? \leadsto p \)

The translation of this into:

11.46ci"'. \( \text{Top} \) \( p \) (\( ? \leadsto p \))

is effected by a rule of topicalization which takes an item out of \( \Sigma \), in this case the proposition, and puts it in front position leaving a copy of itself in \( \Sigma \) (alternatively, we could say it copies \( p \) into an empty topic position). The effect is to give us a proposition without an independent illocutionary mark or modality. The plausibility of this solution is increased by the fact that we get exactly the right assignment of negation, i.e. positive + negative. In the complementary case, the common specification of 46a and a' would be:

11.46ai". \( ? \leadsto \sim p \)

which is then translated into:

11.46ai"'. \( \text{Top} \) \( \sim p \) (\( ? \leadsto \sim p \))

i.e. propositional negation goes with \( p \) into Top, leaving a copy of \( p \) and its negation). This, however, is not quite straightforward, and I shall attempt to illuminate the matter later.

Compare the specification 46ci" with my initial proposal 46c": the Mod of 46ci" is the negation of the Mod of 46c". This is less disturbing than it seems given the following translation rule:

11.48. \( ? \leadsto p \equiv ? \leadsto p \)
which says that asking if something isn't the case is logically, though not pragmatically (see below), equivalent to asking if it is the case. When a prosecuting attorney asks: Is it not the case, Mrs Murdoch, that you went into that room with every intention of murdering your husband? he may expect (or want) the answer: yes. When a defending attorney asks: Is it the case, Mrs Murdoch, that you went into that room with every intention of murdering your husband? he may expect the answer: no. But the questions could be switched around without any cognitive change in meaning: yes in answer to the first question means the same as it does in answer to the second question, i.e. 'I did go in there with that intention'. The only factor determining the presence or absence of (\(\sim\)) under Mod in this case, I suggest, is the answer expected or to be elicited: negative usually expects agreement (a positive answer), positive often expects disagreement (a negative answer). This might be captured using Chomsky's \(\alpha\)-convention (Chomsky 1965) approximately:

11.49. \(\Sigma: (? \alpha \cdot p)\) when \(\Sigma\) anticipates \(\Sigma': (\sim \alpha \cdot p)\)

This principle would support 46ci" as the specification for 46c'.

Let me, to complete the picture with regard to negation in Mod, establish the remaining equivalences (or rather non-equivalences):

11.50. \(? \sim \cdot p \not\equiv \sim p\)

This says that asking if it isn't the case that x goes is not equivalent to asking if it is the case that x doesn't go. Under certain conditions the corresponding case with
illocutionary mark seems to hold:

11.51. $\sim p \Rightarrow \sim p$

This says that saying it is not the case that $x$ goes is equivalent to saying it is the case that $x$ doesn’t go. This is, however, a one way implication; the reverse would not hold.

It follows from 48 that 48' and not 48" holds:

11.48'. $\sim \sim p \equiv ? \sim p$
11.48". $\sim \sim p \equiv ? p$

It might seem that logically 48" should hold. But consider the case where a defending attorney asks: Is it not the case, Mrs Murdoch, that you didn’t go into that room with every intention of murdering your husband? If Mrs Murdoch is watching what she admits to, she would I think, be puzzled for a moment. The question, however, is not a double negation; it is not equivalent to: Is it the case, Mrs. Murdoch, that you went into that room with every intention of murdering your husband? It would be quite safe for her to say: yes in answer to it, because this would mean: yes, I didn’t (so enter).

I shall now return to the difficulty involved in 46ai"'. It might seem that the specification of a positive tag should be:

11.46ai"'. $\sim p (\sim \sim p)$

The modality is correct in view of restriction 48; and: $\sim \sim p$ could not become: $\sim \sim p$ anyway. In order to avoid a topicalization rule which moves negation plus $p$ leaving only $p$ minus its negation behind as in 46ai"", which would be an arbitrary rule, we have to have the
specification as in 46ai'''. This turns out to be correct, if we ignore the fact that superficially 46a seems to be an ellipsis of:

11.46. You're not going, are you going?
The rule of deletion could, in fact, be better formulated if all the recurring items could be deleted:

\[
\text{You're not going, are you (not going)?} \quad \Rightarrow \quad \text{You're not going, are you?}
\]

Moreover, the function of the tag, as noted earlier, is not of an open question:

? \cdot \text{(you are not going)} \quad \lor \quad \text{(you are going) V (you are not going)}

but of a non-open question:

? \cdot \text{(you are not going)}

i.e. 'is p (here: not-p) the case/so'. It seems to be the case in English (and a number of other languages) that the same form can occur with open and non-open interpretations. Are you going?, for example - intonation may distinguish the two interpretations. Thus there is no reason why the tag are you? should not be read: is not-p so?, which is the specification given in 46ai'''. German: nicht wahr? and French: n'est-ce pas? are more transparent expressions of this specification. Assuming that 46a and c have been satisfactorily analyzed, we may speculate as to the specification of 46b and d, which don't appear to be questions, at least in the way 46a and c are. Consider first two interpretations of 46b and d respectively - there are presumably others. These, however, seem to be the most frequent.
11.46b'. 'As I feared, you're not going.'
   b". 'Be sensible and don't go.'

11.46d'. 'As I feared, you're going.'
   d". 'Be sensible and go.'

As I noted earlier, 46b and d, as can be deduced from the above interpretations, do not primarily seek information. Yet they do demand some kind of response, confirmation in the case of 46b' and d', acceptance or refusal in the case of 46b" and d". In this respect 46b and d differ from statements, which may, of course, be responded to but which do not require a response; and they differ from commands, too, in that commands require an action response not a verbal response. Since we cannot identify 46b and d with either statements or commands, and since requiring a verbal response is a feature generally of questions, we may ask ourselves how the interrogative specification can be modified to take account such utterances.

The kind of analysis proposed by Sadock (1970, 1971) for requests, namely: ! p Λ ?(∼·) p, i.e. a 'two-clause' structure, can be rejected for the same reasons that we rejected it as an analysis of 46a and b: we do not have a conjunction of illocutions; rather we have an illocutionary potential and an illocutionary force (cp. § 5.1.4). What has the form of a question functions as a declarative (46b and d') or as a kind of imperative (46b" and d").

There seem to be three approaches to this problem: i) treating the illocutionary force as a matter of pragmatics, which has no place in the specification of the utterance;
ii) modifying the illocutionary mark in the specification of the utterance; iii) modifying some other part of the specification, presumably Mod, since the propositional content does not appear to be different from 46a and c respectively. Since the whole tenor of this dissertation has been that pragmatic factors like illocutionary force, seeing that they clearly belong to a native speaker's competence if one's investigation is sensitive enough (and above all accepts that intonation and stressing are not just performance phenomena), should be included in a linguistic description, I shall not consider (i) to be realistic. We can also rule out (iii), I believe, because to modify the Mod specification would mean, according to the definition in § 7.4.2, that the speaker views the proposition in a different way, which if we compare 46a and b does not seem to be the case. Given that (ii) is the correct approach, I shall make a proposal as to how it may be effected.

I suggest that we introduce a principle whereby one illocutionary mark may override another. This has the effect of saying that a Σ is 'quoted' under an illocutionary mark, while itself containing an illocutionary mark. The overriding illocutionary mark gives the illocutionary force, the overridden illocutionary mark the illocutionary potential. We may illustrate this with the pair:

11.52a. You are going.
   b. You are going!

where 52a is a statement and 52b is taken, despite its form, as a command. Rather than analyze 52b as:
11.52b'. ! • (you go)
which would be indistinguishable illocutionarily from the
specification of: Go!, we would analyze it as:

11.52b". ! [• • (you go)] (128)

Similarly, 46b' and b" are analyzed:

11.46bi'. • [Top ~p (? • ~p)]
bi". ! [Top ~p (? • ~p)]

§ 11.4 Requests, Hortatives and Interrogative Tags

11.4.0 In § 11.4.1 I discuss the nature of requests, in
particular those formed from an imperative construction
and an interrogative tag. In § 11.4.2 I discuss let's
and shall as hortatives.

11.4.1 Stockwell et al. 1972 have drawn attention to the
fact that certain requests behave in many respects like
yes-no questions. This conflicts with the observations in
Kiparsky 1963 and Katz/Postal 1964, which pointed to a
very close similarity between such requests and imperat-
ives. The only convincing evidence (129) for a difference
between requests such as 53d involves the use of some or
any and negation. Compare:

11.53a. Will he give you any money?    (questions)
    b. Will he give you some money?
    c. * Will you give me any money?    (requests)
    d. Will you give me some money?

and:

11.54a. Will John not be going to town?    (questions)
    b. Won't John be going to town?
    c. Will you please not jump in before I get out?
    d. Won't you please jump in before I get out?   (requests)

In questions both some and any may occur; in requests
only some, which as we noted before is associated with 'assertivity', can occur (cp. 53a - d). In 54a and b the position of not does not affect cognitive meaning - there may, of course, be a difference in style. In the case of requests a change in the position of not corresponds to a marked change in meaning: 54c \neq d. Such evidence does not necessarily show that requests are not a type of question: it does, however, indicate that we need to take a broader view of what constitutes a question. In order to understand a little better what is involved in requests, I shall look at their syntax in a little more detail. There seem to me to be three essential points. First, there is no cognitive meaning difference involved in the alternation between negative and positive. Both 55a and b are requests to do the same thing:

11.55a. Will you come in?  
       b. Won't you come in?

Second, two modals are involved: will and can and their oblique forms:

\[
\begin{align*}
&\text{Will you come in?} \\
&\text{Can you come in?} \\
&\text{Would you come in?} \\
&\text{Could you come in?} \\
&\text{Won't you come in?} \\
&\text{Can't you come in?} \\
&\text{* Wouldn't you come in?} \\
&\text{* Couldn't you come in?}
\end{align*}
\]

Third, there is a set of tagged imperatives which seem to be at least weak paraphrases of the set of requests in 56:
Ignoring the fact that wouldn't and couldn't are subject to restriction, which may or may not be significant, the fact that there is no positive-negative contrast in, for example, will you \( \sim \) won't you as tags suggests that their analysis must be very different from the analysis of the tag questions in § 11.3. An even more compelling reason seems to be the existence of utterances like:

11.57a. You will open the door, won't you?
   b. You won't open the door, will you?

which contrast with:

11.59a. Open the door, won't you?
   b. Open the door, will you?

and are by no means equivalent. For these I would suggest an analysis:

11.58a'. ? \( \sim \)fut. \( p \)
   b'. ? fut. \( \sim p \)

giving the topicalized and overridden specifications:

11.58a". ! \( [\text{fut } p (\sim \text{fut. } \sim p)] \)
   b". ! \( [\text{fut } \sim p (\text{fut. } \sim p)] \)

It is, however, arguable that assignment of future tense \( (t_1) \) is not sufficient to account for will (but cp. § 7.3.2). Be this as it may, the specification of the requests in 56 and 57 will require more than just future in the Mod, since even excluding the oblique forms we have a choice between will and can.

Let me first state what the paradigms and discussion so
far suggest about the analysis of requests. There is, first a choice between positive and negative in Mod. The choice is probably conditioned pragmatically, won't having a far less authoritative effect than will, though can't is inversely far less polite than can. Second, the presence of some suggests - rather than i in Mod. And third, the illocutionary potential of requests like 55a is that of a question, while the illocutionary force may be that of a command. We may take as a starting point a specification of the form:

\[
\text{Ill} \quad \text{Mod} \quad \text{Prop}
\]

\[
? \\
\{~.\} \\
p
\]

It is arguable whether requests like 55a and b require the illocutionary mark ! to override ?. Since they are not confusable with open questions about the future like: Will you be rich? with the Mod specification i, it might be sufficient to leave the specification as it is. On the other hand, it seems questionable whether an analysis as non-open future questions is adequate. After all, the utterance of 55a, for example, does not require a verbal response; it is interpretable as an invitation to do something. Moreover, the addition of please, which is undoubtedly possible with requests, seems impossible with the same interpretation with questions.

11.60a. What's the time, please? (questions)
   b. ?Please, is she coming?
   c. Will you come in please. (requests)
   d. Please would you tell me the time.

With questions please is glossable 'please tell me'; with requests it tones down the force of invitation \(^{(130)}\).
I have assumed in the above that future modality (future $t_1$) is involved. The only semantic argument for this is that the speaker is not concerned with the actual world but with a possible world, a possible world which he is trying to have realized. There is, of course, the syntactic argument that will is present in the utterance and the associated formal argument that without a future specification the analysis becomes arbitrary.

I propose that 55a and b have the following specifications.

11.55a'. ! [? fut· p]
11.55b'. ! [? ~fut· p]

The specification of tagged forms like 59a and b raises a further question: Do we need a one-clause or a two-clause structure? The question can be made more explicit: Does the imperative construction function independently of the tag, or must the two be taken together? I think the latter is correct. There is, I think, a difference in illocutionary force between an independent imperative and a request containing an imperative; compare:

11.61a. Come in!
11.61b. Come in, won't you?

This leads me to specify 59a and b as:

11.59a'. ? fut· [Top p (! · p)]
11.59b'. ? ~fut· [Top p (! · p)]

Although I find this not wholly satisfactory, one part of the configuration must remain, namely the specification \{~\} in the direct scope of ?, since the behaviour of negation in statements and commands is markedly distinct - we do not have the positive-negative neutralization.
There remains now only to discuss the choice between will and can. It will be recalled that will and can have been associated with each other in other constructions, cp. § 9.3.1, but also that can has been analyzed as present possibility (pres $\forall$) when it is interpretable epistemically. Just as with will there is a difficulty in deciding whether can is epistemically or dispositionally interpretable. I have argued against the voluntative interpretation of will and preferred to handle the use of will in requests as future under Mod. With can, too, we can question whether: Can you come in a minute? really asks whether the addressee is able to come in or whether it asks if it is possible. I think the latter. We may view the occurrence of can, perhaps, in terms of a principle that predicted worlds (i.e. future $t_1$) are included in the set of all possible worlds, which are in a sense 'actual'. Can, we have seen, expresses just this. Comparison of will and can in requests shows can to be more 'democratic' and less insistent than will, which would fit in with the inclusion relationship suggested above.

11.4.2 In § 11.2.4 I discussed hortatives like: Let's go! etc. I shall discuss here two illocutionarily rather similar constructions, examples of which are:

11.62a. Shall we go!
   b. Let's go, shall we?

62b appears to contain a tag, which may be seen as corresponding to the will you? tag on imperatives. There are differences, however. There is a syntactic difference in that a let's-construction does not allow a negative tag:
11.63a. Let's dance, shall we?
   b. *Let's dance, shan't we?

This is paralleled by the fact that negation is also impossible with constructions of type 62a.

11.64a. Shall we cake-walk?
   b. ?*Shan't we cake-walk?

64b could, of course, be interpreted as a (non-open) question.

There is also a semantic difference. Whereas in the case of: Come in, will you? it is, as I argued not possible to discern two independent illocutions (illocutionary forces) and retain the sense of the complex construction, we have in the case of 62b two distinct illocutions: that of let's, which is equivalent to a non-tagged let's-construction; that of shall we. The former is a world-changing illocution, the latter is a question - it enquires whether the addressee will agree to participate. I conclude, therefore, that a 'two-clause' structure will give us a more adequate analysis (cp. below). Utterances like 62a are, of course, ambiguous between a question and a hortative interpretation, dependent to an extent on whether we is respectively exclusive or inclusive of the addressee. As a question 62a may be specified:

\[ ? \cdot (\beta \text{II} (p')) \]

where \(\beta \text{II}\) is intended to capture the addressee's willingness, which is after all what is elicited. As a hortative, a possible specification would be:

\[ ! [ ? \cdot (\beta \text{II} (p'))] \]

in accordance with the principle of overriding.

For the tagged let's construction I suggest, assuming my
arguments for a 'two-clause' analysis are valid:

\[ [1 \ldots p] \land [? \cdot (\beta II (p'))] \]

Although I have hitherto assumed that the specification for Mod in imperative and let's constructions is \', I have written (\ldots) here to indicate that I reserve my opinion pending further discussion in § 12.2.2.

§ 11.5 Modal Verbs in Questions

11.5.0 I shall examine here the paradigms of various question types with modal expressions. Since the results obtainable from examination of dispositional modals are so meagre, I shall confine myself to epistemic and deontic interpretations.

11.5.1 In evaluating the paradigms I find I can distinguish three kinds of interpretation: open and non-open, as distinguished in § 11.3.1, and what I will call challenge questions, which are distinct from echo-questions and occur in a rather different kind of context. Challenge questions challenge a claim already made and are thus imitative of the form of that claim:

11.65. - It's obvious he's lying.
    - Is it obvious (that he's lying)?

where: Is it obvious? challenges: it is obvious, not necessarily: he's lying. An echo question is generally a \textit{wh}-question construction, cp.:

    - What's he \textit{doing}?/He's doing \textbf{what}?

I shall disregard challenge-question interpretations in the paradigms.

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It will be useful to illustrate how open and non-open interpretations differ with respect to: Is it possible he's at home? When this is used, say, in speculating on the answer to: Where's John?, and where there has been no suggestion that John is at home, we have a case of an open-interpretation. Unlike a challenge question, a non-open question questions the truth of the complement of the modality.

11.5.2 As with the corresponding declaratives, there seems to be no restriction in the tense-form of the complement when the modal expression is an epistemically interpreted analytic construction. But the items subject to an open interpretation seem to be limited to: possible and conceivable.

In 67, n-o stands for non-open and * generally indicates that while there is neither an open nor a non-open interpretation, there may a challenge interpretation. In the case of likely, there may be an open interpretation especially if at all precedes likely.

In view of what we noted with regard to non-open questions in § 11.3.1, it is not surprising that none of the negative items may be interpreted openly. Why probable, improbable
and obvious behave differently from likely, unlikely and clear may be connected with the behaviour of these items discussed in § 8.2.1. And finally I should point out that the fact that possible and conceivable are the only items with clearly open interpretations may be connected with what I suggested in § 7.1.1, namely that possibility appears to be the basic term in the system of epistemic modality.

With synthetic constructions, there are a number of restrictions not to be found in the corresponding declaratives. The following paradigm should be compared with 7.12 in § 7.1.2.

\[
\begin{align*}
?*\text{May he} & \quad \text{Might he} \quad ?n-o \\
\text{Can he} & \quad ?n-o \\
\text{Could he} & \\
\text{Must he} & \\
?*\text{Ought he to} & \\
?*\text{Should he} & \\
\text{Will he} & \\
\text{Would he} & \\
\text{Does he have to} & \quad n-o \\
\text{Does he seem to} & \quad n-o \\
\text{Does he appear to} & \quad n-o \\
\text{Is he bound to} & \quad n-o \\
?*\text{Is he said to} & \\
\text{Need he} & \quad n-o \\
?*\text{Does he need to} & \\
\end{align*}
\]

May, as has frequently been noted (Leech 1969, Palmer 1965, etc.) is usually deontically interpretable, though it may be a challenge question. In the case of need, I think the question-form: does x need to strange with an epistemic interpretation, hence the ?* marking: this may not be true for other speakers. In the case of can, particularly, it strikes me that I would use could, not can, in the situations appropriate to an open-interpretation.
If this is correct, and only the 'conditional' forms are possible with an open interpretation, then it is interesting in the light of the analysis of open-questions given in §11.3.1, where the Mod was claimed to be . Is it possible that can, in questions at least, has to be associated with ?

The exclusion of ought to and should is consistent with their uncertain status as epistemics.

11.5.3 With constructions expressing deontic modality I have envisaged the following contexts for open and non-open interpretations. For open interpretations: Tell me, are you ... to leave the country?, where it is not supposed that the addressee has any intention of doing so; and for non-open interpretations, a question in response to some statement like: I'm going to France.

In contrast to epistemic modality, we find deontic interpretations of analytic modal expressions generally more susceptible to open and non-open interpretations.

\[
\begin{align*}
\text{allowed} & & \text{permitted} & & \text{n-o} \\
\text{required} & & \text{expected} & & \text{?n-o} \\
\text{entitled} & & \text{forced} & & \text{n-o} \\
\text{obliged} & & \text{compelled} & & \text{n-o} \\
\end{align*}
\]

11.69. Are you \{ to leave the country? to learn a language? to be at the meeting? \}

\{ ?*requested \n-o \text{?n-o} \}

The acceptability of be requested and be ordered is not in doubt if they appear in a perfect tense-form: Have you been requested .......
May you
? Might you
Can you
Could you
*Shall you
Should you
11.70. ? *Will you
? *Would you
Must you
Ought you to
? *Are you to
Do you have to
? *Had you better

leave the country?
be at the meeting?
learn a language?
n-o

In this paradigm, which should be compared with 7.34 in § 7.2.2, there are evidently greater restrictions.

Worth noting is the fact that should, ought to, have to and had better are more frequent when negative. And also worth noting is the fact that many of the items allow factive complements when interrogative but not when declarative. Compare:

May you
? *Can you
Should you
Must you
Ought you to
Do you have to
? *Had you better
? *Are you to

be learning French?

11.71a.

b. I
You

The forms marked ? * are either not interpretable deontically or else not with a factive complement.

With declaratives the complements are generally unrealized, and in this there is a parallel with imperatives (cp. § 11.2.2).

11.5.4 Presumably the paradigms of modals in wh-questions
differs from those of modals in yes-no questions because the question types themselves differ. I record here the paradigms of synthetic constructions only in epistemic and deontic interpretations. Since the concepts of openness and non-openness do not apply to wh-questions, no further specification of the interpretation are given; I exclude, however, echo-interpretations and any interpretation with contrastive stress.

11.72a. Why \{ may \\
    might \} visit her tomorrow?
    ? can \\
    ? could \\
    ? must \\
    ?*shall he \\
    should will \\
    would needn't

b. Why \{ may \\
    might \\
    ? can \\
    could \\
    ? must \\
    ?*shall he \\
    should will \\
    would needn't \\
    ?*need
    ?*daren't
    *dare
    ? ought he to \\
    ? does he have to \\
    ? is he supposed to \\
    is he bound to \\
    ?*is he said to \\
    ?*is he to \\
    have gone there?

72a and b are based on epistemic interpretations of the
modal expressions. There seem to be two reasons for the ? judgments and for some of the ?* judgments: i) some items, in particular must, generally only have an iterative interpretation of the complement when it is a simple infinitive; ii) some items like be supposed to, be said to, since they relate to hearsay knowledge, seem to require that the event denoted by the complement be past. Two other points worth noting are that would can only be conditional, while could is ambiguous between a conditional and a non-conditional interpretation (cp. § 9.3.2); and should may also have what I will term a 'subjunctive' interpretation, which is distinct from the interpretation in: They should be there by now. This 'subjunctive' interpretation is similar to should in: I'm surprised he should say that cp. Now, why should he say that (I wonder).

These results are not the same as those to be found in yes-no questions; they are closer, if anything, to those to be found in declarative utterances (cp. § 7.1.2), which should not surprise us in view of the nature of wh-questions: it is the wh-item which is the item to be elicited; there is an entailment or supposition relationship between a wh-question and the proposition it contains. Thus:

Why may he go? → He may go.

So it seems natural that modality in wh-questions should largely reflect the pattern in statements.

It is possible, however, that certain restrictions depend on the nature of the wh-item. I find, for instance, an utterance like: ?What must he have done? harder to inter-
pret than: Why must he have done that?

This last point also applies to the paradigms with deontically interpreted modal expressions, to which I now turn:

\[
\begin{align*}
\text{may} & \quad \text{? might} \\
\text{can} & \quad \text{could} \\
\text{must} & \quad \text{must} \\
\text{? shall} & \quad \text{should} \\
\text{?*will} & \quad \text{he} \\
\text{?*would} & \quad \text{he} \\
\text{needn't} & \quad \text{need} \\
\text{?*need} & \quad \text{daren't} \\
\text{?*dare} & \quad \text{ought he to} \\
\text{?*will} & \quad \text{does he have to} \\
\text{?*would} & \quad \text{is he supposed to} \\
\text{?*is he bound to} & \quad \text{is he to} \\
\text{?*is he said to} \\
\text{?*is he to} \\
\text{? may} & \quad \text{?*might} \\
\text{? can} & \quad \text{? could} \\
\text{must} & \quad \text{must} \\
\text{?*shall} & \quad \text{he} \\
\text{?*should} & \quad \text{he} \\
\text{?*will} & \quad \text{he} \\
\text{?*would} & \quad \text{he} \\
\text{needn't} & \quad \text{need} \\
\text{?*need} & \quad \text{daren't} \\
\text{?*dare} & \quad \text{ought he to} \\
\text{?*will} & \quad \text{does he have to} \\
\text{?*would} & \quad \text{is he supposed to} \\
\text{?*is he bound to} & \quad \text{is he to} \\
\text{?*is he said to} & \quad \text{is he to} \\
\text{?*is he to} \\
\end{align*}
\]

In 73a, \textit{could} may be conditional 'would be allowed' or past 'was allowed (?was able)'. When we compare this paradigm with 7.34a, 7.36a and c in § 7.2.2, we notice that the items \textit{shall} and \textit{will} are subject to restriction. We have noted the instability of \textit{will} and \textit{shall} as deontics (§ 7.2.2) and supposed that this was connected with their
performativity. Their oddness here should be no surprise. 73b may also be compared with 7.34a, where we noted that complements like: be learning French are not normally interpretable with deontic modals. In 73b we see that a restricted set of modals do allow such complements in wh-questions; all of them involve obligation, and they challenge the authority by which the person referred to is made to learn French. This paradigm should be compared with 71a and b in § 11.5.3.

Here, in contradistinction to the case with epistemics, I find the pattern of deontic modality in wh-questions to be generally like that of yes-no questions.

To conclude I wish to note the pattern of modality in a subtype of wh-question, namely 'deliberative' questions. These, it seems to me, are semantically distinct from the kind of wh-question so far discussed: they are not posed in the usual way; and it is hard to decide whether the modals involved are deontic or epistemic (or even dispositional). Deliberative questions figure prominently in discussions of mood (cp. §§ 3.1.1, 5.2.4) because of the fact that in Latin and a number of other languages they involve the subjunctive. In English it seems we can construct the following paradigms: 74a for deliberations in present circumstances; 74b for deliberations involving imagined circumstances.
I think it is possible to refine the analysis I have given of wh-questions to distinguish between the more usual type of wh-question discussed above and deliberative wh-questions. In the former we may suppose that the modality covers only the wh-element; in the latter the modality may be presumed to have in its scope the whole proposition. We could by such a means give a unified specification for the subjunctive of Latin, the infinitive of French: Que faire? and the 'indeterminacy' with regard to epistemicity and deonticity of the modal expressions in English. (Compare also the 'indeterminacy' of subjunctive substitutes may and should §§ 14.1.4, 14.2.3).
§ 12 Modality in Complement Constructions

12.0 In this chapter I shall examine the nature of modality in reported speech and in other kinds of complement construction, such as those following verbs of fearing, determining, etc.

§ 12.1 Reported Speech

12.1.1 There are various ways of reporting speech, all dependent on pragmatic factors. But when grammars refer to 'reported speech' or 'indirect speech' or 'oratio obliqua', they generally mean the reporting of speech within the context of narrative, where neither the speaker nor the hearer is directly involved and where the 'world' spoken of is completely divorced from the speaker's world. It is in such cases that sequence of tense rules can be seen to operate most clearly. These I summarize in Table X, with examples from both English and German.

There are certain important restrictions to both systems which to an extent are parallel.

1) The rules do not apply when the speaker/the reporter commits himself to the truth of a reported generic statement (cp. Kiparsky/Kiparsky 1970):

   12.1a.  Er sagte, die Erde sei flach.
          b.     Er sagte, die Erde ist flach.

   12.2a.  He said the earth was flat.
          b.     He said the earth is flat.

In 1a and 2a the speaker is not committed to the truth of 'the earth is flat'; in 1b and 2b he is. \(132, 133\)

2) The changes:

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### Table X

**General Principle:**

<table>
<thead>
<tr>
<th>German: indicative</th>
<th>⇒ subjunctive ('konjunktiv I')</th>
</tr>
</thead>
<tbody>
<tr>
<td>English: primary tense-form</td>
<td>⇒ secondary tense-form</td>
</tr>
</tbody>
</table>

**In detail:**

<table>
<thead>
<tr>
<th>German: future (werden + infinitive)</th>
<th>⇒ subjunctive of werden + infinitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>future perfect (werden + past participle + sein)</td>
<td>⇒ subjunctive of werden + past participle + sein</td>
</tr>
<tr>
<td>present</td>
<td>⇒ present subjunctive</td>
</tr>
<tr>
<td>perfect/past</td>
<td>⇒ perfect subjunctive</td>
</tr>
<tr>
<td>pluperfect</td>
<td>⇒ 'double' perfect subjunctive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>English: future (will/shall)</th>
<th>⇒ conditional (would/should) + perfect + progressive</th>
</tr>
</thead>
<tbody>
<tr>
<td>present</td>
<td>⇒ past + perfect + progressive</td>
</tr>
<tr>
<td>past</td>
<td>⇒ pluperfect (= Past + Perf) + Prog</td>
</tr>
<tr>
<td>past</td>
<td>⇒ past + Perf + Prog</td>
</tr>
</tbody>
</table>

**German Examples:**

Er sagte: "Sie ist krank." ⇒ Er sagte, sie sei krank.
"Sie wird gekommen sein." sie werde gekommen sein.
"Sie wird kommen." sie werde kommen.
"Sie ist gekommen." sie sei gekommen.
"Sie war schon da." sie sei schon da gewesen.
"Sie hatte ihn schon besucht, bevor er starb." sie habe ihn schon besucht gehabt, bevor er gestorben war.

**English Examples:**

He said: "She's ill." ⇒ He said she was ill.
"She's coming." she was coming.
"She's come." she had come.
"She's been working." she had been working.
"She'll come." she would come.
"She'll be coming." she would be coming.
"She'll have come." she would have come.
"She'll have been working." she'd have been working.
"She was ill." she was/had been ill.
"She was coming." she was coming/had been coming.
"She had been ill." she had been ill.
"She had been working." she had been working.
"She's going to come." she was going to come.
past → past perfect
past progressive → past perfect progressive

in English, and the change:
pluperfect → 'double' subjunctive perfect

in German are only effected when it is necessary to dis-
ambiguate a time relation.

12.3a. He said: "She was thinking of coming."
⇒ He said she was thinking of coming.

b. He said: "She was thinking of coming, when
she was called away by a family bereavement."
⇒ He said she had been thinking of coming
when she {was} called away by a family
bereavement.

The 'double' perfect in German, whether subjunctive or not,
is regarded as awkward and only acceptable when a perfect
subjunctive or alternatively a pluperfect indicative is
misleading.

3) Particularly with complex reported statements, a past
tense is not put into the pluperfect when a state of affairs
reported is still true at the time of the report:

12.4. He said: "She decided not to sell because the
market was bad."
⇒ He said she had decided not to sell because
the market was bad.

4) Where the German subjunctive form (konjunktiv I) is not
distinguishable from the indicative, the past subjunctive
(konjunktiv II) is often used

12.5. Er sagte: "Sie haben das Auto schon gekauft."
⇒ Er sagte, sie haben das Auto schon gekauft.
⇒ Er sagte, sie hätten das Auto schon gekauft.

5) Occasionally, where the situation described in (4) does
not hold, konjunktiv II is used to express greater reserv-
ation on the part of the speaker. Normally a but-clause
follows.

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12.6. Er sagte: "Sie ist krank."
⇒ Er sagte, sie wäre krank, aber ich glaub's hält nicht.(135)

6) No change is possible when what is reported is already conditional or subjunctive.

12.7. Er sagte: "Wenn du gar nicht geschlafen hättest, wärest du auch müde."
⇒ Er sagte, wenn sie gar nicht geschlafen hätte, wäre sie auch müde.

but:

12.8. Er sagte: "Wenn du gar nicht geschlafen hast, bist du auch müde."
⇒ Er sagte, wenn sie gar nicht geschlafen habe, sei sie auch müde.

12.9. He said: "If you hadn't slept a wink, you'd be tired too."
⇒ He said if she hadn't slept a wink, she'd be tired too.

and:

12.10. He said: "If you haven't slept a wink, you'll be tired too."
⇒ He said if she hadn't slept a wink, she would be tired too.

7) Modal verbs follow the rules insofar as they can. Certain verbs do not change at all, either because they are strictly speaking subjunctive or defective in some way. These include: German: möchten English: had better, used to, must, ought to, needn't and naturally would, should, might, could (cp. Table V in § 9.4.1).

12.11. Er sagte: "Ich möchte sie besuchen."
⇒ Er sagte, er möchte sie besuchen.

What is evident from this summary of the reporting of statements is that the tense and-or mood sequence rules represent the unmarked choice in indirect discourse and that certain marked forms breaking these rules occur when the speaker wishes to relate the reported statements to his
view of the world. It is, therefore, not possible to handle the rules of tense-sequence in reported speech purely as a transformational mechanism at the realizational level, and we need to look first for a structural specification of reported speech and second for a structural explanation of the semantic contrasts permitted.

12.1.2 The typical narrative situation involved in reported speech may be divided into two cases: i) where the reporter has himself actually witnessed the 'direct speech' in the object world \( w_j \); ii) where the reporter is reporting what he has been told in the object world. These two cases may be represented graphically as follows:

\[
\begin{array}{c}
 W \quad \text{(speech situation)} \\
 \downarrow \\
 I \quad \text{(speaker)} \quad \text{II} \quad \text{(hearer)} \\
 \downarrow \\
 w_i \quad \text{(speaker's viewpoint)} \\
 \downarrow \\
 \text{II'} \quad \text{hearer} \quad \text{direct speech (i)} \\
 \downarrow \\
 w_j \quad \text{(object world)} \\
 \downarrow \\
 \text{II'} \quad \text{hearer} \quad \text{speaker (ii)}
\end{array}
\]

Strictly speaking it is case (ii) that we should be concerned with, as case (ii) may be distinguished by the use of modal verbs or other modality items. Compare:

12.12. He said she was ill.
     He's supposed to have said she was ill.
     Er sagte, sie sei krank.
     Er soll gesagt haben, daß sie krank sei.

But frequently this distinction is not observed. In terms of the framework of modality being developed in this dissertation, we may specify the illocutionary and modality structure of 'He said ...' as either:

\[
\begin{array}{c}
 W_0 \quad w_i \quad w_j \\
 \downarrow \\
 \text{(he say)} \quad (\text{case i})
\end{array}
\]

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or:

\[ w_0 \quad w_1 \quad w_j \]

\[ \cdot \quad i \quad (\text{he say}) \quad (\text{case ii}) \]

and the modality structure of what was said in both cases as \( i \), i.e. non-assertive.

The speech reported does not have an Ill of its own since it cannot be regarded as a separate statement made by the speaker; it does, however, have a Mod of its own because the speaker may view what is reported in a different light from the act of reporting. The reported speech must, of course, involve reports of an Ill in the speech reported, question, imperative, etc. but this is part of the Prop.

So far I have only mentioned reports of statements; questions and imperatives I shall take up in § 12.1.3. Pending a discussion of the representation of multiple modality (§§ 13.1.2, 14.1.0), I shall represent the structure for:

He said she was ill as:

\[
\begin{array}{c}
\text{Ill} (w_0) \quad \text{Mod} (w_i) \quad \text{Prop} (w_j) \\
\cdot \quad i \quad \text{past} (\text{he say x})
\end{array}
\]

In § 2.2.3 it was claimed that past tense-forms in English are realizations of underlying past in Mod, i.e. past \( \cdot \).

On analogy it might seem that the tense-form of reported speech should be related to past \( i \). This is problematic if reported speech in German is to be analyzed in parallel fashion - we cannot assume a past tense in the underlying structure of German subjunctives.

The re-analysis I propose will consider the reported speech as essentially tenseless. Since it is observable in both languages that we cannot use a past tense form to indicate
a report without an introducing past tense verb: He said, claimed, etc., there is justification for this. This will allow us to generate a past tense-form in English (as the unmarked form) as a tense copy of the introducing tense-form, and a subjunctive in German as a non-factive tense-form. When what is reported is held to be valid, i.e. receives the modality • under Mod, then the normal tense assignment rules take over. Compare:

12.13a. He said she loved him (but I doubt it).
    b. He said she loved him (and so she did).
    c. He said she loves him. (136)

From the 13a and b sentences (without the expansions) it is impossible to decide whether the speaker accepts the truth of the report or not, though we would analyze 13b with the expansion as having past • modality over (she love him). In 13c, however, the modality is pres •, which is grammaticalized in English, as it would also be in German.

What is not explained by this is the use in German of the past subjunctive (konjunktiv II) to indicate a greater degree of doubt on the part of the speaker. It should not be forgotten that this possibility is only partial (since not all verbs have a clear three-way morphological distinction: indicative ≠ present subjunctive ≠ past subjunctive) and is probably very much a question of dialect. If, however, it is a systematic distinction, then two analyses suggest themselves: i) past • modality i.e. greater remoteness; ii) a syntactic reflex of an ('understood' i.e. deleted) but-clause.

I find the first solution preferable since, as I shall argue...
in § 13.3.2, there is a problem of indeterminacy and also a lack of abstraction in the semantic specification with solutions involving deletions of this kind. Notice that we would not treat this use of past subjunctive in German in the same way as counterfactual conditionals (cp. §§ 13.2, 13.3), since English has no parallel use of counterfactual forms in reported speech. Semantically, of course, the use of past subjunctive in reported speech has nothing to do with counter-factuality.

12.1.3 Having examined the reporting of statements, I wish to look at the reporting of commands and questions. For reported imperatives we have two constructions available in both languages:

1) **that-clause : daß-clause**

2) (accusative) object + infinitive : dative + infinitive

with a preference for the second construction - perhaps because the first frequently requires a subjunctive or subjunctive substitute. Moreover, it allows a certain ambiguity not present in the second construction. Compare:

12.14a. He told her to leave.
  b. He ordered her to leave.
  c. He said (that) she {should} leave.
  d. He ordered that she {should} leave.

In 14c and d it is not necessary to interpret the command as being addressed directly to the referent of the subject of the **that-clause;** it may be a delegated command, one to be communicated by an intermediary. The following pair illustrates this more clearly:
12.15a. He ordered that the troops stand guard.
   b. He ordered the troops to stand guard.

Only in 15b is it implied that the troops were ordered in person by the referent of the subject of the sentence. It is worth noting that demands, which unlike commands may be made by a subordinate of a superior, have the that-clause construction exclusively:

12.16. He \{insisted\} that she \{leave. should leave.\}

I will return to the question of complementation types below (§ 12.2).

In German the expression of reported commands requires a subjunctive or a subjunctive modal in daß-clauses.

12.17a. Er befahl, daß sie \{gehö. gehen solle. gehen sollte.\}
   b. Er befahl ihr, zu gehen.
   c. Er sagte, sie \{söle \{möge \} gehen.\} (137)

The form solle in 17c is the most preremptory, möge more polite and möchte extremely polite. The last mentioned is perhaps comparable with the use of might in some dialects of English:

12.18. He said she might (just) wash the dishes.

It should be borne in mind, however, that the reporting of commands is not as straightforward as the reporting of statements. For example, the reported speech forms:

12.19a. He said she was to go.
   b. He said she should go.

(ignoring the possibility of interpreting should as an expression of advice) could both stand for more than one direct speech form.
12.19a'. "She is to go."
a'. "She will go." etc.
b'. "Go."
b'. "She shall go." etc.

and yet we would not say that 19a' and a" or 19b' and b" were equivalent.

The reporting of hortatives, let's ... etc. may be performed with the verbs: suggest, propose etc., followed by either the subjunctive or the subjunctive-substitute should. (138)

12.20. "Let's go!"

\[\begin{align*}
&\text{He suggested (that) they go.} \\
&\text{He suggested that they should go.}
\end{align*}\]

Requests with "Will you ...?" and suggestions with "Why don't you ...", "Shall we ..."; etc. are treated as questions for the purposes of reporting (see § 12.1.3).

The analysis of reported commands will be taken to be the same as for statements as far as the structure of Ill and Mod is concerned - clearly there are considerable differences in the structure of Prop. As with statements it is observable that the speaker can "break" the sequence-rules when he wishes to indicate that the state of affairs referred still has validity, i.e. when the fulfilment of the command has not been carried out but may still be at some point; for example:

12.21. He said she's to come.

We have already seen (§ 11.3.1) that there is a distinction between open and non-open questions of the yes-no type. This distinction is reflected, in some dialects of English at least, in the modality of reported questions. The open question:
12.22. "Is she coming?"

would be reportable as:

12.22'. He asked
{ \begin{align*} 
\text{if she} & \quad \text{was coming.} \\
\text{whether she} & \quad \text{were coming.} 
\end{align*} \}

That is both past tense-forms and past subjunctive forms are possible. My feeling is that the subjunctive form is preferable to some speakers in narrative usage. It is also possible that speakers use indicative forms to report a somewhat different situation; compare:

12.23a. He asked (Peter): "Is she coming?"
\[ \Rightarrow \text{He asked Peter if she were coming.} \]

b. He asked (Mary): "Are you coming?"
\[ \Rightarrow \text{He asked (Mary) if she was coming.} \]

This is, however, a purely intuitive response, which is unsupported by evidence.

The point remains, however, that in principle, contrary to what the standard grammars say\(^{(140)}\), both indicative and subjunctive forms are possible in reported open yes-no questions. On the other hand, wh-questions, when reported may only appear in the indicative.

12.24. He asked: "What time is it?"
"What is she doing?"
"When is she leaving?"
"Who(m) is she meeting?"
"Who is she?"
"How is she coming?"
"Which way is she coming?" etc.

\[ \Rightarrow \text{He asked what time it \{ \begin{align*} 
\text{was.} \\
\text{what she} & \quad \text{\{ \begin{align*} 
\text{was} \\
\text{were} \}
\text{doing.} \\
\text{when she} & \quad \text{\{ \begin{align*} 
\text{was} \\
\text{were} \}
\text{leaving.} \\
\text{who(m)} & \quad \text{\{ \begin{align*} 
\text{was} \\
\text{were} \}
\text{meeting.} \\
\text{who she} & \quad \text{\{ \begin{align*} 
\text{was} \\
\text{were} \}
\text{meeting.} \\
\text{how she} & \quad \text{\{ \begin{align*} 
\text{was} \\
\text{were} \}
\text{coming.} \\
\text{which way she} & \quad \text{\{ \begin{align*} 
\text{was} \\
\text{were} \}
\text{coming.} \end{align*} \} \text{ coming.} \end{align*} \}
\end{align*} \} \text{ coming.} \} \text{ etc.} \]
\end{align*} \} \text{ etc.} \]
This would suggest a difference in the modality structure of these two types of question. The solution I adopted in § 11.3.2 of having only the wh-item in the scope of \( \xi \) is therefore in accordance with what we observe with reported questions.

The reporting of non-open yes-no questions is somewhat unclear. Some speakers find all the theoretically possible forms unacceptable - others accept all. The non-open question:

12.25. "Isn't she coming?"

would be reported in my own speech as follows:

\[
\text{12.25'. He asked}\begin{cases}
\text{if she}\begin{cases}
? \text{wasn't coming (after all)}. \\
\text{weren't coming (after all)}.
\end{cases} \\
\text{whether she}\begin{cases}
?* \text{wasn't coming (after all)}. \\
\text{*weren't coming (after all)}.
\end{cases}
\end{cases}
\]

That is, I not only have a preference for the subjunctive but also a distinction here between if and whether, which, following the paradigm for reported open yes-no, we might wish to claim were in free variation (141).

If a distinction is to be drawn between if and whether in the reporting of open questions, it can be made in terms of the pattern with or not:

\[
\text{12.26. I asked}\begin{cases}
\text{if}\begin{cases}
\text{whether}
\end{cases} \text{she was there.} \\
*\text{if}\begin{cases}
\text{whether}
\end{cases} \text{or not she was there.}
\end{cases}
\]

\[
\begin{cases}
?\text{if}\begin{cases}
\text{whether}
\end{cases} \text{she was there or not.} \\
?\text{if}\begin{cases}
\text{whether}
\end{cases} \text{she was or wasn't there.}
\end{cases}
\]

There seems to be a tendency for whether to occur in reported open questions and alternative questions, which in my...
analysis (cp. § 11.3.1) are similar in terms of their semantic specification, though of course pragmatically different. And, in my speech at least, a tendency for if to occur in reported non-open questions.

The responses of my informants on all three issues that have been raised: 1) subjunctive vs. indicative 2) if vs. whether 3) reportability of non-open questions - are somewhat at odds. On (1), which is the point I am mainly concerned with, they split fairly evenly: some preferred the subjunctive others the indicative (cp. footnote 139). Only one refused to accept the subjunctive, and then only with whether. Another doubted whether the subjunctives were strictly equivalent to indicatives: she favoured indicatives for the reporting of open questions and subjunctives for the reporting of non-open questions. This is to an extent in accord with my own reactions and intuitions.

If it is possible to say that there is a tendency for reported questions to pattern as:

- wh-question
  - negative yes/no (non-open) - subjunctive preferred
  - positive yes/no (open; also non-open) - indicative or subjunctive

then there is some basis for claiming that reported questions reflect the modality of direct questions, the modality of which (cp. § 11.3) is:

<table>
<thead>
<tr>
<th>Ill</th>
<th>Mod</th>
<th>Prop</th>
</tr>
</thead>
<tbody>
<tr>
<td>open</td>
<td>?</td>
<td>{~}</td>
</tr>
<tr>
<td>non-open</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

Finally, it may be noted that the reporting of questions also reflects whether the question reported is a true
question or a request. If a request is reported then a subjunctive is not possible. Compare:

12.27a.  He asked her: "Are you coming?"
⇒ He asked if she \{ was \}_{\text{were}} coming.

12.27b.  He asked her: \{{"Shall I \},\text{\"Am I to \}} send it to you?"
⇒ He asked her if he \{ was \}_{\text{*were}} to send it to her.

Im German, there appears to be no syntactic difference between open and non-open and \textit{wh}-questions as far as modality is concerned. My informants would allow normally only konjunktiv II, except when a non-narrative reporting situation was involved\(^{(143)}\).

12.28.  Er frage: "Kommt die Uschi?"
⇒ Er frage, \{ ob Uschi käme. (narrative) \}
\{ ob Uschi kommt. (non-narrative) \}

§ 12.2 Complementizing Verbs

12.2.0  In the preceding examination of reported speech we saw that there are two sources of modality involved:
i) modality in the strict sense, i.e. the speaker's view;
ii) the original modality of what is reported. I shall now turn my attention to the class of complementizing verbs in general. Many of these may function in the 'double modality' situation characteristic of reported speech (though some do not); many are also capable of 'performative use' (cp. § 5.1). What concerns us directly here is the modality of their complements. As in the previous section I shall be concerned primarily with English rather than German, since English shows considerably more diversity.

12.2.1  I shall distinguish eleven types of complement mod-
ality, which to an extent correspond to various surface complement constructions:
1) factual 2) assertive 3) non-assertive 4) counter-factual 5) futurate 6) volitional 7) requesting 8) hortative 9) obligative 10) commissive 11) putative

Many complementizing verbs cross-classify.
By 'factual' I do not mean 'factive' or [+ FACT] in the sense intended by Kiparsky/Kiparsky (1970), although 'factual' verbs are included in Kiparsky/Kiparsky's categorization [+ FACT] in that some of them presuppose the factuality of the proposition in the complement. Furthermore, Kiparsky/Kiparsky's [- FACT] would include my complement modality types 2 - 10; their [+ EMOT] (= emotive) types 6 - 10.

I am concerned with the establishing of notional complementation types, whereas Kiparsky/Kiparsky are concerned with the explanation of certain syntactic types and set up features only for this purpose. Thus the sentences:

12.29a. I'm surprised that he should do so.
b. I requested that he should do so.

although notionally distinct in their complementation are both analyzed by Kiparsky/Kiparsky as [+ EMOT].

1. Factual complementizing verbs include: know, think, doubt, believe, don't think, understand. They refer to states of mind of the subject; require that-complements; permit all tense forms plus irreals forms. Some entail the factuality of the complement, others do not.
2. Assertive verbs include: say, claim, deny, suggest, maintain. They refer to various ways of asserting or
counter-asserting; may appear in performative use; require that-complements; permit all tense forms plus irrealis forms. None entail the factuality of the complement.

3. Non-assertive verbs include: don't know, wonder. They refer to states of mind of the subject; require whether/if-complements; permit all tense forms plus irrealis forms. They entail the non-factuality of the complement (145).

4. Counter-factual complementizing verbs may be subdivided into two sub-types: volitional and non-volitional.

a) The volitional verbs include: wish, would like, would prefer, would rather, would hate
b) The non-volitional: it is time.

Two types of complement are possible: that-complement with wish, it is time and would rather; for-x + to-complement with an alternative it + if with would prefer, would like, would hate. For example.

12.30a. He wishes she were here ≠ He wishes her to be here.
       b. He'd prefer for her to be here ≈ He'd prefer it if she were here.

All require that the finite verb in the complement be a counter-factual form. With the exception of wish and it is time, these verbs are themselves counter-factual forms and may contrast with non-counter-factual forms:

12.31a. He'd prefer it if she were here.
       b. He prefers {for her to come.
          that she come.

It has often been pointed out, however, that English wish is equivalent to German forms which are past subjunctive (konjunktiv II).
12.32a. I wish she were here.
   b. Ich wünschte, sie wäre hier.

We might therefore claim that this wish is distinct from wish as a volitional complementizing verb (below) in being inherently counterfactual or 'irrealis'. Time reference is, as we would expect, similar to the pattern in counterfactual if-clauses with the exception that would may indicate future time reference.

   12.33. I wish
           \[
           \begin{array}{l}
           \text{it would rain.} \\
           \text{it were raining.} \\
           \text{it rained everyday.} \\
           \text{it had rained.}
           \end{array}
           \]

After it is time only the past indicative (in some dialects, past subjunctive), representing present time reference, is possible.

\[
\begin{array}{l}
\text{*she would go.} \\
\text{she went.} \\
\text{she were going.} \\
\text{she was going.} \\
\text{*she had been going.} \\
\text{*she had gone.}
\end{array}
\]

5. Futurate complementizing verbs include: expect, hope, fear, be afraid, pray. They refer to the state of mind of the subject in anticipation of a state of affairs coming to be; require that-complements; have a tendency to co-occur with will forms in the complement.

In older forms of English fear and be afraid would occur with lest and-or subjunctive or subjunctive substitute should.

   12.35. He feared lest she should come.\(^{(146)}\)

but the most usual form in contemporary English is:

   12.36. He's afraid she'll come.

with a tense-sequence rule operating on past tense-forms:

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12.37a. He was afraid she would come.
   b. He hoped she would come.

Futurate verbs do not necessarily occur with will (\rightarrow would) in their complements. Compare:

12.38a. He hopes she's there.
   b. He hopes she was there.
   c. He's afraid she's there.
   d. He's afraid she was there. (147)

However, in all these cases, the state of affairs referred to by the complement is not only non-factual, its determinability lies in the future. Compare the use of will (§ 7.1.2) as a judging epistemic with non-future events:

12.39a. That'll be the postman.
       b. That'll have been his wife.

It is because of this future determinability that I term these verbs 'futurate'.

6. Volitional complementizing verbs include: wish, desire, want, be anxious. They express states of mind of the subject; have (x) + to - complements\((148)\) (wish and want) or that-complement (desire); require a subjunctive or subjunctive substitute should in a that-clause. They are not capable of performative use, but imply an obligation.

7. Requesting complementizing verbs include: ask, request, beg. They are capable of performative use; allow either that-complements or (x) + to-complements; require a subjunctive or subjunctive substitute should in that-complements.

8. Hortative complementizing verbs include: suggest, propose, move; advise, warn. They are capable of performative use; require that-complements\((149)\); require a subjunctive or subjunctive substitute should in that-complements.
There is another sense of suggest as in:

12.40. I suggest that you were there.

which might be glossed: 'I suggest it is the case/a fact that you were there'.

9. Obligative complementizing verbs include:

a) it is essential/vital/necessary

b) command, order, permit, forbid, tell

c) demand, insist

The verbs: demand, command, order, permit, forbid and tell may all be used performatively; the rest express an objective obligation or necessity which does not necessarily originate with the speaker as with the other verbs when used performatively. Perhaps the latter should be assigned to a separate category.

Sub-type a) normally require that-complements with a subjunctive or subjunctive substitute should; they also allow for x + to-complements.

Sub-type b) normally require x + to-complements; order may also occur with that-complements, in which case a subjunctive or subjunctive substitute should is required.

Sub-type c) may only occur with that-complements and requires a subjunctive or subjunctive substitute should.

10. Commisive complementizing verbs include: promise, resolve, intend, decide, determine. They indicate that the subject has committed himself to the realization of some state of affairs; with the exception of intend, which indicates a state of mind, they may all be used performatively.

With the exception of intend, which will allow x + to-com-
plements, they only allow to-complements when their subject is notionally also the subject of the complement. All allow that-complements; in such cases, they may all appear with shall; promise may also co-occur with will; resolve, determine, decide with be to; intend, decide, determine with should. A sequence of tense rule operated on will, shall, be to when the complementizing verb is in the past.

12.41a. He promised he would come.
   b. He promised she should go.
   c. He decided she was to go.

11. Putative complementizing verbs include:
   a) be glad/sad/happy/pleased/sorry/annoyed/surprised, regret
   b) be annoying/regrettable/a pity/odd/surprising/disgraceful/unthinkable/laughable.

   They indicate: a) the state of mind of the subject or: b) his judgment in reaction to a state of affairs, the factuality of which need not be asserted or supposed. Thus there is a choice between an indicative tense-form in the that-complement with which these verbs co-occur and a form with should.

12.42a. I'm surprised that he should resign.
   b. I'm surprised that he's resigning.

   Unlike other complement modalities, should is not in variation with the subjunctive, and cannot therefore be called a subjunctive substitute.

12.42'. * I'm surprised that he resign.

Semantically the distinction seems to involve the subject's
acceptance of the complement (indicative) or his uncommittedness to it or disassociation from it (should)\(^{(154)}\).

We may summarize this classification with a list of the main contrasts:

1) the complementizing verb: a) is capable of performative use or b) expresses a state of mind or c) expresses an attitude to truth.

2) the complement may be a) factual or b) non-factual or c) counter-factual

3) that-complements may allow: a) full tense paradigm b) subjunctive or should c) should only d) will e) shall/ be to f) irrealis (= past subjunctive, and for some speakers g) subjunctive only.

12.2.2 The discussion and elaboration of the analysis outlined in § 11.2.1 has already set up the hypothesis that 'performative' interpretations of modal verbs are a result of the 'world changing' operator \(!\) under Ill. The analysis of non-performative complementizing verbs poses another question. We need, on the one hand, an analysis which will explain the relationship between non-performative complementizing verbs and reported speech in the stricter sense noted earlier, but on the other hand we need an analysis which shows how non-performatives are related to performatives\(^{(155)}\).

I propose, therefore, to analyze complementizing verbs which are not performative as part of the proposition (Prop). They are composed of abstract predicates and-or quasi-predicates which are parallel, but not necessarily identical, to the
abstract elements involved in Ill or Mod. Thus, we may posit an abstract predicate S for assertive complementizing verbs (type 2 above) which is the propositional equivalent of \( \cdot \) under Ill. The kind of structure it may appear in is:

\[
\begin{array}{ccc}
\text{Ill} & \text{Mod} & \text{Prop} \\
\cdot & \cdot & S \times y (\cdot (p))
\end{array}
\]

In order to account for the various types of complementizing verb distinguished above, we need, apart from the mechanisms already proposed, a set of abstract predicates.

For present purposes we may distinguish:

- \( K \) a predicate referring to a state of knowledge
- \( S \) to an assertion
- \( Q \) to a deliberation
- \( W \) to a state of volition
- \( R \) to an emotive reaction
- \( \text{IMP} \) to an act of ordering etc.

One of the arguments of these predicates is the subject of the sentence. The specifications for some of the complementizing verbs may be set out as:

1. \( [K (\cdot (p))] \)
2. \( [S (\cdot (p))] \)
3. \( [Q (\cdot (p))] \) or \( [rK (\cdot (p))] \)
4a. \( [W (\text{irr} \cdot (p))] \)
5. \( [K (\text{fut} \cdot (p))] \)
6. \( [W (\text{fut} \cdot (p))] \)
11. \( [R (\cdot (p))] \) or \( [R (\cdot (p))] \)

The rest require some discussion.

It will be recalled that in §11.4.1 requests involving \textit{will you} were provisionally analyzed as:

\[ ! [? \text{ fut} \cdot (p)] \]

If the predicate \( Q \) is taken to be the propositional equivalent of \( ? \) under Ill, it is possible to provide an analysis for requesting complementizing verbs that is partially parallel:

\[ [Q \ldots (p)] \]
I have left out for the moment the propositional equivalent of fut. In § 7.3.2 I argued against a volitional analysis of will and in favour of a future modality analysis thereof; here it is less easy to dispose of volition as a feature of the analysis of complementizing verbs like ask, etc. Let me consider the complementation of ask again:

12.43a. I'm asking you if you will open the door.
       b. I asked her if she would open the door.

12.44a. I'm asking you to open the door.
       b. I asked her to open the door.

Despite the pragmatic differences between 43a and 44a, and between 43b and 44b, we can, I think, claim at least a weak paraphrase relation between the items of the two pairs. The pattern of complementation in 44a and b is very similar to that of command, and although it is obvious that the fulfilment of what is asked for (or commanded) must lie in the future, we should bear in mind that the futurity of realization observed with imperatives (cp. § 11.2.6) is not in itself justification for a future time-reference analysis. One solution to this apparent dilemma is that the world changing operator (!) has its propositional equivalent in a volitional feature. Thus we could refine above as:

\[ Q (\neg \beta \ldots (p)) \]

where (cp. § 7.3.3) \( \neg \beta \) indicates weak volition (cp. Leech 1971), the remaining dots (\( \ldots \)) allowing for the specification of participants.

Hortative expressions (type 8 above) should of course be compared with expressions like: let's ... and shall we ... (cp. § 11.4.2), which have been analyzed as follows:

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We may also consider in this connection some other forms:

12.45a. Will we go?
b. Are we going to go?
c. Are we to go?

Previous arguments (cp. § 2.2.3, § 7.3.2 and § 11.1.1) lead us to the specifications:

12.45a'. ? fut . p 
b'. ? (fut (p))

i.e., with future modality and time reference respectively.

I suggested in footnote 53 that the 'epistemic' use of \( \forall \) be to may represent future time reference and \( \cdot \) modality. If this specification is transferred to 'deontic' senses, then it is not distinguishable from the specification 45b'. Alternative analysis should bring out the fact that volition of some kind is involved; and also that futurity of realization is probably, as with imperatives, not a case of future time-reference but a concomitant of its modality specification. Perhaps:

12.45c'. ? (\( \Delta \) \( \beta \) \( \ldots \) (p))
c". ? \( \alpha \) (p)

Specification 45c' would relate 45c to shall we constructions with a difference in the identity of the participant involved in the quasi-predicate \( \beta \). This analysis would be glossable: 'I ask if it is the case that it is required that we go.' On the other hand, specification 45c" with the as yet unspecified modality \( \alpha \) is meant to stand for: 'I ask if it is to/shall be that we go.' The difference may be insignificant; on the other hand, it would be a not unattractive solution, if we could also with a similar
specification capture the meaning of deliberative questions like:

12.46. Am I to die?

which it seems to me a more appropriately glossed by 'is p to be' than by 'does x require p'. (It could be, of course, that utterances like 45c are ambiguous between specifications like 45c' and c", being susceptible to a deliberative as well as a 'volitional' interpretation.) If 45c" is defensible, then we should try to specify the modality different from that of open-questions which stands for 'it is to be/shall be (the case).' (This is similar to, but has a different function from, Lyons 'so-be-it' operator, cp. Lyons 1977, p. 803) I shall symbolize this modality j. Thus 45c" can be reformulated:

12.45c"'. ? j (p)

Such a modality would also be a strong candidate for the modality of let's-constructions and imperatives, thus:

12.47. Go!
12.47'. ! j (p)

Returning to the question of hortative complementizing verbs, we might suppose their analysis to contain a propositional equivalent of such a modality, thus:

IMP ( j (p))

The distinction between hortative complementizing verbs and obligative complementizing verbs like: insist may be attributed to a distinction between ▽ and △ degrees of modality associated with IMP, which is the propositional reflex of !, thus:

▽IMP ≈ suggest
△IMP ≈ insist

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The whole of this argument is, I am aware, based on a very tentative proposal. I suggest it only as a possibility to be explored.

The complementizing verbs advise, warn are, I think, to be analyzed as denoting a kind of assertion. Comparison should be made with utterances like: You'd better go, which, according to context, may be interpreted as advice or a threat. Although glosses like: 'I say you'd better go' might lead us to suppose an irrealis specification for Mod (cp. § 13.3.2), these forms do not seem to be counterfactual or counter-expectation. They co-occur normally with forms that are not irrealis.

12.48a. You'd better go if you don't want trouble.
   b. You should go if you don't want trouble. (156)

Again, it is possible that a propositional reflex of a modality \( \Phi \) can capture the sense of complementizing verbs like: advise, thus

\[
S (\Phi (p))
\]

which may be glossed: 'X says it shall be that \( p \)'.

Notice that I do not think it necessary to ascribe IMP to such expressions, nor, for that matter, to ascribe ! to expressions like: You'd better go. Whilst I do not exclude the possibility that they may have a performative use, I find it more convincing to treat them as assertive utterances stating the best method of avoiding certain unpleasant consequences of a potential state of affairs.

I suggested that an obligating verb like: insist may have a specification (\( \Delta \) IMP). This applies to the demand and
command types - there may, however, be differences involving volition (cp. § 7.3.3). The *it is necessary* type requires a somewhat different analysis, I believe. It should be treated as the propositionalized modality $\Delta$ in an assertion, i.e.

$$\cdots [\Delta \ (p)]$$

The syntax of commissive complementizing verbs shows some diversity, and the extent to which the forms are in contrast is not immediately clear. Commissives should, I think, be treated as a type of assertion with a propositional modality: $\jmath$. Thus:

$$S (\jmath \cdots (p))$$

If there is in fact a difference between:

12.49a. I promise that he will do it.
    b. I promise that he shall do it.

and between:

12.50a. I've decided that Mary is to go.
    b. I've decided that Mary shall go.
    c. I've decided that Mary should go.

then the specification above will require refinement, hence (...).

12.2.3 I have attempted in the foregoing sections to clarify the relationship between various utterances types, their reporting and certain consequences for the analysis in general:

1) modality is involved in the analysis of reported speech forms
2) there are propositional equivalents of illocutions and modalities involved in the analysis of complementizing verbs. Unlike R. Lakoff (1968), I leave open the question
of whether we can identify illocutionary and modal operators with elements of the proposition. I also come to rather different conclusions to both her and Rosenbaum (1967) about the classification of complement-types and complementizing verbs.

I have, however, avoided discussion of the nature of complements of the verb (or is it a number of lexical items?) say. We find it doing service as a verb of asserting, obligating, hortation and commission:

12.51a. I say he's there.
    b. I say he should go.
    c. I say we should go.
    d. I say you shall go.

I leave this and its relation to other complementizing verbs, as well as many other subjects, as something still open to exploration.
§ 13 Modality and Conditional Clauses

13.0 While the modality phenomena discussed hitherto have to a greater or lesser extent all been discussed by other linguists, and my interest in them has primarily been to establish a comprehensive analysis, the modality phenomena to be discussed in this chapter have been largely ignored by theoretical linguists. Even the nature of complex and compound sentences is relatively unexplored and in order to set off into this jungle we need to refer rather to the works of traditional grammarians than to those of recent theoretical linguists (157). In § 13.1 I examine the nature of conditional clauses with regard to illocution and modality, and in § 13.2 I examine the paradigms of modal expressions in the various types of conditional sentence established in § 13.1. Finally, in § 13.3 I discuss the nature of 'tentatives' and argue for irrealis modality.

§ 13.1 Illocution and Modality in Conditional Clauses

13.1.1 One of the weaknesses of standard Transformational Grammar is that it has, as yet, not developed an adequate theory of complex sentences. As I suggested in 1.1.2, the principle of embedding is not capable of handling all types of complex structure. Within the transformational literature there seem to be two assumptions, neither of them to my knowledge discussed in detail or formally proposed. One is that if-clauses are S-embeddings onto an Adverb node, roughly:
This kind of analysis of subordinate clauses in general is to be found in Rutherford (1970). The other treats conditional clauses as deriving from a higher predicate IF which commands two S nodes, roughly:

This seems to be the kind of analysis to be found in Davidson (1970) and R. Lakoff (1968). There are certain inadequacies about taking a conditional node, whether IF as a higher predicate or as a formative under Adv condition.

1) It is not so much the notions 'if', 'given', 'supposing', 'in case', 'imagine' (which might be said to realize IF) that underlie the conditionality of the double-S construction as the notion of consequence. A deep-structure S THEN/THEREFORE S (employing the same kind of symbolism) would seem to be more appropriate.

2) There are many conditional sentences which are not if-sentences. There is, for example, a distinction between:

13.1a. Whenever a, then b.
   b. If a, then b.

though both are conditional. This difference seems to involve causality, but I shall take this point up below.

3) It is not clear, if we take the model of grammar outlined in § 1, where IF would figure in terms of Ill and Mod. It may be recalled in this context that Jackendoff
(1972) posits a modality: 'conditional', but his analysis cannot be assumed to have any immediate validity for the present approach (cp. § 5.4.5).

4) It is observable in some languages, and German is one of them, that there is a relationship between temporal clauses: When he comes, I'll go and conditional clauses: If he comes, I'll go, both of these examples being expressible in German as: Wenn er kommt, (dann) geh ich. It is unclear whether this relationship could be brought out with an IF (S S) analysis, when the analysis of time adverbials, when, etc. is distinct i.e. $S \begin{array}{l} \text{NP} \\ \text{VP} \\ \text{Adv} \end{array} \begin{array}{c} \text{when} \\ S \end{array}$.  

5) Some conditional sentences may be formulated in terms of other complex sentence constructions, especially with because, since, as, so. While not claiming that these necessarily derive from conditionals, it is arguable that conditional sentences belong to a more complex system of intersentential relations, which may be 'translated' into conditional sentences or other sentence types, dependent on presuppositions, focus, etc. The following, for example, may all be said to express the logical expressions: $a \Rightarrow b$, where $a$ stands for 'he is a bachelor' and $b$ for 'he is unmarried':

13.2a. He's a bachelor, so he's unmarried.

b. If he's a bachelor, then he's unmarried.

c. Since he's a bachelor he's unmarried.

d. He's unmarried, because he's a bachelor.

But these are not necessarily equivalent in terms of truth values, and are certainly not linguistically equivalent (159).

13.3. I'll go if you pay me.
can satisfactorily be analyzed as containing an Adv con-
dition, this analysis seems less plausible with:

13.4. If you pay me, (then) I'll go.
which would presumably stand in transformational rela-
tion to 3. And if so, what source can be found for the
then (160): *Then I'll go if you pay me is nonsensical,
except if then has a totally different function. Notice,
however, that 3 and 4 tend to have rather different para-
phrase possibilities.

13.3a. I'll go { so long as } you pay me.
     b. *I'll go and you pay me. (161)
13.4a. ? Provided you pay me I'll go.
     b. ? So long as you pay me I'll go.
     c. Pay me and I'll go.
     d. You pay me and I'll go.

Although all four sentences 4a - d might be paraphrases of
various readings of 4, 4a and b (marked ?) would not para-
phrase 4c or d. Furthermore, 4a and b differ as regards
focus, and, it might be argued, are really focus transforms
of 3, which the others cannot be.
Similar problems appear with other types of conditional.

7) It is clear from examples like:

13.5. If you pay me Pay me and } I'll go.

13.6. If it { rains Should rain }, get the clothes in.
        Should it rain

that conditional clauses may permit two different illocut-
ions, so, in these cases at least, we would have to posit
structures like:

(Ill : Mod : Prop) \( \alpha \) (Ill : Mod : Prop) (162)

where \( \alpha \), here, stands for an unspecified conjoinder.
13.1.2 In order to arrive at a tentative theory that will account for the whole range of phenomena involved in conditional sentences, I propose to take as a starting point the notion of sequencing ('and then'), which I will symbolize \( \succ \). This notion must not be confused with consequence, which involves causality. Causality is to be regarded as an independent phenomenon. Sequencing may be compared with McCawley's 'asymmetric-and' (McCawley 1971), which does not allow permutation of elements.

13.7. John washes the dishes and wipes them.
≠ John wiped the dishes and washed them.

In the above examples temporal sequences are understood. Notice that both propositions: 'John wash the dishes' and 'John wipe the dishes' are dependent on the same illocution. As with co-ordination: 'symmetric-and' (McCawley 1971) and the disjunctive or, sequencing can occur at different levels. With purely temporal interpretation, it is a sequencing of propositions:

\[
\begin{array}{ccc}
\text{Ill} & \text{Mod} & \text{Prop} \\
\cdot & \cdot & \text{past (p > p')} \\
\end{array}
\]

The next examples have more complex patterns.

13.8a. When he comes, I'll go.
   b. As soon as he comes, I'll go.

13.9a. When he comes, I'm going.
   b. As soon as he comes, I'm going.

13.10a. When he comes, I go.
   b. Whenever he comes, I go.

13.11. If he comes, I'm going.

13.12. If he comes, I'll go.

These must be analyzed as a sequencing under Mod, for example:
13.8'. Ill Mod (Prop) + Mod (Prop)
    \[ (t^\alpha / w^\alpha (\text{fut} (p))) \succ \text{fut} \cdot (\text{pres} (p')) \]
This is to be read: 'I say, it being the case that he come at future time x, then it will be the case that I go'.

The use of superscript \( \alpha \) is meant to indicate the as yet unspecified modality which is distinct from \( \prime \).

A case can be made for interpreting this \( t_1 \) as pres, because the speaker views the realization of event as part of the actual world; with if in 9 this is not the case.

Compare:

13.9a'. When he comes \( \rightarrow \) he's coming.
    b'. If he comes \( \rightarrow \) he's coming.

Two facts suggest that the correct specification of modality in the when-clause of 8a is the non-factive modality \( \prime \).

Firstly, the tense-form of the when-clause is the simple present, which sometimes has the function of an 'indefinite' or 'aorist' tense (cp. § 2.1.2); in other environments the present continuous tense-form is far more usual for future-referring utterances: he's coming (tomorrow, etc.). Moreover this simple present tense-form in if-clauses alternates with subjunctive substitute should, with at most a change in emphasis, not in cognitive meaning. In earlier forms of English, the subjunctive regularly occurred in if-clauses:

'If this be error and upon me proved ...'
(Shakespear: Sonnet 116)

In other words, we may argue that the relation:

\( \text{present continuous} \sim \text{when} + \text{simple present} \sim \text{if} + \text{simple present} \)
represents:

\[
\text{Mod} \quad \text{Prop} \quad \text{Mod} \quad \text{Prop} \quad \text{Mod} \quad \text{Prop} \\
\text{pres} \cdot (\text{fut} (p)) \sim \text{pres} \prime (\text{fut} (p)) \sim \alpha \prime (\text{fut} (p))
\]
where \( \alpha \) represents some other kind of non-factive modality. Secondly, discourse sequences which paraphrase if-sentences involve echo-questions and imperatives but not declaratives: Thus 13a and b are paraphrasable by 13a' and b' but not by 13a" and b".

13.13a. If he comes, I'll go/I'm going.
   b. If you pay me, I'll come.
   a'. Is he coming? Then I'll go/I'm going.
   b'. Pay me and I'll come.
   a". * He's coming. Then I'll go/I'm going.
   b". * You're paying me. Then I'll come.

A question intonation on: He's coming and You're paying me would change matters. The fact that declaratives with statement intonation are strange in these contexts suggest that it is right to exclude • modality.

The remaining sentences 9 - 12 may be tentatively specified as follows:

\[
\begin{align*}
13.9' & : (\text{pres} \& (\text{fut} \ (p)) \triangleright \text{pres} \cdot (\text{fut} \ (p'))) \\
13.10' & : (\text{pres} \cdot (\forall_t \ (p)) \triangleright \text{pres} \cdot (\forall_t \ (p'))) \\
13.11' & : (\cdot \ (\text{fut} \ (p)) \triangleright \text{pres} \cdot (\text{fut} \ (p'))) \\
13.12' & : (\cdot \ (\text{fut} \ (p)) \triangleright \text{fut} \cdot (\text{pres} \ (p'))) \\
\end{align*}
\]

The difference between when and as soon as in 8 and 9 is minimal: as soon as emphasizes immediacy, while when would conceivably permit a time-gap.

On 10', the specification for generic uses of when/whenever, we should note the modality, i.e. •. This is because the utterance of 10 asserts p (unlike the utterance of 8 and 9). We should perhaps also include utterances like the following:

13.14a. When he comes, I always go.
   b. Every time he comes, I go.

and:

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13.15a. If he comes, I go.
b. If at any time he comes, I go.
c. Any time he comes, I go.
d. If ever he comes, I go.

The difference between the utterances in 14 and those in 15 is reflected in two items: when(ever) vs. if and every vs. any. My specification for 10 reflects only the when(ever) - every type, which clearly view the relationship: \( p \succ p' \)
in terms of the sum of its occurrences. 10' should perhaps be restated:

13.10''. \( \pres \cdot (\forall_t (p \succ p')) \)

In the case of 15a - d the relationship is viewed in terms of an arbitrary instance. It would not, I think, be correct to analyze this, too, as a case of universal quantification (though universal quantification may be implicit). Rather we have a case of a difference in modality which I treat in terms of the modality \( \mathfrak{j} \), which I attempt to justify below. I would suggest, therefore, that 15a, when interpreted generically, has the specification.

13.15a'. \( (\mathfrak{j} (\mathfrak{t} (p))) \succ \cdot (p')) \)

and that there is translational rule corresponding to the logical equivalence (not linguistic equivalence):

\[ \mathfrak{j} (\mathfrak{t} (p)) \equiv \cdot (\forall_t (p)) \]

(I use \( \mathfrak{i} \) here not in its strict logical use but to represent individuation).

I have suggested \( \mathfrak{j} \) as the modality of if-clauses. This strikes me, after some consideration, to be intuitively a better candidate than \( \mathfrak{i} \) (perhaps with future \( \mathfrak{t}_i \) to capture the speculative nature of if-clauses). I can argue for this only by a process of elimination, not on the basis of
linguistic evidence. I assume the following premisses:  
1) it is necessary to distinguish if-clauses from when-clauses; ii) the modality of an if-clause is non-factive.  
If the specification pres \( \mathfrak{i} \) for when-clauses is correct, then if-clauses must have either fut \( \mathfrak{j} \) or some other non-factive modality, i.e. \( (\mathfrak{j}) \).

In favour of fut \( \mathfrak{i} \) are the following points: 1) we may also have counterfactual conditionals, which as I argue in § 13.3.2 involve irrealis. It is therefore possible to view 'real' and 'unreal' conditionals as future and irrealis respectively given a four point system (cp. § 2.2.5); ii) the patterning of some/any with regard to if-clauses, which closely resembles the pattern in open questions.

13.16a. Are there \( \{\text{some}\} \) books in this library?  
b. If there are \( \{\text{some}\} \) books in this library, I'll be surprised - it's a record library.

iii) there is often a possibility of paraphrasing an if-clause by means of a question - though usually an echo-question. But some if-clauses are better paraphrased by an imperative. iv) the occurrence of if in reported questions.

In favour of \( \mathfrak{i} \) are the following points: 1) the possibility of paraphrasing with imperatives. ii) the presumed historical relationship of if (\( \prec OE \) gif) to an imperative of gifan (= to give) and the contemporary use of imperative suppose and imagine as introducers of a kind of conditional (or at least hypothetical):

13.17a. Suppose she doesn't turn up - what then? (cp. What if she doesn't turn up?)  
b. And suppose she's not there ...? (cp. And if she's not there ...?)
It is, of course, conceivable that both analyses are correct (and that there is a conditional type with fut \( \text{j} \) and another with \( \text{j} \)) or that a combination of these analyses is correct with \( \text{j} \) modalizing the clause and \( \text{i} \) modalizing certain nominals to account for the occurrence of any.

Before proceeding to an examination of the types of conditional clause, I wish to point out why I exclude causality as a factor in conditionality.

There are, of course, many cases where a causal connection is understood:

13.18. Whenever [If \( \text{j} \) I clap my hands, he comes.]

A causal connection between my clapping my hands and his coming is at most inferred\(^{163}\). Only in:

13.19. He comes because I clap my hands.

is a causal connection asserted. Notice that we can question a causal connection or deny it with a conditional construction without semantic anomaly:

13.20a. Whenever it rains, I get wet - is there some reason for this/connection?
b. Whenever it rains, I get wet, but that’s because I wear so many waterproofs that I sweat too much.

I take this as sufficient evidence for excluding causality from (>).

13.1.3 Here I shall establish a number of categories of conditional clauses. I take a fairly loose definition of 'conditionality' in order to approach the data:

A complex structure where the fulfilment of one proposition (or more) is viewed as the pre-condition for the applicability or fulfilment of another proposition.
Neither causality nor the occurrence of if, as we have seen, are necessary or even sufficient conditions for conditionality. First an example of a non-conditional if-construction.

13.21. If Elizabeth was resolute for peace, England was resolute for war.

(quoted in Onions 1971)

This is paraphrasable by:

13.21'. Elizabeth was resolute for peace \{ but \}

\{ while \}

\{ whereas \}

England was resolute for war.

i.e. 'it is the case that Elizabeth was resolute for peace and it is in contrast also the case that England was resolute for war.'

Moreover the sentence can be twisted around without a cognitive meaning change:

13.21". England was resolute for war but Elizabeth was resolute for peace.

13.21"'. England was resolute for war \{ despite the fact that \}

\{ although \}

Elizabeth was resolute for peace.

Such a sentence should be analyzed:

13.21"". past \cdot ((Elizabeth resolute for peace) \wedge (England resolute for war))

with an implication:

\( \neg (\text{Elizabeth resolute for peace}) \) contrasts

(England resolute for war)

The next example we may term a 'logical' conditional:

13.22. If he's unmarried, he's a bachelor.

In this the assertion he's a bachelor follows logically from the acceptance of he's married; if a is true, then b must also be true.

Such examples are rare and confined to metalinguistic situations. If we are looking for the expression of logical necessity in natural languages (cp. § 8.3.1) then it is to be

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found in expressions which are either tautologous (as above) or else syllogistic (as below):

13.23. If footballers are dull, then JB, who is a footballer, is dull.

logically:

\[ \forall x (F_x \supset D_x) \supset (F_{jb} \supset D_{jb}) \]

In such constructions as 23 it is possible to insert it is true that or it is the case that without changing the meaning, thus:

13.22'. If it is true that he's unmarried, then (it is true that) he's a bachelor.

13.23'. If it is true that footballers are dull, then (it is true that) JB, who is a footballer, is dull.

Such sentences make claims or predictions on the basis of an assumption of truth rather than an assertion of truth. Other paraphrase possibilities are: given that, assuming (for the sake of argument) (that).

This assumption may in fact be recognized as invalid, as is witnessed by the subjunctive forms (164).

13.24a. If John were unmarried,

b. If (it were the case that) footballers were dull, then JB, who is a footballer, would be dull.

13.25a. If John had been unmarried, he would have been a bachelor.

b. If footballers had been dull (in those days), then JB, who was a footballer, would have been dull.

At this point we must take up the question of the specification of if-clauses again. If the modality is \( \downarrow \), we shall have difficulty in specifying the following types:
i. if x is ..., then x is ...
ii. if x were ..., then x would be ...
iii. if x had been ..., then x would have been ...

If the specification of the type we discussed in § 13.1.2:

iv. if x — s, then x' will —

had in fact fut $\hat{?}$ for the specification of the modality of the if-clause, we would have to find different specifications for (i) and (ii). For (i) we might have pres $\hat{?}$, but this would fail to distinguish if from when. And for (ii), we might have past $\hat{?}$, (iii) having in addition a past $t_j$ i.e. past (past (p)). And with the specification pres $\hat{?}$, there is a further problem in the shape of conditionals like:

13.26a. If he says that, he's wrong.
b. If he said that, he's wrong.
c. If he did that, he's a fool.
d. If you've done that, you're ruined.
e. If you did that, you'll be ruined.

Now here it seems we can justify an analysis of the if-clause in terms of pres $\hat{?}$, roughly 'if it is true that ...', at least in the case of (i) and (iv). In § 12.1.2 it was claimed that one specification for reported speech: (He said) the earth was flat might be past $\hat{?}$. If this is correct, then the modality of if he did that in 26c and e would have to be past $\hat{?}$, too. But this would exclude the specification past $\hat{?}$ for the if-clause of types (ii) and (iii). There is, after all, a very clear distinction between:

13.27a. If he did that, he was wrong. (165)
b. If he were to do that, he would be wrong.

If the modality $\hat{?}$ is to be maintained for if-clauses, then it is impossible to avoid introducing a fourth tense under $t_i$, namely: irrealis (166) (irr) (cp. 13.3.2). This would
then give us the specifications:

\[
\begin{align*}
\text{irr} & \quad \text{(pres (p))} \\
\text{irr} & \quad \text{(past (p))}
\end{align*}
\]

for types (ii) and (iii) respectively. Thus, to recapitulate, the corresponding \textit{if}-clause types to all four tense distinctions would be:

\[
\begin{align*}
\text{pres} & \quad \text{if he says that (, he's an idiot)} \\
\text{past} & \quad \text{if he said that (, he was an idiot)} \\
\text{fut} & \quad \text{if he says that (, I'll leave)} \\
\text{irr} & \quad \text{if he said that (, I'd leave)}
\end{align*}
\]

Alternatively if we accept that at least some \textit{if}-clauses may represent \(j\), then we could specify \textit{if he says that (,I'll leave)} and \textit{if he said that (,I'd leave)} as \(\text{(pres } j)\) and \(\text{(past } j)\) respectively. (Compare also the comments in § 11.2.5 on \textit{Would (that), etc.)}

Let me at this point introduce two further types of conditional sentence. The first may be exemplified by:

13.28. \quad \text{If he's wise, he'll come.}

This differs somewhat from the: \textit{If he comes, I'll go} type in that the protasis does not speculate. In \textit{if he comes} the speaker speculates on the pre-condition for his claim (prediction): \textit{I'll go}. In \textit{if he's wise}, he seems to be making the assumption 'he's wise' which justifies his claim: he'll come. This may just be a question of viewpoint, but viewpoint is, after all, the basis of modality. Thus we might suppose a difference in modality, more precisely in tense \((t^1)\), between these two types.

The second type involves \textit{should} in the protasis:

13.29. \quad \text{If I should see her, I'll tell her.}

On first consideration this might seem to be just a modifi-
ation of: If I see her, I'll tell her, indicating greater uncertainty about the likelihood of 'I see her' coming to be. But it has the additional property of allowing both will-future and would-conditional forms in its apodosis, cp. § 13.2.5.

13.29'. If I should see her, I'd tell her.

I have now distinguished five types of conditional if-clause. These may be grouped into: a) those which alternate with counter-factual forms (cp. 30 - 32); b) those which allow either future or conditional in the apodosis (cp. 33); c) those which have no alternation with counter-factual forms, but apparently the full system of indicative tense forms in protasis and apodosis (cp. 34 - 35). We should also add the if/whenever type discussed in § 13.1.2. I list them below with glosses:

13.30a. If John is wise, he'll come (i.e. 'assuming ...')
   b. If John were wise, he'd come.

13.31a. If John comes, he'll be welcome. (i.e. 'if it turns out ...')
   b. If John came, he'd be welcome.

13.32a. If John's unmarried, he's a bachelor (i.e. 'given ...')
   b. If John were unmarried, he'd be a bachelor.

13.33a. If I should see her, I'll tell her. (i.e. 'if it should turn out (after all) that ...')
   b. If I should see her, I'd tell her.

13.34a. If he says that, he's mad. (i.e. 'if it is true ...')
   b. If he said that, he was mad.

13.35a. If/whenever he came, he wore a hat. (i.e. 'every time ...')
   b. If/whenever he came, he would wear a hat.

On reconsidering this little taxonomy, I would suggest a further classification, namely between open and non-open-
conditions. A non-open conditional is one which involves the truth of the protasis in some way, as in 32, 34 and 35, while an open conditional involves the realization of the protasis as a precondition for the truth of the assertion of the apodosis, as in 30, 31 and 33 (168). Cross-classifying with this is, of course, the realis/irrealis distinction.

I will conclude this section on a speculative note: is it possible that the non-open/open distinction may reflect a distinction in modality, say between i and j, i.e. between 'sit' and 'esto' (169).

§ 13.2 Tense and Modality in Certain Types of Conditionals

13.2.1 The tense-form possibilities of the generic type of conditional may be summarized:

\[
\begin{align*}
\text{present protasis,} & \quad \{ + \text{ future apodosis} \} \\
\text{past protasis,} & \quad \{ + \text{ perfect} \\
& \quad + \text{ progressive} \}
\end{align*}
\]

As exemplified in:

13.36a. If (ever) he comes, \{he'll wear a hat.\}

\[\text{Whenever he comes,} \{\text{he's going to wear a hat.}\}\]

b. If (ever) he comes, \{he wears a hat.\}

\[\text{Whenever he comes,} \{\text{he's wearing a hat.}\}\]

c. If (ever) he came, \{he wore a hat.\}

\[\text{Whenever he came,} \{\text{he was wearing a hat.}\}\]

In addition would and used to may replace a past tense-form in both protasis and apodosis:

13.37a. Whenever he would come, he used to wear a hat.

\[\text{Whenever he used to come, he would wear a hat.}\]

But note that the combination would have is impossible (cp. conditional perfect in apodosis of irrealis conditionals).

13.37'. * Whenever he came, he would have already gotten drunk.

13.38. Whenever he came, he had already gotten drunk.
The following paradigms demonstrate the occurrence of modal expressions in the protasis of this type of conditional.

13.39a. If (ever) he
Whenever he
he'll
he's going to
let me know.

13.39b. If (ever) he
Whenever he
come, he lets me know.

13.39c. If (ever) he
Whenever he
come, he let me know.

(Here (= t) means that would come is equivalent to came as the overt marker of habitual action.

The most obvious restriction is on subjective epistemic interpretations, but more analytic epistemic constructions, which generally have objective interpretations, seem to be acceptable:
Whenever \( \{ \text{it is possible that he'll come} \),
\( \{ \text{it was possible that he would come} \)\),
he \( \{ \text{lets} \),
\( \{ \text{let} \) me know.

Why might should allow an epistemic interpretation is not immediately clear, especially in view of its occurrence in present and future if-clauses, where, if anything, we would expect may. But perhaps it is precisely this fact that gives a clue to its source, namely that it is independently 'conditional' (but not irrealis (cp. § 9.3.2)). Thus although normally an epistemic interpretation is not possible for the modal verbs in the protasis of conditionals, such an interpretation may be possible when the modal is the realization of the apodosis of another conditional structure of which the protasis is unexpressed. This can be made clear by the gloss: 'Whenever (it is the case that) he might come (if things work out, etc.) he lets me know'. (On the question of time reference in relation to might see § 9.3.2.)

Another pattern we should note involves the pair of semantically close modals: should ∼ ought to. Should appears to be excluded from past tense situations, but not should have (cp. § 9.5.1). Other constructions that seem to be restricted include: be capable of, be apt to, tend to, know how to, 'd better, happen, chance, be prone to, appear, seem \(^{1970}\). This restriction results from the fact thus such items are not normally capable of habitual interpretations.

The next paradigms indicate the occurrence of modals in the apodosis of 'generic' conditionals.
13.41a. If (ever) he comes in future, he
Whenever he comes, he
If (ever) he comes, he
Whenever he came, he

These paradigms suggest the following points:
1) The numerous restrictions of present interpretations of modals may have two not mutually exclusive causes: a) the lack of an iterative interpretation to the modal verb; b) the existence of a property, which we might call 'future openness', associated with come modal verbs. This might
be identical to the aspectual category 'inceptive' described in § 2.1.2. In other words, some modals, the acceptable ones in the context under consideration, include perfective aspect in their specification, while the unacceptable ones do not or are inceptive.

2) There are no epistemic interpretations with the past. These have to be realized by might have, etc. This fact is predictable from what we observed in § 9.4 on the restriction on past tense epistemic interpretations of modals.

3) Deontic should/ought to become acceptable if a perfect infinitive follows: Whenever he came, he should have worn a hat (but didn't).

4) The questionability of have got to beside have to presumably reflects the aspectual difference claimed in § 2.1.2.

5) Can and have to cannot have an epistemic interpretation (cp. § 7.1.2).

6) Must cannot have an epistemic interpretation in the future tense, unlike may. This is also predictable from what we found in § 7.1.2, namely that must is evidential.

7) The occurrence of dispositional would and will in apodosis is not paralleled in protasis (cp. habitual would). This reflects I suspect the difference in the nature of modality in apodosis and protasis: would and will are exclusively factive.

We should note finally the pattern of tense-forms in the following:
13.42a. Whenever it's possible that he'll wear a hat.
   *It will be possible that he'll wear a hat.
   \(\text{It's possible that he'll wear a hat.}\)
   \(\text{He comes (in the future), it's possible he wears a hat.}\)

b. Whenever he comes, it's possible he wears a hat.
   \(\text{It's possible that he wears a hat whenever he comes.}\)
   \(\text{Whenever he comes, it's possible that he wears a hat.}\)

c. Whenever he came, it's possible that he wore a hat.
   *It was possible that he wore a hat.
   \(\text{It was possible that he wears a hat.}\)

Not only is the tense form of \textit{it's possible} restricted to the present, it also seems to be independent of the whole conditional structure. It is cognitively equivalent to:
\[\text{If (\textit{it's possible}) whenever he comes, that he wears a hat.}\]

13.42'. \textit{It's possible} that he wears a hat whenever he comes.
\[\text{It's possible that he wears a hat whenever he comes.}\]

This is presumably a case where the whole conditional structure is within the scope of the objective modality \textit{it is possible} i.e.
\[\text{Ill Mod Prop } (\text{it is possible } \forall t_j (p > p'))\]

Notice that \textit{it is possible} may not be moved into the protasis: Whenever \textit{it is possible} that he'll come, he wears a hat requires a totally different interpretation.

13.2.2 The paradigms of what I have called the logical/deductive type may be set out as follows. To avoid repetition, I only list expected forms, i.e. obvious conditional/subjunctive forms are not included in otherwise non-conditional subjunctive environments.
13.43a. If Peter is unmarried, then he
must be a bachelor.
?may has to ?
?*can will
*shall should
ought to could
might

b. If football players are dull, then JB, who is
a football player, be dull too.

must may has to ?
?can will
*shall should
ought to could
might

In paradigms 43a and b it can be seen that epistemic and
objective deontic interpretations are favoured, while 'per-
formative' deontics and dispositionals, with ought to and
can respectively, tend to be marginal. The tautologous re-
lation between unmarried and bachelor in 43a makes 'pos-
sibility' and 'probability' modals may and should seem strange;
but this is not so much a fact about modality as about
tautologies. If one thing follows necessarily from another, it is odd to say that this is only a possible consequence. The reason can is impossible in 43a but possible in 43b is a consequence of the generic nature of the protasis. It was noted before that can may function as an indication of quantification over situations (or the applicability of a proposition to situations) (cp. § 9.3.1). 43c and d are problematic: nearly all combinations of a modal in the protasis and a non-modal declarative in the apodosis are slightly questionable. Much more acceptable are cases of parallel modality, thus:

13.43c'. If Peter [must
may
has to
?can
?*will
?*shall
?should
ought to
could
might] be unmarried, he

[must
may
has to
?can
?*will
?*shall
?should
ought to
could
might] be a bachelor.

Paradigms 43c and d also show a preponderance of epistemic interpretations, contrary to the usual pattern of modals in protases (cp. especially § 13.2.4). It is doubtful whether a deontic interpretation is consistent with the logical-deductive nature of this type of conditional.

The non-modal irrealis paradigms are:

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13.44a. If Peter [were had been] unmarried, then
    he'd be [he'd have been] a bachelor.

b. If football players [were had been] dull, then
    JB, who [is was] a football player,
    would be [would have been] dull.

The choice of tense-forms reflects a choice of pres vs.
past t\(_j\). It will be seen in § 13.2.5 that the were to
construction is common in irrealis paradigms. This I find
inappropriate here to the logical-deductive nature of the
conditional structures under examination.

The paradigms with modal verbs in the protasis are:

13.45a. If Peter \{ *should *ought to could }\(\epsilon \delta \)d\(\epsilon \delta \) be unmarried, he'd
      \{ *might ?had to }\(\epsilon \) be a bachelor.

b. If Peter \{ *should *ought to could }\(\epsilon \delta \)d\(\epsilon \delta \) have been un-
      \{ *might ?had to }\(\epsilon \) married, he'd have been a bachelor.

c. If Peter were unmarried, he
   \{ *should *ought to could }\(\epsilon \delta \) be a bachelor.
   \{ *might ?had to }\(\epsilon \) would have to\(\epsilon ?\delta \) be a bachelor.

d. If Peter had been unmarried, he
   \{ *should *ought to could }\(\epsilon \delta \) have been a bachelor.
   \{ *might ?had to }\(\epsilon \) would have to\(\epsilon \) have been a bachelor.

(cp. If Peter had been unmarried, he would have
   had to\{ be ?\epsilon \delta \}a bachelor.)

Since the paradigms with the syllogistic: If football play-
ers are dull, then JB, (etc.), is dull are to all intents
and purposes identical, I exclude them.

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In 45, even more than with their 'realis' counterparts, we find considerable restriction. Most of the items are marginal, and in particular epistemic interpretations are not possible in the protasis, unless they paralleled in the apodosis:

13.46. If Peter might be unmarried, then he might be a bachelor.

An important difference between these irrealis forms and the realis forms lies in the nature of the tense of the apodosis. The realis version of these conditionals generally has the form:

\[ \text{if } + \text{ present, then } + \text{ present} \]

which is felt to be distinct from:

\[ \text{if } + \text{ present, then } + \text{ will (future)} \]

There is only one irrealis form:

\[ \text{if } + \text{ subjunctive, then } + \text{ conditional (would)} \]

with the possible addition of a perfect form. It is arguable that:

13.47. If Peter were unmarried, he would be a bachelor.

is the irrealis form corresponding to:

13.47'. If Peter is unmarried, he'll be a bachelor.

and that:

13.48. If Peter is unmarried, he is a bachelor.

has no corresponding irrealis form. This would fit in with the distinction between open and non-open introduced in § 13.1.3. Finally, it is worth noting the pattern with regard to have to, in view of what was said on tense in § 9.5.1. The form: would have to \( V \) in the apodosis is apparently ambiguous between an epistemic and a deontic
interpretation, while the form: would have had to V is, on a preferred reading deontic and: would have to have V-en is epistemic only.

13.2.3 Non-open conditionals of the type:

13.49. If he said that, he was drunk.

tend to have either present or past tense-forms. I am not sure that:

13.50. If he'll say that, he'll say anything.

is of the same type. However, a version with be going to, which was analyzed in § 2.2.3 as pres $t_1$ with fut $t_j$ is conceivable:

13.51. If he's going to say that, he's crazy.

Such utterances offer alternatives to utterances like:

13.52a. He's crazy to say that.

b. He was crazy to have said that.

which, in contrast, accept the truth of 'he say/said that'.

It is worth mentioning that a reversal of protasis and apodosis seems more natural:

13.53a. He's crazy if he says that.

b. He's an idiot if he said that.

c. He's wrong if he's going to say that.

Illocutionarily, the apodosis seems to be a comment rather than an assertion, which may explain why interrogatives, imperatives and exclamations often appear instead of a declarative apodosis:

13.54. If he said that,

- heaven help us! (172)
- what on earth can we do?
- watch out!

Since, apart from the dubiousness of will-future forms, all tense-form possibilities, even past perfect at least narratively:
13.55. If he had said that, I was in no position to waste time.

are appropriate, I shall not attempt to specify tense-form patterns, but will turn straight to the paradigms with modal verbs:

\[
\begin{align*}
\text{may} & \quad \delta \\
\text{can} & \quad \delta \\
?\text{will} & \quad \delta \\
*\text{shall} & \quad \delta \\
\text{must} & \quad \delta \\
\text{has to} & \quad \delta \\
\text{is to} & \quad \delta \\
*\text{ought to} & \quad \delta \\
?\text{should} & \quad \delta \\
\end{align*}
\]

13.56. If he \{ \begin{align*}
*\text{might} & \quad \delta \\
\text{could} & \quad \delta \\
*\text{would} & \quad \delta \\
\text{had to} & \quad \delta \\
*\text{should} & \quad \delta \\
\text{ought to} & \quad \delta \\
?\text{was to} & \quad \delta \\
\text{was supposed to} & \quad \delta \\
\end{align*} \} do that, it's unfair.

I find it difficult to determine whether \text{will} here is dispositionally interpretable (whether as 'be willing to' or as 'persists in').

\[
\begin{align*}
*\text{might} & \quad \delta \\
\text{could} & \quad \delta \\
\text{could} & \quad \delta \\
*\text{would} & \quad \delta \\
\text{had to} & \quad \delta \\
*\text{should} & \quad \delta \\
\text{ought to} & \quad \delta \\
?\text{was to} & \quad \delta \\
\text{was supposed to} & \quad \delta \\
\end{align*}
\]

13.57. If he \{ \begin{align*}
*\text{might} & \quad \delta \\
\text{could} & \quad \delta \\
*\text{would} & \quad \delta \\
\text{had to} & \quad \delta \\
\text{should} & \quad \delta \\
\text{ought to} & \quad \delta \\
?\text{was to} & \quad \delta \\
\text{was supposed to} & \quad \delta \\
\end{align*} \} do that, it was unfair.

Could in 57 appears not to have a dispositional interpretation. This should be compared to § 9.4.2, where it was pointed out that the past dispositional interpretation of \text{could} is only possible in non-factual (or sometimes habitual) environments: be able, which is possible in factual environments, could also appear in 57: If he was able to do that, it was unfair.

It is striking that these paradigms do not permit epistemic interpretations. This may well be because judgments of probability are in commutation with judgments of truth,
which I have claimed are the essence of this type of conditional.
Since epistemic interpretations are not generally possible, it does not surprise us that forms like: may have, which (cp. § 7.2.2) are usually epistemic and can only be very restrictedly deontic, do not fit happily into the following paradigm:

13.58a. If he \{ has had to \\
\{ has been supposed to \}
*may  \\
?can  \\
*will  \\
*shall  \\
?*must  \\
?*has to  \\
*is to  \\
is supposed to  \\
ought to  \\
?should  \\
*might  \\
?*could  \\
\} do that, it's unfair.

b. If he \{ have done that, \\
\{ it's unfair. \}
*should  \\
*ought to  \\
?*must  \\
*is to  \\
*has to  \\
?*could  \\
\} have done that, it's unfair.

But as noted in § 7.2.1, adding by such-and-such a time and thus making the modal + have + infinitive future-referring, we can accept the combinations: should, ought to, be supposed to, be to, have to (173).

When modal verbs are commuted in the apodosis epistemic interpretations seem to be favoured, but this may well be a result of my choice of examples (cp. If he says that, he can think again/he ought to be hanged/he should lose his job/he's to be praised, etc. - all with deontic or dispositional interpretations).
(I have excluded will from present tense apodoseis and would from past tense apodoseis on the grounds that these would represent the form of open conditionals (cp. § 13.2.4) - in point of fact will and would are marginal even in the cases I have not excluded. It is interesting that can and have to, as against may and must, also seem to be marginal (cp. §§ 8.3.1, 9.3.1). An apodosis permitting deontic and dispositional interpretations would restore the following items to the paradigm: should, ought to, can, have to, be to and shall.)
Before leaving this type of conditional we can note that parallel modality is unusual at least in the examples discussed so far:

13.60. If he may say that, it may be unfair.
But there are other cases where parallelism seems to be possible.

13.61. If he can dance like that, he can go on the stage.

13.2.4 The pattern of tense-forms in open conditional clauses is basically:

- if + present, (then) + will (future)

for realis and:

- if + past subjunctive, (then) + would (conditional)

for irrealis (in German a past subjunctive or würde (conditional) may appear in both protasis and apodosis). Time reference (175) is indicated in the protasis:

- realis
  - be going to/
  - present progressive (optional)
  - present perfect - for past
  - were to - for future (optional)

- irrealis
  - pluperfect subjunctive - for past

and in the apodosis:

- realis
  - will-future - for future/present
  - will-future perfect - for past

- irrealis
  - would-conditional - for future/present
  - would-conditional perfect - for past

Since open conditional clauses represent the major type (at least as far as grammars are concerned - one wonders whether this is statistically justified), I have gone into
rather more detail in evaluating the paradigms. These I present in tabular form with notes. I have excluded will/would (future and conditional) forms in apodoseis, and present indicative/past subjunctive in protases, since these may be considered the base forms. Items not readily interpretable in the frame given for contextual reasons but which are acceptable in structurally comparable sentences have been marked (✓); x indicates interpretations that are excluded in the kind of structure being examined but which are attestable elsewhere; - indicates that there is no such interpretation.

In Tables XI and XII it is evident that there is some restriction on epistemic interpretations. Only modals indicating possibility and probability seem to be acceptable and then, significantly, only those which are in some way open to the future. This means that may/might and konnte appear as darf and kann, which express deontic modality. In addition German allows dürfte (wohl), which has more or less the force of English may well, as an expression of probability. Should and ought to, which we noted earlier as expressions of probability are conspicuously excluded from this interpretation here (cp. § 7.1.2).
Table XI

<table>
<thead>
<tr>
<th></th>
<th>$\epsilon$</th>
<th>$\delta$</th>
<th>$\gamma$</th>
</tr>
</thead>
<tbody>
<tr>
<td>may</td>
<td>✓</td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td>might</td>
<td>✓</td>
<td>x</td>
<td>?</td>
</tr>
<tr>
<td>can</td>
<td>x</td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td>could</td>
<td>?</td>
<td>?</td>
<td>✓</td>
</tr>
<tr>
<td>shall</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>should</td>
<td>x</td>
<td>?</td>
<td>-</td>
</tr>
<tr>
<td>If I find it,</td>
<td>b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>will</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>keep it</td>
<td>x</td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td>would</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>must</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>ought to</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>have to</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>am to</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>am supposed to</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>kann</td>
<td>?</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>könnte</td>
<td>d</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>soll</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>solle</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>darf</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>dürfte</td>
<td>f</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>Wenn ich es</td>
<td>g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>finde, so</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>werde</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>würde</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>ich's behalten</td>
<td>g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>muß</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>müßte</td>
<td>d</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>mag</td>
<td>e</td>
<td></td>
<td></td>
</tr>
<tr>
<td>möchte</td>
<td>(✓)</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>will</td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>wollte</td>
<td>g</td>
<td>x</td>
<td>-</td>
</tr>
</tbody>
</table>

a I believe the dispositional 'be able' sense of can is not acceptable here, but I'll be able to would be acceptable.

b I treat 'epistemic' shall as equivalent to will (cp. § 7.1.2). Deontic shall and will would be acceptable with II or III subjects.

c I exclude temporal interpretations of wenn.

d The addition of eigentlich improves the acceptability of these items.

e mag is a recessive item; native speakers' reactions include 'poetic', 'rustic', 'old-fashioned', 'gossipy', 'uneducated dialect'. One native speaker thought it marginally acceptable as oratio obliqua of a command, though recorded usage usually attests only present or past subjunctive of mögen.

f The addition of wohl improves the acceptability of this item with an epistemic interpretation.

g With würde and wollte, the addition of items like schon, gern or lieber improves their acceptability.
If I found it, I might keep it, (she said) i.e. found is past tense not subjunctive.

Cp. Table XI, note b. Should here is a variant of conditional would occurring in some dialects.

Although dispositional will is possible according to the preceding table; dispositional would is a past tense like was able to implying realization, not a hypothetical tense-form.

There is no exact subjunctive or conditional form of *be to* (itself a non-occurring infinitive form). The past tense form of *be to* is encountered in narrative or reported speech:

*If I saw him, I was to tell him.*

*möchte* is interpretable as an indirect command.

The dispositional interpretation of *mögen* is improved by the addition of something like *schon gern*.
This, like the exclusion of *can* from epistemic interpretations may also be connected with tense (cp. § 9.3.1). The fact that *must*, although in many cases apparently the necessity counterpart of epistemic *may*, is also excluded (as are any other items expressing necessity) is a question discussed in § 8.3.

There is some difficulty in determining the contrast in meaning, if there is one, between forms like:

13.62a. I would have to have done it.
    b. I would have had to do it.

cp.

13.63a. I would like to have seen you.
    b. I would have liked to see you.

Moreover, there are forms of marginal acceptability like:

13.62c. I'd have had to have done it.
13.63c. I'd have liked to have seen you.

There seems to be little doubt that such forms are bordering on the limits of interpretability, and native-speaker reactions and judgments are accordingly confused (176). Would have to have V-en is the irrealis counterpart of both epistemic *must* have V-en and deontic *have* to have V-en, cp.

I must have done it while going out.
≈ I'd have to have done it while going out.
I have to have done it before he returns.
≈ I'd have to have done it before he returns.

We also have a relationship, I think, between:

I'll have to do it before he comes.
≈ I'd have had to do it before he came.

which is presumably to be treated in terms of 'future-in-the-past'. Is this distinguishable from:

13.64. I'd have had to have done it before he came.
If not, we presumably have a genuine case of variance.

I turn now to the pattern of modals in protases. We should note the following points about Tables XIII and XIV.

1) As has been noted elsewhere, there are no epistemic interpretations in the probability-judgment sense involving may, must, etc. The appearance of should, were to in English and würde, sollte and marginally mag in German express certain nuances not about likelihood, but about expectations. Würde may also in the right environment, like the more restricted English would, introduce a connotation of 'preparedness' or 'willingness', especially when stressed.

2) There are practically no deontic or dispositional interpretations of the items listed in irrealis conditionals with past time reference in English, unlike German. In such cases, periphrastic modals are required, for example:

13.65. If I had been {allowed \( \backslash a \) ble \( \backslash r \) quired \( \backslash o \) bliged \( \backslash e \) tc.} to find it, I'd have ...

3) My German informants found könnte in the protasis interpretable epistemically, unlike my, and others', interpretations of either could and might in English. I strongly suspect that they interpret my suggested interpretation 'Möglichkeit' rather as: 'wenn es mir möglich wäre, es zu finden' rather than as 'wenn es möglich wäre, daß ich es finde'. This is analogous to the distinction in English (cp. Leech 1969, 1971) between:

13.66a. It is possible for me to find it.
   b. It is possible that I will find it.
Table XIII

<table>
<thead>
<tr>
<th>I</th>
<th>you</th>
<th>ε</th>
<th>δ</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>shall</td>
<td></td>
<td>-</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>will</td>
<td></td>
<td>-</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>must</td>
<td></td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>can</td>
<td></td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>may</td>
<td></td>
<td>x</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>have to</td>
<td></td>
<td>✓</td>
<td>?</td>
<td>-</td>
</tr>
<tr>
<td>would</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>ought to</td>
<td></td>
<td>-</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>could</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>might</td>
<td></td>
<td>x</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>had to</td>
<td></td>
<td>✓</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>am/are to</td>
<td></td>
<td>-</td>
<td>✓</td>
<td>-</td>
</tr>
<tr>
<td>am/are supposed to</td>
<td></td>
<td>-</td>
<td>✓</td>
<td>-</td>
</tr>
</tbody>
</table>

If {I have to} {you should}

| should     |           | ✓ | x | - |
| would      |           | x | ✓ | ✓ |
| ought to   |           | x | - | ✓ |
| might      |           | x | x | - |
| had to     |           | x | ? | - |
| were to    |           | x | ✓ | - |
| were supposed to |       | ✓ | ✓ | - |

If {I have to} {you should}

| should     |           | x | x | - |
| would      |           | x | ? | ✓ |
| ought to   |           | - | - | x |
| might      |           | x | x | - |
| had to     |           | x | ? | - |
| were to    |           | x | x | - |
| were supposed to have found it |       | ✓ | - | - |
| had had to |           | - | x | - |
| were supposed to have been supposed to | find it | x | ✓ | - |
| had been supposed to |       | x | ✓ | - |

a I include you as well as I because of the interrelation between the occurrence (and hence interpretation) of will and shall with the nature of the subject of the clause.
Table XIV

<table>
<thead>
<tr>
<th></th>
<th>c</th>
<th>d</th>
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<tbody>
<tr>
<td>werde</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>kann</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>muß</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>soll</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>will</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>mag</td>
<td>?</td>
<td>✓</td>
</tr>
<tr>
<td>darf</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>würde</td>
<td>?</td>
<td>?</td>
</tr>
<tr>
<td>könnte</td>
<td>✓ (✓)</td>
<td>?</td>
</tr>
<tr>
<td>müßte</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>sollte</td>
<td>✓</td>
<td>x</td>
</tr>
<tr>
<td>wollte</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>möchte</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>dürfte</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Wenn ich es finden

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>würde</td>
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</tr>
<tr>
<td>könne</td>
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</tr>
<tr>
<td>müßte</td>
<td>x</td>
</tr>
<tr>
<td>sollte</td>
<td>✓</td>
</tr>
<tr>
<td>wollte</td>
<td>✓ (✓)</td>
</tr>
<tr>
<td>möchte</td>
<td>x</td>
</tr>
<tr>
<td>dürfte</td>
<td>x</td>
</tr>
</tbody>
</table>

Wenn ich es hättte finden

<table>
<thead>
<tr>
<th></th>
<th>b</th>
</tr>
</thead>
<tbody>
<tr>
<td>können</td>
<td>x (✓)</td>
</tr>
<tr>
<td>müssen</td>
<td>x</td>
</tr>
<tr>
<td>sollen</td>
<td>✓ (✓)</td>
</tr>
<tr>
<td>wollen</td>
<td>✓ (✓)</td>
</tr>
<tr>
<td>mögen</td>
<td>✓ (✓)</td>
</tr>
<tr>
<td>dürfen</td>
<td>x</td>
</tr>
</tbody>
</table>

-, werde ich's behalten.

-, würde ich's behalten.

-, hätte ich's behalten.

a Cp. Table XI, note e.
b sollte here is a kind of subjunctive substitute – it denotes greater uncertainty as to realization.
c würde is a subjunctive substitute – stressing may add connotations of intention and-or willingness.
d wollte may be a stylistic variant of wäre as subjunctive substitute.
e possibly acceptable as a reported command.
f the epistemic interpretation is the past form of the subjunctive substitute sollte.
g acceptable perhaps in the sense of something befalling someone.
Notice that the former, not the latter, is possible in English conditional constructions:

13.67a. If it \{is \text{were} \} possible for me to find it, I \{'ll \text{I}'d \} keep it.

b. ?*If it \{is \text{were} \} possible that I will find it, I'll keep it.

Finally, it is worth considering the occurrence of some of the complementizing verbs I have included under the general category of 'modality verb' in § 7. For reasons of space I shall restrict myself to English and to realis forms.

In the apodosis, only a few epistemically and dispositionally interpretable items are acceptable, unlike deontically interpretable items.

13.68. If I find it,

\[
\begin{array}{l}
\text{I'd better keep it.}\\
\text{mean}\\
\text{am liable}\\
\text{am sure}\\
\text{am bound}\\
\text{am likely}\\
\text{am inclined}\\
\text{am able}\\
\text{am capable of keeping it.}
\end{array}
\]

\[
\begin{array}{l}
\text{I'll}\\
\text{be liable}\\
\text{be likely}\\
\text{be sure}\\
?\text{be bound}\\
\text{be inclined}\\
*\text{be said}\\
*\text{be prone}\\
*\text{be able}\\
*\text{be capable of keeping it.}
\end{array}
\]

There seems to be a difference between:

13.69a. If I find it, I'll be sure to keep it.

b. If I find it, I'm sure to keep it.

which may be glossed:

- 536 -
13.69a'. 'If I find it, I guarantee to keep it.'
b'. 'If I find it, it's certain I'll keep it.'

And if the form with I'll be bound is acceptable, then a similar differentiation is possible:

13.70a. ? If I find it, I'll be bound to keep it.
    '... I'll be compelled to keep it.'
b. If I find it, I'm bound to keep it.
    '... it's certain I'll keep it.'

We may also note that both the it is possible that ...
and the it is possible (for x) to ... types of modality may occur in the apodosis.

In the protasis the paradigm is as follows:

13.71. If I { ? * seem
      ? * appear
      chance
      happen
      ? * am liable
      ? * am likely
      * am prone
      * am about
      * am sure
      ? * am bound
      * am inclined (177)
      * tend
      mean
      am able
      ? am capable of finding it,
      ?'d better find it,
} to find it I'll keep it.

This paradigm bears out what we have already noted, namely that epistemic interpretations are difficult to construe in the protasis of this kind of conditional construction, except as cases of propositionalization. Many dispositional interpretations are excluded because of other factors: aspect, iterativeness, etc.

13.2.5 In both English and German there is a certain amount of variation in the surface realization of conditional clauses, though apparently usually of a stylistic or
pragmatic nature. Those that are not stylistic or pragmatic include:

1) English *were to* for the expression of future tense under Prop in counterfactuals; this is an optional replacement, since the past subjunctive/indicative form is also acceptable (178).

2) English *would* and *will* and to an extent *will/wollte, wird/würde* in German, appear in if-clauses with animate subjects and express willingness or preparedness. Note, however, that *würde* and *wollte* may be used as stylistic variants of the past subjunctive in German. Whether voluntative interpretations are linked to stress and intonation or whether they are the result of 'semanticizing' (in certain dialects) the terms in a syntactic variance relation, I cannot determine. For English it is true that *will* and *would* in if-clause are not just variants:

13.72a. If he'd apply, he'd get the job.
   If he applied, we'd be in a mess.

Since we are concerned with what the speaker desires or is prepared to accept (not what the referent of the subject of the sentence desires, etc.), we have here a case of genuine voluntative modality (cp. § 7.3.2). Of course, this 'voluntative' form is marked with respect to the base forms, i.e. past subjunctive.

3) Both English and German, though usually only in formal discourse, allow present subjunctive forms, especially of *be* and *sein*, to express a particular reservation:

13.73a. If this be so, we are all at fault.
   Wenn diese Bedingungen gegeben seien, müssen wir folgendermaßen vorgehen.
In both, the choice of the subjunctive seems to be motivated by a desire not to admit that the state of affairs referred to is or even may be the case. Compare the normal form of such non-open conditionals:

13.74a. If this is so, we are all at fault.
   b. Wenn diese Bedingungen gegeben sind, müssen wir folgendermaßen vorgehen.

where the state of affairs may be assumed to be the case. Although such distinctions are rare and very much a subject of dialect variation, it seems that should and sollte (see below) would not be used in such situations. The following example, quoted by Leech (1971) is somewhat different:

13.75. If the server serve a fault twice, he shall lose a point.

Here again we are concerned with an extremely formal style, but it seems that should could also appear instead of the subjunctive and that there is no real semantic distinction between the subjunctive and the indicative, i.e. the following are for me 'semantically equivalent':

13.76. If the server \(\{\text{serve, serves, should serve}\}\) a fault twice, he shall lose a point.

In such cases the use of should or subjunctive may be treated as stylistic variation.

As we have already noted the use of should in the protasis, at least in most cases, allows either a realis (future tense-form) or an irrealis (conditional tense-form) apodosis. This use of should however, seems restricted to cases where the time reference of the if-clause is present or future: when it is past the use of should is at least questionable:
13.77a. If I should see him, {I'll} hit him.
   b. *If I should have seen him, I'd have hit him.

One of my German informants, however, felt that:

      (cp. *If I should've found it, I'd have kept it.)

is not only acceptable but that it also introduced an element of 'chance', roughly 'wenn es mir passiert wäre, daß ich es gefunden hätte, ...'. It should be observed that this sentence is usually uttered with nuclear stress on sollen (cp. the pragmatic variation involved stressing should in: If I should see him, I'll tell him).

Stylistic variation is of two kinds:

1) English and German both allow a subject-verb inversion transformation (with simultaneous elimination of if, wenn, etc.). English only with the subjunctive auxiliaries had and were and also should:

13.79a. Had I known, I'd have acted otherwise.
   b. Were he to come, I'd not let him in.
   c. *Were I king, I'd lock 'em all up.
   d. Should I be elected, I will work for an independent Cornwall.

German, however, with indicative auxiliaries and 'lexical' verbs as well:

   b. Glaube ich ihm, so bin ich ein Idiot.
   c. Ist sie gekommen, so muß ich gehen.
   d. Wollte ich ihm glauben, würde ich mich für dumm verkaufen.

The effect of this transformation is usually to focus upon the verb and thus, as with the stressing of should noted above, to emphasize the 'openness' of the conditional - that is, its realization or reality is not to be taken as
self-evident or a foregone conclusion etc.

2) In German, and perhaps as a result of immigrant influence, in non-standard Mid-Western American speech, the past subjunctive may alternate with the conditional i.e. würde/ would + infinitive. Generally this has no semantic value, cp. would in (Standard) English, unless würde/would is focused and occurs with animate (or personified) subjects (cp. above) so that the voluntative interpretative is possible.

Variation and distinctiveness in the apodosis has been covered adequately in the preceding paragraphs, except perhaps for the occurrence of be going to. Leech (1971) notes that will and be going to cannot alternate freely:

13.81a. *If you accept that job, you're never going to regret it.
   b. If you accept that job, you'll never regret it.

   cp.

13.82a. If we carry on like this, we're going to find ourselves in difficulty.
   b. If we carry on like this, we'll find ourselves in difficulty.

Leech's explanation is that be going to may only appear in the apodosis when the protasis "mentions present circumstances". This explanation seems to be only observationally adequate - and then only in some cases. Binnick (1971) notes the occurrence of be going to with a non-restrictive conditional where the circumstances cannot be described as present:

13.83. I'm going to kill Sam, if you ask me to.

A more adequate explanation can be offered if we accept the analysis of tense set out in § 2.2.3, whereby be going
is analyzed as the fut $t_j$ of pres $t_i$ and will fut $t_i$ with fut/pres $t_j$. At least in conditional sentences, this seems to hold. Will is used when the apodosis is speculative, irrespective of whether the protasis 'mentions present circumstances' or not:

13.84. If we carry on like this, we'll be in difficulty.

be going to is used when a state of affairs is a certainty, i.e. where there is no speculation. The fact that caveat-type if-clauses appear with it indicates, however, that the conditions under which something is certain to happen may be speculated upon. The consequence of this analysis is that the protasis itself may be present or future in $t_i$, depending not on the tense of the state or event but on the view of the speaker. Compare:

\[
\begin{align*}
\text{present } t_j \text{ protasis} & \quad \text{If you're accepting} \\
& \quad \text{If you've accepted} \\
& \quad \text{If you're going to accept that job, you're never going to regret it.} \\
\text{future } t_j \text{ protasis} & \quad \text{If you accept} \\
& \quad \text{If you'll accept} \\
& \quad \text{If you've accepted} \\
& \quad \text{If you're accepting} \\
& \quad \text{If you're going to accept that job, you'll never regret it.}
\end{align*}
\]

§ 13.3 Tentatives and Irrealis

13.3.0 I would now like to turn to the question of 'tentatives' (§ 13.3.1) and the nature of irrealis (§ 13.3.2).

13.3.1 There are two distinct types of tentative utterance: 1) those which might be called 'politeness' conditionals and 2) those where the speaker does not commit himself to
the validity or truth of his proposition. (179)

Examples of the first type include:

13.85a. Could you open the door?
b. Should I open the window?
c. I wonder if I might come in?
d. Would you lend me your co-respondent's shoes?
e. You might just look in when you're passing this way.

A sub-type of this seems to include the sarcastic and-or admonishing:

13.86a. You might have done the dishes, darling!
b. You could open the door for me!

The second type includes:

13.87a. There would seem to be a mistake.
b. I'd be inclined to accept.
c. I'd hate to bother you.
d. I would hope things'll improve.
e. That'd be O.K., I think.
f. I should like to go.

and in German:

13.88a. Das ginge.
b. So was würde ich nicht tun.
c. Es wäre zu erwarten, daß sich so was anstellte.
d. Ich möchte gehen.
e. Ich hätte gern mit Ihrem Freund gesprochen.

In transformational literature such uses of the conditional (or the subjunctive) are analyzed in terms of an underlying irrealis if... then construction of which the protasis has been deleted.

There are three major objections to such an analysis.
1) It is by no means always clear what the nature of the deleted if-clause is. Although it is quite plausible that: I'd be inclined to accept, for example, could be derived from: I'd be inclined to accept if I were you (though it could equally well be derived from: I'd be inclined to accept if you were to ask me), it is difficult to establish
the kind of if-clause that has putatively been deleted in:

13.89. There would seem to be some mistake.

Leech (1971) suggests something like 'if things are as they seem', but this involves further complications, in that the expected surface tense pattern is not preserved, i.e. why '... are as they seem' instead '... were as they seem'.

This would mean not just that we might have an infinite number of deletable if-clauses, but also that their syntax would depart from what we have observed elsewhere in non-elliptical contexts. The same objections apply here as applied in § 5.2.2 to R. Lakoff's allowance of irregularity in abstract verbs. Moreover, we may often find, instead of an if-clause, that an adverbial construction like: under the circumstances, in your shoes, otherwise, an deiner Stelle, with that in mind, etc. would be more appropriate to the sense.

Does this mean that we should derive these adverbs from if-clauses, or expand the deletion rules to include certain adverbs? The question need not be answered, because the formal problems raised by the kind of analysis leading to it have already become evident.

2) It is counter-infinitive with most of the first type of tentative to suppose any kind of if-clause or circumstantial adverb.

13.90a. ?*Could I see your driver's license, if I were to be so bold.

b. ?*Should I open the window, if \{ I, you \} were to feel like it?

c. ?*You might have done the washing up, if you had wanted to help me.

(cp. You could have done the washing up, if you had wanted to help me.)
3) We still have to explain with tentatives why it is an irrealis (or apparently irrealis) form that is chosen. The choice of irrealis is semantically motivated (not syntactically). There are many cases where an irrealis statement is complete (without if-clause) while a 'realis' one is strange.

13.91. I'd hate to live in a house like that.
≠ I'd hate to live in a house like that if I had to.
(cp. I'd hate to live in a house like that - I'm glad I don't.)

The reason for choosing irrealis here is that fact that there is an entailment 'I don't live in a house like that'. We might, of course, try and justify something like:

13.91'. 'If I lived in a house like that, I'd hate it (= living in a house like that).

as the base for: I'd hate to live in a house like that,
but even this is problematic: Why hate to live in the independent form as against hate living in the conditional form? (This is perhaps less of a problem for a semantically based grammar than for a syntactically based one.) More important still, I think, is the strangeness of the realis form:

13.92a. ? I hate to live in a house like that.
  b. *I hate to live in a house like that if I have to.
  c. ? If I live in a house like that, I hate it
     (= to live/living in a house like that).
     (cp. I hate living in a house like that.)

Notice also that we cannot have a realis alternative to:

13.93a. If I were you, I'd get out quick.
  b. * If I am you, I'll get out quick.
     (cp. If I am you, and you're me, what kind of
     of laboratory is this?)

If the occurrence of irrealis is semantically motivated
anyway, what need is there for a conditional-sentence source of type 2 irrealis tentatives?

With type 1 tentatives, it is difficult even to justify even an irrealis analysis (cp. the examples under 2 above and § 9.5.1). Even if we regard their time reference as future $t_j$ an irrealis interpretation is not tenable. Leech's gloss 'contrary to expectation' for future $t_j$ irrealis conditions (Leech 1971) is not relevant: there is no expectation made. Here pragmatic features such as 'speaker's distance' play a role. This use of irrealis forms can, I suspect, only be viewed in terms of 'non-real' (as opposed to unreal) or 'ideational' (cp. the use of should in: I'm surprised she should say that. If you should see her, say hello.

13.3.2 Rejection on the one hand of a syntactic explanation for irrealis forms and on the other hand of a source of tentatives (the irrealis ones: type 2) from deleted if-clauses needs to be related to the status of irrealis as a $t_\downarrow$ category in general. The following arguments for irrealis are independent of the process-of-elimination arguments put forward in § 13.13.

In English, and to an extent in German, the past subjunctive and conditional appear to fulfil complementary functions, i.e. the past subjunctive appears in the protasis, the conditional in the apodosis. If the specification for past subjunctive, past $t_\downarrow$, is correct, then it would follow that the 'specification for the conditional would
be: past $t_i$ - taking the pattern suggested for other conditionals. This, however, is the same as the specification for past tense, so the analysis is clearly inadequate. An ad hoc solution would be to say that the specification for the conditional is a combination of a conditional structure + the past tense, i.e. the tense is modified by the presence of an if-clause. But this is again a counter-intuitive solution. Not merely morphologically but also semantically is the conditional related to the will-future. Thus in:

13.94a. If I see him, I'll come.
    b. If I saw him, I'd come.

the conditional is felt to be one remove remoter than the future (cp. Bull 1960), and historically this been expressed by the past tense-form of will. The semantic relationship between:

13.95a. I came.
    b. I would come.

is of a more complex nature - it could not be claimed that the conditional is a remoter form of the past-tense. The introduction of irr avoids the problems mentioned above (as well as providing a more acceptable analytical basis for type 2 tentatives). Assuming that we may distinguish and modality, the system may be graphically represented:

Such a system is supported by Kuryłowicz's (1964) analysis of 'tense' to the extent that it is quatripartite: my extension of it covers not just main clause 'tense' but also
non-assertive 'tense' in subordinate clauses, what we might call 'non-assertive environments' that is, environments where we may predict that a surface subjunctive might occur, not that one necessarily does^{181}. Such an analysis would also allow us to analyze may and would-optatives not in terms of present and past $t_i$ but in terms of future and irrealis $t_i$, the non-factive modality being $i$ rather than $j$.

There are two final arguments for this analysis:

1) It allows a treatment of conditional tense forms/'tentatives' that parallels that of the other major tense forms on the one hand, but on the other hand keeps them independent of conditional structures. It is observable that future, present and past tense-forms have a tendency to occur with specific time adverbials. The same is true of future, present and past tenses ($t_i$), though we also have the possibility of time-world adverbials: if vs. when in the case of future $t_i$; once, etc. in the case of past $t_j$. Irrealis, too, may occur with certain adverbials: an deiner Stelle, etc. as well as if-clauses.

2) It provides us with an alternative to introducing presuppositions. Leech 1971 notes the differences in presupposition and implication as 'contrary to expectation', 'contrary to assumption' and 'contrary to fact' for future, present and past time-referring unreal conditionals respectively. By positing irrealis we can avoid, I think, stating for every utterance the precise nature of the semantic relationship (expectation, entailment, etc.). The combination of
irrealis plus a time reference should make this predictable. We have at least a 'notational variant', if not a more adequate analysis.
14.0 Here I continue to look at the nature of modality in complex sentences. The status of subordination vis-à-vis co-ordination has, as far as I am aware, scarcely been examined within a transformational or generative framework, even though co-ordinating structures figure prominently in a number of analyses of relative clauses, which may be termed a sub-type of subordinate clause (cp. Bach 1968, Thompson 1971, etc.).

I do not propose to enter upon a detailed examination of this problem myself, but will accept that a distinction is to be made between subordination and co-ordination and will attempt a classification of the role of modality in subordinate clauses. I distinguish, too, between clauses subordinated of other clauses: temporal, local, causal, final, consecutive, concessive, conditional and comparative subordinate clauses (which, except for conditionals (cp. § 13), are discussed in §§ 14.1 and 14.2), and relative clauses, which are dependent on a nominal (except sentence relatives, which I do not discuss) — these are discussed in § 14.3.

14.1 The Role of Modality in Various Types of Subordinate Clause

14.1.0 Very often the sub-categories of subordinate clauses are not mutually exclusive: the following consecutive clause construction could be said to entail causality, if not comparativity:

14.1a. He was so angry that he turned purple.
14.1b. Because he was so angry he turned purple.
14.1c. So great was his anger that he turned purple.
Moreover, despite the fact that I claim a deep-structural distinction between co-ordination and subordination, it cannot be denied that some kind of meaning relationship exists between pairs like:

14.2a. He left because he was feeling tired.
       b. He was feeling tired, (and) so he left.

Before looking at the pattern of modality in the individual subcategories, I wish to outline an hypothesis of how the structure of discourse elements may relate to the distinction between co-ordination and subordination, and further to a distinction between integral subordination ('restrictive subordination' cp. Rutherford 1970) and non-integral subordination ('non-restrictive subordination' Rutherford 1970)\(^{(182)}\).

As examples of the three types we need to distinguish, we may take:

coop-ordination: It was a cold night, for it was already late October.
       It was a cold night, but there was no frost.
integral subordination: He left the party because it was late.
       He left the party when it got late.
       We planted flowers so the garden would look nice.
non-integral subordination: We planted flowers, so the garden soon looked nice.
       I'll be there, unless something untoward happens.

The hypothesis is that co-ordination is of the form:

\[
(\text{IIP} \text{ Mod Prop}) \mathcal{J} (\text{IIP} \text{ Mod Prop}) \ldots
\]

where \(\mathcal{J}\) stands for the set of co-ordinators. The reason for this structure is that co-ordination allows the joining of different illocutionary types:

14.3a. It was a cold night, or was it?
       b. It was a cold night, so why didn't you freeze?
       c. It was a cold night, but what a night!
Non-integral subordination is of the form:
\[ \text{Ill } [(\text{Mod } \text{Prop}) \not\in (\text{Mod } \text{Prop})] \]
and integral subordination of the form:
\[ \text{Ill } \text{Mod } [\text{Prop } ((\text{Mod}) \text{Prop})] \]
Non-integral subordination has been analyzed extensively in § 13 on conditional clauses - and it is on the basis of the analysis to be found there that I establish the structure above. Integral subordination will to an extent be discussed below. The embedding has to include Mod because, as we shall see, some integral subordinate clauses have a distinct modality. It might even be necessary to allow the embedding of \([\text{Ill } \text{Mod } \text{Prop}]\) into Prop, in order to account for complex utterances like:

14.4. I won't go to bed because if I \(\{\text{do, I shan't} \ \text{did, I shouldn't}\}\) sleep.

or:

14.5. He can't have been there because if he was, who on earth did I see fifty miles away?

14.1.1 Causal clauses appear to allow either past or present under Mod \((t_1)\):

14.6a. I \(\{\text{I'm not having} \ \text{won't have}\) anything to eat
\(\quad \text{because I'll be having dinner in an hour.}\)
\(\quad \text{**because I'll have dinner in an hour.}\)
\(\quad \text{because I'm going to have dinner in an hour.}\)
\(\quad \text{because I've already had dinner.}\)

b. I didn't have anything to eat
\(\quad \text{because I'd be having dinner in an hour.}\)
\(\quad \text{**because I'd have dinner in an hour.}\)
\(\quad \text{because I was going to have dinner in an hour.}\)
\(\quad \text{because I'd already had dinner.}\)

The reason I'll be having and I'd be having are possible
and I'll have and I'd have are strange is that the former are not predictive and may be treated as variants of I'm going and I was going. In other words, forms with future $t_i$ in the subordinate clause are excluded, but future $t_j$ and past $t_j$ seem to be possible. Similarly, when the tense of the main clause is apparently past, that of the subordinate clause is future $t_j$ or past $t_j$ with respect to the past $t_i$ of the main clause: we do not have the usual 'future-in-the-past' form I'd have. In fact, we can distinguish a tense sequence: the tense-form of the subordinate clause is a time-reference modification on the tense of the main clause but not a separate tense i.e. modality\textsuperscript{(183)}. Moreover, the future modality of the main clause does not occasion different forms in the subordinate clause but forms that are identical to those when the main clause modality has present $t_i$. This may also be seen in:

\begin{align*}
\text{As} & \{\text{since}\} \text{it will rain tomorrow} \\
\text{Seeing that it will rain tomorrow} \\
\text{As} & \{\text{since}\} \text{it's going to rain tomorrow} \\
\text{Seeing that it's going to rain tomorrow} \\
\text{we'd better drop the idea of a picnic.}
\end{align*}

We shall see below that subordination types may be divided into those that allow basically past-present $t_i$ and those that allow future-irrealis $t_i$.

It is worth noting in this connection that because-clauses refer to causes of what actually happens; in a sense, then, they are logically prior to the main assertion. The contrary case seems to be offered by integral if-clauses, which predict or conceive what will or would happen as a result of a fulfilled condition. We may compare:
14.8a. I kicked the dog because she nipped my heel.  
  b. I'm kicking the dog because she just nipped my heel.  
  c. *I'll kick the dog because she'll nip my heel.  
  d. *I'm kicking the dog because she's going to nip my heel.  

14.9a. I'll kick the dog if she nips my heel.  
  b. I'd kick the dog if she nipped my heel.  
  c. * I'd kick the dog if she's just nipped my heel.  
  d. *I'll kick the dog if she nipped my heel.  

14.1.2 Consecutive clauses: in English there is a tendency to employ so in both consecutive and final clauses (for final clauses see § 14.1.4) with the result that there is some difficulty in distinguishing the two types at a superficial level. There are, however, commutational distinctions: consecutive so that commutes with with the result that, final so that commutes to an extent with in order that and with in order and so as with infinitive construction. More interesting, however, for the present discussion are the differences in modality and subordination type. Consecutive clauses are assertive and so the verb is normally indicative with a factual interpretation. In addition the subordination is of the non-integral type, usually indicated in orthography by a comma.

14.10. We planted lots of flowers, 
  
  \[
  \begin{cases}
  \text{so (that) the garden is a blaze of colour.} \\
  \text{so the garden's going to be a blaze of colour in the summer.} \\
  \text{so the garden was a blaze of colour the following summer.}
  \end{cases}
  \]

Compare with this the final clauses:

14.11a. We planted lots of flowers so the garden 
  \[
  \begin{cases}
  \text{should} \\
  \text{would} \\
  \text{will}
  \end{cases}
  \]
be a blaze of colour.  
  
  b. We planted lots of flowers in order that the garden should be a blaze of colour.

There does not appear to be any restriction on the tense-
forms or modal verbs with regard to appearance in a consecutive clause that is imposed by the consecutive clause structure itself.

14.1.3 Local clauses: here we discover a pattern which is repeated with other subordinate clauses: namely, with past and present tense-forms indicating some kind of prior state, necessarily factive, and present tense-forms and modal verbs used as subjunctive substitutes\(^{184}\). For my examples I will take only integral subordinate clauses.

Consider:

14.12a. I found her where I'd left her.
   b. I'll find her where I left her.
   c. I've found her where I left her.
   d. ?*You'll find her where I'll leave her.
   e. You'll find her where I'm going to leave her.\(^{185}\)
   f. You'll find her where she's working.

In 12a - f, except for the dubious 12d, the truth of the proposition contained in the subordination is presupposed by the main clause. This is not, however, the case in the following set of examples:

14.13a. I'll find her wherever she is.\(^{186}\)
   b. I'll find her wherever she hides.
   c. I found her wherever she was.
   d. I found her wherever she hid/would hide.
   e. *I'll find her wherever she will be.\(^{187}\)
   f. You'll find her wherever she will hide.

In these examples there is: i) no specific reference of wherever; ii) no entailment 'she be at x'. Notice that we may have subjunctive substitute \textit{may} in such utterances:

14.13a'. I'll find her wherever she may/might be.
   b'. I'll find her wherever she may/might hide.
   c'. I found her wherever she might be.
   d'. I found her wherever she might hide.\(^{188}\)

(Here \textit{may/might} is not glossable as 'it is/was possible'.)

The subjunctive substitute \textit{should} is scarcely possible:

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14.13a". ?I'll find her wherever she should be.

14.1.4 Final clauses (purpose clauses) in English frequently involve the conjunction so that, which is also used for consecutive clauses (result clauses) (cp. § 14.1.2). Kiparsky/Kiparsky (1970) attempted to distinguish the two by means of the feature [+ FACT], final clauses being [-FACT] and consecutive clauses [+ FACT]. Apart from any doubts we may have about the adequacy (and appropriateness) of [FACT], this analysis does not seem to take account of the integral nature of final clauses as against the non-integral nature of consecutive clauses.

It will be necessary to distinguish a number of syntactic constructions and 'positive' and 'negative' semantic subtypes. The syntactic constructions are:

\[
\begin{align*}
\text{so (that} & \quad + \text{clause} \\
\text{in order that} & \quad + \text{clause} \\
\text{for fear (that)} & \quad + \text{infinitive} \\
\text{so as to} & \quad + \text{infinitive} \\
\text{in order to} & \quad + \text{infinitive} \\
\text{lest} & \quad + \text{clause} \\
\text{in case} & \quad + \text{clause}
\end{align*}
\]

The semantic division is between: so that, in order that, so as to, in order to on the one hand, and for fear that, lest, in case on the other. Lest, for example, is often claimed to be the negative counterpart of so that, i.e. so that ... not, but this only partially captures the distinction: there appears to be only a weak equivalence between lest and so that ... not\(^{(189)}\). Below is a set of paradigms for the two types. I exclude so as to since only infinitive constructions with underlying subject identical to the main clause subject are possible:
14.14a. She took a job so as to be able to afford a new car.
b.!*She took a job so as for her boy friend to be able to buy a new car.

The paradigms for the so that-type are:

14.15a. She's keeping him home so (that
   \begin{align*}
   &\text{he'll get well.} \\
   &\text{he shall get well.} \\
   &\text{he should get well.} \\
   *\text{he get well.} \\
   &\text{he gets well.} \\
   &\text{he may get well.}
   \end{align*}

   b. She's keeping him home in order that
   \begin{align*}
   &\text{he'll get well.} \\
   &\text{he shall get well.} \\
   &\text{he should get well.} \\
   &\text{he get well.} \\
   ?\text{he gets well.} \\
   &\text{he may get well.}
   \end{align*}

   c. She's keeping him home in order for him to get well.

   d. She kept him home so (that)
   \begin{align*}
   &\text{he'd get well.} \\
   &\text{he should get well.} \\
   ?*\text{he got well.} \\
   &\text{he might get well.}
   \end{align*}

   e. She kept him home in order that
   \begin{align*}
   &\text{he'd get well.} \\
   &\text{he should get well.} \\
   &\text{he get well.} \\
   *\text{he got well.} \\
   &\text{he might get well.}
   \end{align*}

In the above, I find will and would acceptable with so that, but questionable with in order that: subjunctive is possible with in order that but not so that. Interestingly, determinative shall seems to be acceptable with in order that. Both should and may seems to have neither the sense 'it is possible/would be possible that (he'll/'d get well)' nor the sense 'he is/was allowed to (get well)'. Another modal which frequently appears in such utterances is can, but this also cannot be glossed epistemically or deontically, though it can be glossed dispositionally 'is/was able to'.

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14.16a. I'm opening the door so the cat can come in.
   b. I opened the door so the cat could come in.

I give below paradigms for the _lest_-type of final clause with, for the sake of comparison, _so that_ ... _not_.

14.17a. She's keeping him home for fear he will catch cold.
         ?shall catch cold.
         should catch cold.
        catch cold.
    ?*catches cold. (190)
       may catch cold.
      ?might catch cold.

b. She's keeping him home in case he
    ?*will catch cold.
    ?*shall catch cold.
       should catch cold.
       catch cold.
    ?catches cold.
    ?may catch cold.
    ?might catch cold.

c. She's keeping him home lest he
   ?*will catch cold.
   ?shall catch cold.
       should catch cold.
       catch cold.
  ?catches cold.
 ?*may catch cold.
    ?*might catch cold.

d. She kept him home for fear he would catch cold.
       should catch cold.
     ?catch cold.
 ?*caught cold. (190)
       might catch cold.

e. She kept him home in case he
    ?would catch cold.
    should catch cold.
   ?catch cold.
     caught cold.
    might catch cold.

f. She kept him home lest he
   ?*would catch cold.
     should catch cold.
     catch cold.
      caught cold.
    ?*might catch cold.

g. She's keeping him home so that he won't catch cold.
     shan't catch cold.
     shouldn't catch cold.
  ?*not catch cold.
     doesn't catch cold.
    ?may not catch cold.
    ?*might not catch cold.

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h. She kept him home so that he wouldn't catch cold.
  shouldn't catch cold.
?*not catch cold.
didn't catch cold.
?might not catch cold.

Although the patterns established do not seem to be without their discrepancies and uncertainties\(^{(191)}\), we may register the following:

1) When \textit{may} and \textit{should} are 'subjunctive substitutes', they occur in rather different contexts, namely:

\begin{itemize}
  \item \textit{should} particularly with \textit{lest}, in order that, in case
  \item \textit{may} particularly with \textit{so that}, but probably not with \textit{lest} or \textit{in case}
\end{itemize}

We may note that \textit{may} sounds formal and a little antiquated. In this respect it may be related to the use of subjunctives in older forms of German:

\begin{itemize}
  \item 14.18. \textit{Ich schließe die Türe zu, damit er nicht herein komme.}
\end{itemize}

Such considerations do not apply to \textit{should}. In view of this, and also in view of the patterns identified in previous sections (\S\S 13.2.3 and 13.2.4), we should not be led into thinking of \textit{may} and \textit{should} as complementarily distributed realizations of the same kind of 'subjunctivity'.

2) Although the present indicative frequently appears, it is not usually matched by a past indicative when the sentence as a whole is put into the past:

\begin{itemize}
  \item 14.19a. She's keeping him home so that he gets well.
  \item b. She kept him home so that he would get well.
\end{itemize}

This suggests that we cannot view the present indicative as a marker of assertiveness. This is clearly the case with \textit{lest}, where a present subjunctive is conceivable if not exactly current idiom. The form in:
14.20. She kept him home lest he caught cold. is perhaps to be seen as a past subjunctive rather than a past indicative, op.:  

\[
\begin{align*}
&\text{14.21. She kept him home}\{ \\
&\quad \begin{cases}
*\text{so that he were out of danger.} \\
*\text{in order that he were out of danger.} \\
\text{lest he were in danger.} \\
?*\text{for fear that he were in danger.} \\
\text{in case he were in danger.}
\end{cases}
\end{align*}
\]

though I find should + infinitive more usual.

3) Modal verbs like: have to, be to, must, ought to (and in German müssen and sollen) are impossible in final clauses, but of course not impossible in consecutive clauses.

14.22a. * She hit me so that I had to flinch.
   b. * She's locking the door so that I'm not to get in.
   c. * They've given their lives so that we must live in peace.
   d. * Sie haben ihr Leben aufgeopfert, damit wir in Frieden leben solloon.

Thus, the only kind of interpretation ascribable to modal verbs in final clauses is dispositional as with can or 'subjunctive' as with may/might and should. Deontic and epistemic meanings must normally be rendered by analytic forms: it is possible ..., X is permitted ..., etc.

4) The pattern of occurrence of shall and will:

\[
\begin{align*}
\text{shall} & \quad \text{will} \quad \text{with so that} \\
\text{shall} & \quad \text{with in order that} \\
\text{will} & \quad \text{for fear (that)} \\
*\text{will} & \quad \text{with in case, lest(192)} \\
\end{align*}
\]

may reflect the varying semantic relations involved in the conjunctions that appear in final clauses.

It is, for example, possible to distinguish so that from in order that, at least intuitively: so that implies that
the state of affairs will be realized as a matter of course, while in order that emphasizes the purposiveness without viewing realization as automatic. In order that may thus also involve volition. If this is so, then it is perhaps possible to see why so that may be used in both consecutive clauses (realized state of affairs) and final clauses (unrealized state of affairs), the difference between the two types of clause resting primarily on modality (and integralness). On the other hand, in order that involving both a non-factive modality and volition does not have a counterpart in consecutive clauses.

The volition involved is, of course, that of the referent of the main clause subject, not that of the speaker, i.e. determination, which is consistent with the appearance of shall (cp. § 7.4.1). For fear that, lest, in case clearly do not involve volition (determination) on the part of the main clause subject that a state of affairs come about, on the contrary they involve a volition that the state of affairs should not come about; it is, therefore, not surprising that shall is at best questionable in the paradigms.

14.1.5 At this point it will be convenient to look at some of the consequences of the data discussed for the analysis of modality and subordinate clauses.

Unlike conditional clauses, causal clauses are asserted.

14.23a. If he stays away from work, he'll be fired.
   b. Because he stayed away from work, he's going to be fired.

23b asserts 'he stayed away from work' but 23a does not. I think, however, that there is a further distinction.
In § 13.1.2 I suggested a sequencing operator >. This is consistent with the following cases; assuming \( x > y \):

\[
\begin{align*}
& x \text{ and } y, \sim x \text{ and } y, \sim x \text{ and } \sim y \\
& \text{Excluded, however, is } x \text{ and } \sim y. \text{ In the case of causal clauses I think we have to have consistency with:} \\
& x \text{ and } y, x \text{ and } \sim y
\end{align*}
\]

but not with \( \sim x \) and \( \sim y \): I am not sure about the status of \( \sim x \) and \( y \). In other words, a because-clause may be consistent with both the truth and the falsity of the main clause, cp.

14.24a. Because he stayed away from work, he ought to be fired, but he won't be because he's the manager's son.

b. Even though he stayed away from work, he won't be fired.

In 24b we have a subordinate clause which is in fact a combination of a causal and a concessive clause (cp. 142). We may refine the definition of the sequencing operator and say that \( y \), given \( x > y \), is sufficiently conditioned, but not necessarily conditioned, by \( x \), and that \( x \) is not necessary. And we may introduce a new operator \( < \); where, given \( x < y \), \( x \) is necessary and is a sufficient but not necessary condition of \( y \). This operator may be glossed 'results in'. It will therefore treat causal clauses as cases of \( < \). The analysis of some final clauses involves both \( > \) and \( < \), as the following paraphrase of 17f suggests:

14.17f'. She's keeping him home because if she didn't he might catch cold.'

Thus for: She's keeping him home lest he catch cold, the analysis would contain the following specification:

\[
( \sim p > q) < p
\]
where \( p = 'she keep him home' \) and \( q = 'he catch cold' \).

In the case of so that ... not we could justify, I think:

\[
( \beta (\sim q) ) < p
\]

i.e. 'because not-\( q \) is desired, \( p' \), at least in the case
of She's keeping him home so that he won't catch cold. The
introduction of \( \beta \) into the specification is not without
its problems. I have some reservations about the status of
\( \beta \) as anything other than a propositional modality; its re-
lationhip to the modality \( j \), which I suggested in § 12.2.2,
remains unexplored.\(^{(193)}\)

In view of the complexity of the
phenomenon (final clauses) and the tentativeness of my
analysis, I shall not attempt to specify further examples.

§ 14.2 Modality in Negative Subordination and Concession

14.2.0 I shall continue to examine various types of sub-
ordinate clause, though with an emphasis on those that are
negative in some way, unless, concessives, etc.

14.2.1 Conditional clauses were discussed at length in
§ 13, but we can, with a view to the modality of the sub-
ordination, profitably look at unless here.

Binnick (1971) notes, in attempting to distinguish will
and be going to, that unless is doubtful when will appears
in the main clause.

14.25a. He'll break his neck \( \{ \begin{align*}
\text{if he's not careful.} \\
\text{unless he's careful.}
\end{align*} \}

\( \text{b. He's going to break his neck} \)

\( \{ \begin{align*}
\text{if he's not} \\
\text{careful.} \\
\text{unless he's} \\
\text{careful.}
\end{align*} \}

We may add further examples:
14.26a. Unless the weather breaks, 
{the picnic's 
{the picnic's going to be 
{the picnic'll be} on this afternoon.

b. ?Unless you open that door, 
{I'm going to} smash it down.

Despite Binnick's juxtaposition, unless is paraphrasable by provided (that) ... not rather than if ... not in 26a. But this doesn't work in the case of:

14.27a. I won't be happy unless you come.

b. I won't be happy if you don't come.

c. I'll only be happy if you come.

d. * I won't be happy provided you don't come.

It is difficult, however, to see in this use of unless the kind of open conditional discussed in § 13.2.4. And this is supported by the strangeness of irrealis forms, which seem normally to be possible with open conditionals.

14.28a. ?* He'd break his neck unless he were careful.

b. ?* Unless the weather were to break, the picnic would be on this afternoon.

c. ?* I wouldn't be happy unless you {came. were to come.

We may compare 28c with 28c', where the tense-form didn't come can be interpreted as an indicative:

14.28c'. I wouldn't be happy if you didn't come.

In 28c' (you come) may be entailed, in contrast to the case with: weren't to come, which must indicate a non-realized state of affairs.

14.28c". ? I wouldn't be happy if you weren't to come.

Further problems with unless become apparent when we look at other types of conditional sentence.

14.29a. If John is not married, he's a bachelor.

b. ? Unless John's married, he's a bachelor.

14.30a. If John were not married, he'd be a bachelor.

b. ?* Unless John were married, he'd be a bachelor.
29b and 30b are strange utterances; moreover they are not logically equivalent to 29a and 30a respectively. The acceptability of 29b is improved by modifying it to 29b', which is not the same type of conditional (cp. § 13.1.3).

14.29b'. Unless John's gotten married, he's a bachelor. Unless also does not fit easily into the paradigm of truth conditionals.

14.31a. ?* Unless she said that, \{ 
  she's crazy.
  she was crazy.
\}
  b. If she didn't say that, \{ 
  she's crazy.
  she was crazy.
\}

My first intuition was that unless represented a sole condition i.e. 'only if'. This patently does not work in all cases of correctly used unless.

14.32a. I won't go unless he goes.
  b. I'll only go if he goes.
  c. I won't go only if he doesn't go.
  d. I won't go if he doesn't go.

14.33a. He's going to break his neck unless he's careful.
  b. He's not going to break his neck only if he's careful.
  c. He's going to break his neck only if he isn't careful.
  d. He's going to break his neck if he isn't careful.

Though 32a and b may be cognitively equivalent, 33a and b are not, I think: being careful is a sufficient but not a necessary condition to guarantee that his neck doesn't get broken. And neither 32c nor 33c are equivalent to the respective unless forms, 32a and 33a. Even in the one case where equivalence may be established (32a and b) the pattern of negation needs explaining: why does the negation operate over the apodosis (cancelling the negation of the apodosis) rather than remain in the protasis (as in 32c)?
The fact that the negation can be 'transported' in this way may indicate that it is external to the proposition contained in the protasis, \( \sim \) under Mod.

The difference between the interpretation of if not and unless lies, I think, on further reflection, in their differing implications. In saying: If he's not careful we are not necessarily implying: he's not careful (though in practice we may often do so), while in the case of: unless he's careful, we imply: he's not careful. This might be captured in the following modality specifications.

\[
\begin{align*}
\text{if not:} & \quad \frac{1}{i} \quad (\sim p) \\
\text{unless:} & \quad \frac{\sim i}{j} \quad (p)
\end{align*}
\]

The tense-form differences noted by Binnick may also be a reflex of the implication relationship: unless \( p \rightarrow \sim p \).
If \( \sim p \) is the case, then it does not require prediction (will) to infer the outcome; the be going to form reflects 'future fulfilment of the present' (Leech/Svartvik 1975), sufficient conditions already exist.

14.2.2 Temporal conjunctions like: when, until/till, as soon as, now (that), once, as long as, after and before when subordinated of propositions having present or past as \( t_i \) may be said to be unmarked for modality: the indicative is the regular tense form:

14.34a. He kissed her when she arrived.
  b. He waited till she arrived.
  c. He kissed her as soon as she arrived.
  d. He welcomed her now that she had arrived.
  e. He left once he had locked the office up.
  f. He had been married as long as he could remember.
  g. He left after he had locked the office up.
  h. He locked the office up before he went home.

The interesting cases as far as modality is concerned are
those where the time reference of the subordinate clause is after that of the main clause and where the state of affairs denoted by the subordinate clause is unrealized. This includes: when, as soon as, till/until, before.

Onions (1971) notes that in earlier forms of NEng either the present subjunctive or shall was common in such cases, though nowadays the indicative is usual. In "future in the past" should may appear:

14.35. He determined to resign before the crash should come.

(Onions 1972)

though the indicative is again more usual nowadays.

14.36. He decided to wait till she arrived. (194)

With such 'prospective' conjunctions, there appears to be a semantic distinction which is not grammaticized in English (or in German (195)). Compare:

14.37a. Wash the dishes before she gets back.
        b. Wash the dishes, before she gets up and walks out on you.

In 37a before functions purely temporally: it is expected that 'she get back' will be realized. In 37b, however, before functions not unlike a negative final clause: 'so that ... not'. The term 'preventive' might be used for this. Here there is no actual expectation that she will walk out; her doing so is the probable consequence of not fulfilling 'wash the dishes'. (Such cases may be compared with the presumed historical development in German of temporal to conditional wenn.)

As we might expect from their nature, 'prospective' temporal conjunctions allow considerably greater modal variation
in the subordinate clause than 'non-prospective' ones.

14.38a. I phoned him as soon as the plane landed.
   ?*would land.
   ?*might land.
   could land.
   *ought to land.
   had to land.
   *should land.

b. I'll phone him as soon as the plane lands.
   ?will land.
   may land.
   can land.
   ought to land.
   ?*must land.
   has to land.
   ?shall land.
   ?*would land.
   ?might land.
   could land.
   should land.
   is to land.

c. I'll phone him before she leaves.
   ?will leave.
   can leave.
   ought to leave.
   ?*must leave.
   has to leave.
   ?shall leave.
   ?*would leave.
   ?might leave.
   could leave.
   is to leave.

d. I'll wait until she leaves.
   ?will leave.
   may leave.
   can leave.
   ought to leave.
   ?must leave.
   has to leave.
   ?shall leave.
   ?*would leave.
   might leave.
   could leave.
   should leave.
   is to leave.

I will not attempt to explain all the restrictions in the above. The following points seem to be important:

1) In 38a only non-epistemic interpretations are possible,
assuming 'was possible ... for' to be non-epistemic as I suggested in § 9.3.1. Would would be acceptable in the form would be landing, cp. the difference between will go and will be going in § 14.1.1.

2) In 38b it is difficult to get an epistemic interpretation out of may (196) but a deontic one is possible. With might an epistemic interpretation is possible, though might be landing would be preferable. With should I can get a deontic interpretation but I find it questionable whether there is a subjunctive substitute interpretation. With shall, too, I find the subjunctive substitute sense mentioned by Onions unlikely.

3) In general, non-epistemic interpretations seem to be easier to envisage than epistemic ones. Of the items which may be deontically interpreted can and have to and could seem to be by far the most natural. Must seems to be particularly difficult to find an interpretation for, except in combination with until. Should and ought to are less likely somehow with deontic interpretations than is supposed to would be.

What we have observed, namely that objective deontics are preferred in the subordinate clause, has two consequences for the analysis of temporal clauses.

The first is that the tense of the subordinate clause is conditioned by the main clause. It was claimed in § 9.3.1 that can normally represents present t^1 in contrast to may. This probably applies also to have to and be supposed to. Thus the occurrence of these forms is parallel to the
occurrence of the simple present (also normally $t_1$). Since
the tense of the subordinate clause does not appear to be
present, in that it is non-actual (cp. § 2.2.3) and since
the time-reference of the subordinate clause ($t_j$) is also
not present, the only conclusion seems to be that the tense-
forms occur as unmarked forms with respect to the tense of
the main clause. The second consequence is, epistemics and
subjective deontics being more or less excluded, that there
is no separate Mod associated with the subordinate clause.
The modal variation discernible may thus be regarded as
propositional. In all cases where a subjective deontic or
epistemic interpretation is plausible, there is, it seems
to me, a need for more context, or rather, a feeling that
part of the linguistic context has been subjected to ellipsis.

14.2.3 Concessive clauses do not seem to form a homogeneous
class in the way many of the other subordinate clause types
discussed here do. Concession appears to operate independent-
ly of clause structure, as well as in conjunction with var-
ious types of subordination: conditional, adversative, for
example. A frequent marker of concession is may, as in the
following non-subordination constructions (197):

14.39a. He may be the Vice-President, but he doesn't

have to behave like that.

b. Yes dear, he might be Lady Chatterley's lover,

but that's no reason to invite him to a

Debutantes' Ball.

c. Maybe he is Charley's Aunt; I still don't

think I want to know him.

Whether may, might and maybe can be adequately analyzed as
epistemic 'it is possible' is hard to determine. Hornby
(1954) claims that the meaning is distinct, though in such
examples a paraphrase relation between, say, 39a and 39a' or a'':

14.39a'. It's possible he is the Vice-President, but he doesn't have to behave like that.

a''. Perhaps he is the Vice-President; he doesn't have to behave like that.

is more plausible than between:

14.40a. Rich though she may be, she's still a nice person.

b. Rich though she possibly is, she's still a nice person.

If the evidence of other languages is relevant then the fact that OEEng used a subjunctive in many cases where may occurs, and the fact that German uses mögen not können (198), suggests that may is not to be analyzed as a special case of epistemic use, but rather as a 'subjunctive substitute'.

What seems to be missing from paraphrases with 'it is possible' is the illocutionary force of something like: I accept/acknowledge/concede/allow', which would suggest rather an analysis of may as a special case of performative deontic may. I shall not continue this discussion here, but will look at the paradigms involved in various types of concessive clause, where may frequently occurs.

We need first to distinguish although, even though and though from even if, which patterns essentially in the same way as if-clauses.
14.41a. Although he \{ \begin{align*} &\text{will fail} \\
&\text{is going to fail} \\
&\text{fails} \\
&\text{may fail} \\
&\text{should fail} \end{align*} \} \text{ tomorrow,} \\
\text{he can try again.}
\}

b. Although he \{ \begin{align*} &\text{knows} \\
&\text{know} \\
&\text{may know} \\
&\text{should know} \end{align*} \} \text{ the answer, he can} \\
\text{still fail.}

14.42a. Even though he \{ \begin{align*} &\text{will fail} \\
&\text{is going to fail} \\
&\text{fails} \\
&\text{may fail} \\
&\text{should fail} \end{align*} \} \text{ tomorrow,} \\
\text{he can try again.}
\}

b. Even though the \{ \begin{align*} &\text{knows} \\
&\text{know} \\
&\text{may know} \\
&\text{should know} \end{align*} \} \text{ the answer, he} \\
\text{can still fail.}

14.43a. Though \{ \begin{align*} &\text{will fail} \\
&\text{is going to fail} \\
&\text{fails} \\
&\text{may fail} \\
&\text{should fail} \end{align*} \} \text{ tomorrow,} \\
\text{he can try again.}
\}

b. Though he \{ \begin{align*} &\text{knows} \\
&\text{may know} \\
&\text{should know} \end{align*} \} \text{ the answer, he can} \\
\text{still fail.}

c. Though he \{ \begin{align*} &\text{might fail} \\
&\text{should have failed} \\
&\text{should fail} \end{align*} \} \text{ yesterday,} \\
\text{he can still try again.}
In the above only interpretations of may and should which can be called 'subjunctive substitute' are considered. In some cases an epistemic or other interpretation may be conceivable.

The mark † on subjunctive forms reflects the fact that at an earlier period, it was usual for the indicative to appear with present and past time reference, but for the subjunctive to appear when futurity was involved (cp. Onions 1971).

The fact that should in such contexts does not seem so unlikely as in past and present contexts is presumably related to this. In contemporary usage, there seems to be an opposition between an indicative form (including future time reference (t₁) be going to, rather than future modality (t₁) will) and a subjunctive substitute may (199). We may summarize these patterns.

<table>
<thead>
<tr>
<th></th>
<th>(t₁) older</th>
<th>current</th>
</tr>
</thead>
<tbody>
<tr>
<td>fut</td>
<td>subjunctive</td>
<td>be going to</td>
</tr>
<tr>
<td>pres</td>
<td>indicative</td>
<td>indicative</td>
</tr>
<tr>
<td>past</td>
<td>indicative</td>
<td>past indicative</td>
</tr>
</tbody>
</table>

With even if, the pattern is different: should is possible, but may apparently excluded. Moreover, irrealis forms are possible.

14.44a. Even if he 

\[
\begin{align*}
\text{fails} & \quad \text{failed} \\
\text{can} & \quad \text{could}
\end{align*}
\]

\{ were to fail \} tomorrow, he

\[
\begin{align*}
\text{try again.}
\end{align*}
\]

b. Even if he 

\[
\begin{align*}
\text{knows} & \quad \text{knew} \\
\text{can} & \quad \text{could}
\end{align*}
\]

\{ were to know \} the answer, he

\[
\begin{align*}
\text{still fail.}
\end{align*}
\]
c. Even if he (failed, had failed, were to have failed) yesterday, he could still try again.

14.45a. Even if he (fails, fail, *may fail, should fail) tomorrow, he can try again.

b. Even if he (*may know, knows, *should know) the answer, he can still fail.

c. Even if he (*may have failed, *might fail, should have failed, *should fail) yesterday, he can still try again.

We may summarize the pattern, ignoring irrealis forms for the moment:

\[(t_i)\]
\[
\begin{align*}
\text{fut} & \quad \text{indic present} & \approx & \text{should + infinitive} \\
\text{pres} & \quad \text{indic present} & \approx & \text{should + infinitive} \\
\text{past} & \quad \text{indic past} & \approx & \text{should + perfect infinitive}
\end{align*}
\]

We can therefore broadly distinguish the although-type of concessive associated with subjunctive substitute may and the even if-type associated with subjunctive substitute should. In view of the semantics of the two types, although concedes an assertion (without committing the speaker to its truth), while even if concedes an hypothesis, we may be justified in analyzing them as present and future (\(t_i\)) respectively, presumably with the non-factive modality \(i\) (200). This could be extended to include past and irrealis (\(t_i\)) as in 46a and b respectively.

14.46a. Although he had been there, he couldn't remember it.

b. Even if he were to see her, he wouldn't speak to her.

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There are two other kinds of concessive clause that we may briefly note: 1) the kind that combines -ever with a wh-word; 2) the adjective + as/though-construction. In both kinds the choice between indicative and subjunctive substitute may appears to be available. Moreover we find, at least in my speech, a preference for as + indicative and though + subjunctive substitute may.

14.47a. However rich she is, she is totally unspoiled.
   b. However rich she may be, she is totally unspoiled.

14.48a. Rich {as she is, as she may be}, she is totally unspoiled.
   b. Rich {though she may be, though she is}, she is totally unspoiled.

Occasionally should may be attested, not in the above examples, but in

14.49. Whatever he {does, may do, should do}, keep an eye on him.

cp.

14.50. Whatever the explanation {is, may be, *should be}, I don't want to hear it.

This supports to an extent the division into present subjunctive substitute may and future subjunctive substitute should: in whatever he should do ... we have a form which fits in with the future t₁ paradigms i.e. open if-clause and even if paradigms, while in whatever the explanation may be we have a form which fits in with present t₁ paradigms, although and non-open if-clauses.

I turn now to expressions of modality in the two types of concessive clause, although and even if. In view of the
greater semantic restrictions imposed by concessives, it proved difficult to find main clause continuations that would work in all cases. I have therefore, for reasons of simplicity and space, listed the paradigms without continuations. In judging acceptability I naturally considered a number of possible continuations. As I have already discussed subjunctive substitutes, I do not take them into account. In some cases it will be necessary to envisage different stressings, for example:

14.51a. Although he may know the answer, ...
   b. Although he may know the answer, ...

\[
\begin{align*}
\text{will} & \quad \varepsilon (= t) \quad d \\
*\text{shall} & \quad (201) \quad \varepsilon \quad d \\
\text{can} & \quad ? \delta \\
\text{may} & \quad \varepsilon \quad \delta \\
?*\text{must} & \quad \varepsilon \quad \delta \\
\text{has to} & \quad \delta \\
\text{would} & \quad \delta \\
\text{should} & \quad \delta \\
\text{could} & \quad \varepsilon \quad \delta \\
\text{might} & \quad \varepsilon \quad \delta \\
\text{ought to} & \quad \varepsilon \quad \delta
\end{align*}
\]

14.52a. Although he ...
   \{fail\} come tomorrow, ...
   \{etc.\}

\[
\begin{align*}
\text{will} & \quad \varepsilon \\
*\text{shall} & \quad \varepsilon \quad \delta \\
\text{can} & \quad \varepsilon \quad \delta \\
\text{may} & \quad \varepsilon \quad \delta \\
\text{must} & \quad \varepsilon \quad \delta \\
\text{has to} & \quad \delta \\
\text{would} & \quad \delta \\
\text{should} & \quad \delta \\
\text{could} & \quad \varepsilon \quad \delta \\
\text{might} & \quad \varepsilon \quad \delta \\
\text{ought to} & \quad \varepsilon \quad \delta
\end{align*}
\]

b. Although he ...
   \{know the answer\}
   \{be there now\} \ldots
   \{etc.\}
c. Although he has to have come etc.

d. Although he*(+)

14.53a. Even if he has to have come etc.

b. Even if he has to know the answer etc.

c. Even if he has to have come etc.
There are two important observations to be made on these paradigms.

1) Only those deontics which do not have the speaker as the presumed source of the obligation or permission, i.e. objective deontics, are readily interpretable. Logically, of course, it is impossible to concede a point without commitment to its truth (accepting something 'for the sake of argument') while at the same time attributing it to (or associating it with) oneself.

2) While certain modals permit an epistemic interpretation here, those which are only limited with regard to epistemic-ity (cp. § 7.1.2) can and have to are even less likely in concessives. This presumably is to do with their 'definitive' nature (reflected in their underlying tense), which is at odds with the equivocal nature of concessives.

14.2.4 Comparative clauses of the more/-er ... than-type are unrestricted, generally, as far as modality is concerned, though the principle of parallel modality is to an extent evident.

14.54a. ?*I drink more milk than you would
     b. ?*I drink more milk than you will.
     c. I drink more milk than you do.
     d. I drink more milk than you ever did/will.

Reversing the modality patterns yields more acceptable results:
14.55a. I would drink more milk than you do (if I could).
b. I'll drink more milk than you do.

It seems that the standard compared to normally has to be actual, i.e. present $t_1$. When this is not the case ever is normally inserted.

14.56. He's far richer than you'll ever be.

There are three cases where modality plays a more significant part: 1) rather than-clauses; 2) as if/as though-clauses; 3) too + adjective + to + infinitive constructions.

Subjunctive-substitute should or the infinitive is common in expressions like:

14.57a. Rather than (that) there should be any trouble, I'll leave.
b. Rather than cause you any trouble, I'll leave.
c. *Rather than that there is any trouble, I'll leave.
d. Rather than that there be any trouble, I'll leave.

The appearance of should (or the subjunctive) here does not seem to be essentially different from its appearance in lest-clauses. Indeed, there is an obvious semantic similarity to lest-clauses.

14.58a. I'll leave lest there (should) be any trouble.
b. I'll leave rather than that there should be any trouble.

With as if-clauses, we find both indicative and subjunctive forms:

14.59a. She looks as if she {knew \{knows\}} how to look after herself.
b. She spoke as if she {were \{was\}} ill.
The motivation for the choice seems to be that the subjunctive form more readily anticipates a denial, or is, in other words, counter-factual. In fact, however, both an indicative and a subjunctive can precede the same but-sentence.

14.59a'. She looks as if she knew how to look after herself, but she doesn't, you know.

From this we conclude that the force of as if itself is sufficient to create a non-assertive environment and the choice of indicative or subjunctive is semantically irrelevant. With modal verbs, on the other hand, we do not have the same choice. Apparently only the so-called 'subjunctive-past' forms are readily acceptable. Whether this is a reflex of the non-assertiveness I cannot determine.

Potential epistemics (\(\Box\)) and epistemic should/ought to (\(\Delta\)) are easier to interpret than must and have to.

For a clearer indication of the underlying modality of the infinitive construction: too + adjective + to + infinitive, we may make a comparison with German:

14.60a. She is too clever to make such a mistake.
   b. Sie ist zu klug, als daß sie einen solchen Fehler machen würde.

We may note weak paraphrases like:
14.61a. She {would not make, could not make} such a mistake, because she's clever.
   b. Since she's clever, she wouldn't make such a mistake.
   c. She's so clever she wouldn't make such a mistake.
   d. She's not so stupid as to make such a mistake.
   e. She's not stupid enough to make such a mistake.

Since there is an entailment in such utterances that she did not make a mistake, and since the paraphrases and the German equivalent employ a would or würden form, i.e. conditional or konjunktiv II respectively, we may term the infinitive expression 'counterfactual' and infer that its analysis includes a specification for irrealis.

§ 14.3 Modality in Relative Clauses

14.3.0 In § 14.1.0 an hypothesis was made about the nature of the distinction between co-ordination and integral and non-integral subordination in terms of the structuring of Ill and Mod. For relative clauses we shall have to make a separate hypothesis, because the same conditions clearly do not pertain. In the following I discuss only relative pronouns, leaving the somewhat problematic question of relative adverbs: the time when, the reason why, the place where, etc. aside. Nor will I discuss sentence relatives: I went there, which was a mistake.

14.3.1 The literature on relative clauses is considerable, particularly in the field of transformational grammar. It is generally accepted that relative clauses may be divided into two types: restrictive (variously termed: 'defining', 'necessary') and non-restrictive (variously termed: 'non-defining', 'non-necessary', 'appositive'), usually dis-
tinguished orthographically by the absence or presence of surrounding commas, intonationally by the absence or presence of a distinct tone group over the relative clause. It is often claimed in the later transformational literature (cp. published accounts by Bach 1968, Thompson 1971) that most relatives derive from co-ordinate structures, where certain conditions of referential identity hold between the individual items co-ordinated. Thus, according to Thompson 1971, a sentence like:

14.62. I met the girl who speaks Basque.

would be derived from approximately:

14.62'. (I met girl) (girl speaks Basque)

where the bracket combination represents the conjunction "and".

There are, however, certain difficulties with such an analysis:

1) The same structure would also be the underlying structure of:

   b. A girl I met speaks Basque.
   c. The girl I met speaks Basque.

the different surface relative patterns being dependent on pragmatic factors, i.e. the speaker's suppositions about
i) whether the hearer knows about the girl
ii) whether the hearer knows about her speaking Basque
iii) whether the hearer knows about the meeting.

But not all these surface relatives can be paraphrased by a conjoined structure:
14.64a. I met a girl and she speaks Basque. 
b. There's a Basque-speaking girl and I met her. 
c. ? The girl speaks Basque and I met her. 
d. ? I met the girl and she speaks Basque.

Neither 64c nor d, if acceptable, paraphrases the sentences with relatives in 63.

2) As pointed out by Ross (1967), conjoined expressions paraphrasing relatives embedded into questions are not acceptable:

14.65a. Is even Clarence, who is wearing mauve socks, a swinger? 
b * Is even Clarence a swinger, and he is wearing mauve socks?

Thompson (1971) cites an imperative example:

14.66a. Tell your father, who is outside, that supper is ready. 
b. * Tell your father that supper is ready, and he is outside.

but finds this no problem for the conjunction analysis, if one accepts that in the case of non-parallel conjunction the and is deleted.

3) There is a class of generic relative constructions, termed 'pseudo-relatives' in Stockwell et al. 1972, which can best be paraphrased only by if ... then ... constructions.

14.67a. Anyone who sees him should tell me. 
b. * Anyone should tell me and anyone sees/will see him. 
c. If anyone sees him he/they should tell me.

From the above it seems that though a two-clause structure may be justified for relatives, this does not entail an 'and' source. The only plausible paraphrases with and are of restrictive relatives where the relativized nominal is indefinite and of non-restrictive relatives where the conjoined elements are illocutionarily parallel, i.e. both
declarative, etc.

Moreover, the conjunction-analysis (and for that matter previous transformational analyses: Art-S, NP-S and Nom-S (cp. Stockwell et al. 1972)) is incapable of distinguishing between restrictive and non-restrictive relatives. That we need to distinguish is clear, I think, in view of the fact the two types are by no means in complementary distribution (cp. again Stockwell et al. 1972).

In § 1.1.2 I suggested that the formal apparatus of transformational grammar is inadequate for the description of all types of sentence formation process, and indicated a number of relations, among which were specification and disjunction. I claimed that specification is the relation by which, for example, the reference of a noun is more precisely defined, as in: the man over there. Whether the specification appears as premodification or post-modification in surface structure is of no consequence. In addition, I claimed that adjunction is the relationship pertaining between a sentence and a comment clause. These relations suggest themselves as analyses of restrictive and non-restrictive relatives respectively. The function of a restrictive relative clause is surely to specify the reference of a noun; that of a non-restrictive to add information to, or give a comment on, what is already adequately specified. In this respect the behaviour of what Schreiber (1972) has called "PERMANNER" adverbials, i.e. manner adverbials associated with the illocution (here 'performative') of the sentence, seems to be significant. Such adverbials may only appear in non-restrictive relatives clauses (205).
14.68a. The president, who is a crook, snubbed the ambassador.

a'. The president, who, to tell the truth, is a crook, snubbed the ambassador.

a". To tell the truth, the president, who is a crook, snubbed the ambassador.

b. The actor who's a crook snubbed the first lady.

b'. ?*The actor who, to tell the truth, is a crook snubbed the first lady. (206)

b". To tell the truth, the actor who's a crook snubbed the first lady.

We may account neatly for this phenomenon in terms of the discourse element structure posited in § 1.1.2 - provided it is correct to view expressions like to tell the truth as being intimately related to Ill as Schreiber's (1972) and Rutherford's (1970) evidence suggests. I propose then that the structure of a non-restrictive relative be represented:

\[
\begin{array}{c}
\text{[Ill } \text{Mod Prop]} \\
\text{x : [Ill Mod Prop]}
\end{array}
\]

where some nominal element x in both Σs has identical reference. For the sake of comparison, a sentence relative (ipso facto non-restrictive) may be represented:

\[
\begin{array}{c}
\text{[Ill Mod Prop]} : \text{[Ill Mod Prop]}
\end{array}
\]

On the other hand, a restrictive relative, which I claim is a type of specification, not an adjunction, could be represented:

\[
\begin{array}{c}
\text{[Ill Mod Prop]} \\
\text{(Mod Prop)}
\end{array}
\]

where two Prop's contain the same nominal x. That we cannot
suppose an independent Ill for the relative clause follows from the restriction on expressions like: to tell the truth in restrictive relative clauses. The inclusion of Mod is as yet unexplained, but its plausibility will, I hope, become apparent later.

Relativization appears in various guises in many languages (cp. Keenan 1972), but it seems to be a relatively superficial syntactic process realizing a number of semantically distinguishable relations. Before passing on to two of these: 'pseudo-relatives' § 14.3.3 and 'relative purpose-clauses' § 14.3.4, I look briefly at the pattern of modality in restrictive relatives.

14.3.2 In this section I examine the occurrence of modal verbs in restrictive relative clauses where the relativized nominal has specific reference (as opposed to non-specific reference, cp. § 14.3.3).

It seems fairly obvious that an independent subjunctive does not normally occur in a restrictive relative.

14.69a. I know the man who

b. I know the man she

taking should here only in its subjunctive substitute sense. Conditional, i.e. irrealis forms, do occur but only when an if-clause (or a counter-factual condition: otherwise) is at least inferred, if not actually present.
14.70a. I know the man who would marry her
   (if he could).
   (if she'd let him).
   (otherwise).
   etc.

b. I know the man she would marry
   (if she could).
   (if he'd let her).
   (if she had the money).
   etc.

In the following paradigms I exclude from considerations of acceptability subjunctive-substitute interpretations of should and may and conditional interpretations of would.

I also exclude past time interpretations, i.e. past in t.

\[
\begin{array}{c|cc}
\text{will} & \varepsilon & d \\
\text{shall?} & \varepsilon & d \\
\text{can} & \varepsilon & d \\
\text{may} & \varepsilon & \delta \\
\text{must} & \varepsilon & \delta \\
\text{has to} & \varepsilon & d \\
\text{would} & \varepsilon & d \\
\text{should} & \varepsilon & \delta \\
\text{could} & \varepsilon & d \\
\text{might} & \varepsilon & \delta \\
\text{ought to} & \varepsilon & \delta \\
\end{array}
\]

14.71. I know the man who

marry her.

So far as I can determine the paradigm for an object relative (i.e. object of the relative clause) shows exactly the same pattern of modality.

Although must appears not to have an epistemic interpretation in the above, it may in:

14.72. I know the man

who must have married her.

she must have married.

The patterns established are, apart from the exclusion of shall, unremarkable. In the few cases where deontic interpretations are dubious, this has to do with subjective modality. Suitable sentence frames may be constructed:

14.73. Show her the man she

must marry.

may marry.

shall marry.
The fact that relative clauses are freely modalizable suggests that they must at least lie within the scope of Mod, and, since the modality is not identical with that of the main clause, an independent Mod at that.

14.3.3 The term 'pseudo-relative' for utterances like:

14.74a. Anything he does will be wrong.
       b. Anyone who does that is crazy.
       c. Bill hires anyone who will give up liquor.
       d. Bill hires anyone he likes the look of.

(cp. Larkin 1969, Stockwell et al. 1972) is inappropriate if relativization is a relatively superficial syntactic process. The fact that the above are paraphrasable by certain kinds of generic conditional does not make them formally any less relative. The paradigms given below indicate, rather, that what is shared by this type of relative and its conditional paraphrase is to be captured in terms of a common modality source, not by deriving a relative structure from a conditional one.

14.75. Anyone who

\[
\begin{align*}
\text{does} & \quad \epsilon \quad d \\
\text{will do} & \quad \epsilon \quad d \\
\text{may do} & \quad ?\delta \quad d \\
\text{can do} & \quad ?\delta \quad d \\
*\text{shall do} & \quad ?\delta \\
\text{must do} & \quad ?\delta \\
\text{has to do} & \quad ?\delta \\
\text{would do} & \quad \epsilon \quad d \\
?\text{might do} & \quad ?\epsilon \quad d \\
\text{could do} & \quad ?\delta \quad d \\
?*\text{should do} & \\
?*\text{ought to do} & \\
?*\text{would have to do} & \\
?*\text{had to do} & \\
*\text{is to do} & \\
?*\text{Was to do} & \\
?*\text{is supposed to do} & \\
\text{did} & \\
\text{is bound to} & \quad \epsilon \\
?*\text{were to do} & \\
\end{align*}
\]

that is crazy.

The apparent exclusion of may and must from epistemic in-
interpretations is further evidenced by:

14.76. Anyone who \[
\begin{cases}
* \text{may be doing that} \\
* \text{may have done that} \\
* \text{must be doing that} \\
* \text{must have done that}
\end{cases}
\]\ is crazy.

As with some types of conditional clause, expressions associated with irrealis may also occur:

14.77. Anyone who \[
\begin{cases}
\text{did that} \\
\text{were to do that} \\
\text{had to do that} \\
\text{would do that}
\end{cases}
\]\ would be crazy.

Such examples illustrate the modality parallelism discussed in § 13.2.2. What is interesting, however, is that, with would at least, we may have a combination of irrealis and non-irrealis forms.

14.78 Anyone who would do that \[
\begin{cases}
\text{is crazy.} \\
\text{would be crazy.} \\
\text{must be crazy.}
\end{cases}
\]\ Here the occurrence of would is not explicable as a case of a voluntative interpretation 'be willing to', though this interpretation is, of course, possible. We have to conclude that it is an example of an independent irrealis form (cp. § 13.3.2).

In 75 it can be seen that there is some restriction on both epistemic and deontic interpretations. With deontics, it is again those that may indicate 'speaker's involvement' that are less easy to interpret in this kind of construction whereas can and have to are far more obvious choices. The acceptability of have to depends on its interpretation as 'internal necessity' rather than 'external necessity' i.e. necessity imposed from outside.

With epistemic interpretations the limitation seems to be such that predictive or speculative epistemicity is
interpretable (will, might, etc.), while deductive epistemicity is not (must, should, etc.).

It was claimed in § 11.3.1 that the occurrence of any is associated with a non-factive modality, presumably. This is supported by our intuitions about the any-relative: the proposition contained in the relative clause is not asserted. Saying this, however, does not mean that the proposition must be non-actual. The utterance:

14.79 Anyone who sees Peter is crazy.

may be interpreted:

14.79'. 'All people who see Peter are crazy.'
14.79". 'Any person who should go to see Peter is crazy.'

This distinction involves at least an implication relationship: 79' implies (people see Peter), if it does not entail it; 79" does not. It is possible that present vs. future times could account for this.

14.3.4 In this section I shall look at modality in what have been called 'relative-purpose clauses' and related constructions. In English we find both relative clauses and infinitive constructions with similar meaning:

14.80a. Caesar sent soldiers who were to seize the town.
14.80b. Caesar sent soldiers to seize the town.

Be to is more frequently found in such relative-purpose clauses (and in reported commands) than in other types of construction, particularly main clauses. Its interpretation involves the designation of the referent of the relativized nominal for the purpose of performing some
action. Indeed this led R. Lakoff (1968) to analyze such sentences in terms of an abstract verb \([\text{DESIGNATE}]\) (cp. § 5.2.1). Apart from doubts about the status of \([\text{DESIGNATE}]\), there are many problems with such an analysis. I discuss three points below: i) the status of 'purpose'; ii) the modality of infinitive constructions; iii) 'modal indeterminacy'.

The following sentences may all be interpreted as involving 'purpose'.

14.81a. He wrote speeches for others to give.

b. Caesar sent soldiers to seize the town.

c. He wrote it to be read.

d. I have some books to sell.

e. John is the one to see about that.

f. He painted the portrait to be hung in the gallery.

They may be paraphrased in various ways.

14.81a'. He wrote speeches which others \{\ were to \} give.

He wrote speeches so that others should give them.

He wrote speeches so that they should be given by others.

b'. Caesar sent soldiers who \{\ were to \} seize

the town.

Caesar sent soldiers so that they should seize the town.

Caesar sent soldiers so that the town should be seized.

c'. He wrote it for people to read.

He wrote it so that it should be read.

He wrote it so that people should read it.

d'. I have some books to sell.

I have some books which are \{\ to sell.\}

I have some books which are for sale.

I have some books which are to be sold.

* I have some books so that they should be sold.

e'. John is the one to be seen about that.

John is the one who you \{\ need to \} see about that.

John is the one who you \{\ are to \} see about that.

John is the one who you \{\ should \} see about that.

* John is the one so that he should be seen about that.
f'. He painted the portrait to hang in the gallery.

?*He painted the portrait which \{was to\} hang in the gallery. (207)

?*He painted the portrait which \{was to\} be hung in the gallery. (207)

He painted the portrait \{in order that\} it should \{be hung\} in the gallery.

It becomes clear that, apart from the complications involved in the active-passive alternation, we do not have a simple three-way relationship: infinitive-construction $\approx$ relative purpose $\approx$ purpose clause.

The fact that passive versions are subject to specific restrictions is presumably to be related to the behaviour of deontically interpreted modals under passivization (cp. § 8.1.2). Of 81a - f, 81d and e cannot be paraphrased by a so that/in order that-clause, although the relative-purpose construction apparently works. The reason for this may be found in the fact that these utterances do not have the canonical form of purpose clauses (cp. § 14.1.4), i.e. 'x does something with the intention of bringing some state of affairs about'; they have instead of an action a state as the denotatum of the main verb.

In addition to the purpose interpretation, 81a has another interpretation, not reflected in the relative-purpose paraphrase, where the 'purpose' is external, in other words the action of writing speeches is the result of the volition of other people, roughly:

(He wrote speeches) $<$ (others want (they give speeches))

The 'relative-purpose'-construction, moreover, is itself
ambiguous. Apart from the 'purpose' interpretation, there may also be a 'future-in-the-past' interpretation, i.e. 'He wrote speeches, which other people later gave'. Such an interpretation is perhaps clearly preferred in:

14.82. He wrote poems which were to remain obscure. The futurity involved is the 'determined future' of:

14.83. This five-year old genius was later to become the leader of the Liberal Party.

81d and e require, I think, different analyses than 81a-c and f. For 81d, an informal structure like the following may be supposed:

\[
\begin{align*}
\text{(I have} & \{\text{There are} \} \text{some books)} \\
\text{(I want} & \{\text{X} \text{ want} \} \text{(I sell books)})
\end{align*}
\]

The passive relative version of 81d: **I have some books which are to be sold** (which I find questionable as a paraphrase of 81d, anyway) may have the interpretation which is reflected by this approximate specification:

\[
\begin{align*}
\text{(I have} & \{\text{There are} \} \text{some books)} \\
\text{(I want} & \{\text{X} \text{ want} \} \text{(Y sell books})
\end{align*}
\]

where the seller is not necessarily identical with either the superficial subject or the person who wants to sell the books. We might, for example, envisage the following expansion:

14.81d". **I have some books which are to be sold at an auction next week because the owner needs the money.**

This kind of construction does not seem to involve purpose. This also applies to 81e, which also involves some complexity. It appears to presuppose: 'You/One should see someone
about that', since we may negate it and still preserve an entailment of: 'You/One should see someone, etc.' The modality, moreover, does not seem to be immediately accessible: should in the relativized version is the 'advisability' sense; \( \psi \text{be to} \) is interpretable, on the other hand, as 'designation'. Should, it strikes me, is closer to the sense of 81e than \( \psi \text{be to} \) (cp. § 7.2.2).

From the foregoing it will have been seen that the infinitive construction allows, independently of the 'relative-purpose' constructions, considerable ambiguity. I shall look now at the modality of infinitive constructions in general.

The classic transformational account of the distinction in English between infinitive and gerund constructions is that of Kiparsky/Kiparsky 1970. This treats the occurrence of the infinitive as subject to a feature \([ \neg \text{FACT}]\) on the complement S. And so far as it goes, this kind of analysis may be accepted. Kiparsky/Kiparsky's account only includes a limited number of infinitive construction types, however, and these are probably the most straightforward cases. For example:

14.84a. I want to swim.
    b. I want Mary to swim.
    c. To swim is impossible.
    d. For Mary to swim would be highly surprising.

I shall take a set of examples illustrating less straightforward cases. I give them together with a set of paraphrases.

14.85a. What's to be done.
    b. What is there to see.
    c. Somewhere to escape to ...
    d. There's nothing to be done.
    e. This is for Mary to do.

- 594 -
14.85a'. What is there to do.
a". What has to be done.
a"'. What can be done/one do.

14.85b'. What can be seen.

14.85c'. Somewhere to be escaped to ...
c". Somewhere one can escape to ...

14.85d'. There's nothing that can be done.
d". There's nothing that needs to be done/doing.

14.85e'. This to be done by Mary.
e". This can/may be done by Mary.
e"'. Mary is to do this.
e"". Mary may do this.

It may be seen that infinitive constructions may be ambiguous between a 'potential' and a 'necessitative' interpretation; 'potential' paraphrasable by can or may, 'necessitative' by Vbe to or have to. On the other hand, can, may and Vbe to (but not have to) seem to be indistinguishable in:

14.86. The reason for this {may} be found in the nature of questions.

In such cases it seems that the non-factuality is primary, the degree of modality (if there really is differentiation) secondary (cp. below).

To complete the picture we should recall the 'advisability' sense of the infinitive construction in 81e, and the factual sense in 'future-in-the-past' use, as in 83. These may be summarized:

non-factual \(\Rightarrow\) 'potential' cp. can, may, (is to + passive)

'necessitative' cp. shall, have to, is to

'advisable' cp. should, need.

factual \(\Rightarrow\) future-in-past cp. would, was to.

If it is the case that the modal differentiation of infinitives is secondary to their non-factuality, then the claim made in § 7.1.1 that the \(\Pi\)-system is dependent upon
non-factuality in Mod is corroborated. The conclusion we must draw, I think, about infinitive constructions is that they represent reductions of more explicit semantic specifications containing some variety of non-factual modality. The interpretation of the modality of infinitives seems to be a matter of preference determined by the context.
§ 15  Retrospect and Prospect
15.0  The foregoing chapters have involved extensive, and at times even diffuse, arguments of a number of kinds: on first principles, on modality proper, on related topics, on existing analyses, on points of semantic interpretation, on my own proposals for an analysis, and so on. It will, I think, be useful to summarize the results of that part of the discussion that has been concerned with establishing an integrated analysis (§ 15.1), and then to speculate upon the possible significance of this proposed analysis for future studies (§ 15.2).

§ 15.1  Towards an Integrated Analysis of Modality
15.1.1  The term 'modality', as used in the title of this thesis, was taken as a cover-term for any kind of linguistic phenomenon that stands in contrast to the nature of the 'declarative, positive, indicative' sentence-type that is generally taken to be the basis of grammatical and linguistic studies, thus 'modality' includes both 'mood' in the traditional sense and 'modality' when applied to modal verbs, modal adverbs, etc. It became clear in § 3 that such superficial linguistic phenomena involve considerable semantic overlap and that a unified analysis of 'modality' needed to establish more precise underlying categories: Ill and Mod.

I have, therefore, attempted to arrive at a unified analysis of modality phenomena (within the limits of the data) in terms of Ill, Mod and Prop. Ill, which was defined as the illocutionary function of an utterance, was
subcategorized in terms of three illocutionary types: •, ?, ! (cp. § 11.1.1). Mod, which was defined as the speaker's view of reality, likelihood, social constraints, factuality and desirability of a state of affairs, event, etc. denoted by Prop, was subcategorized in terms of tense \((t_i)\): present, future, past and irrealis (cp. §§ 2.2.3 and 13.3.2); in terms of the potentiality system \((\pi_i)\): □, V, and Δ (cp. § 7.1.1); in terms of factuality: •, £, and possibly \(j\) (cp. §§ 11.3.1 and 12.2.2); and in terms of negation: \(\sim\) (208).

The tense system I arrived at, graphically represented:

```
 pres  fut  irr
  past
```

can be said to represent various facets of the speaker's view: present is actual, future is prospective, past is retrospective and irrealis is hypothetical; present and past are real, while future and irrealis are non-real; past is the non-actual counterpart of present; irrealis the non-possible counterpart of future.

A distinction should be drawn, it seems to me, between factuality (asserting that something is the case) and factivity (cp. Kiparsky/Kiparsky 1970) (presupposing that something is the case). The latter is, on reflection, handled best as an operator within the proposition, i.e. \((\text{fact}\, (p))\). 'Counter-factuality', the term I rejected in § 13.3.2 in favour of 'irrealis', does not involve presupposition but, at most, and only in some cases,
entailment of a contrary fact. It seems to be an open question whether a counter-factual expression like: Had I known then what I know now, I'd have told a policeman is adequately specified as irrealis Mod with propositional past $t_j$, or whether the entailment of 'I did not know then what I know now' needs to be specified in some way. I have assumed the former case, though the phenomenon of 'tentatives', which are not counterfactual, may support the latter case (cp. § 13.3.1).

In § 7 I distinguished three modality systems: $\pi$, $\delta$ and $\beta$. Throughout the dissertation I have mentioned the non-factuality basic to modal modification. I have also suggested that there may be two types of non-factual operator: $\dot{j}$ and $\ddot{j}$ (corresponding very roughly to Latin sit and esto (cp. § 13.1.2). On reflection, it seems arguable that $\pi$ and $\delta$ may be associated with $\dot{j}$ and $\ddot{j}$ respectively, the actual degree of modality being given by $\Box, \bigvee$, and $\Delta$, or combinations of these with negation and tense. This would enable us to collapse the systems $\pi$ and $\delta$ into one that is neutral with respect to epistemicity and deonticity specifying simply 'degree' of modality (cp. Leech's 1969 weak and strong constraint).

Attractive though this may be, it does leave us with the problem of what to do with $\beta$. It will be recalled, however, that $\beta$ itself was problematic: it did not seem to parallel $\pi$ and $\delta$ exactly; and, as I pointed out in § 7.4.1, it very often accompanies deontic modality. The fact, however, that we may distinguish must from have to and shall from
will in terms of speaker's volition provides an argument for $\beta$ as a modality that is not purely propositional. Is it possible that, to avoid a specification of $\beta$ under Mod, some other solution to the question of speaker's volition can be found, thus allowing us to keep $\beta$ within the Prop? I leave the question open with the observation that the world-changing illocution: ! also reflects volition of some kind.

The modality system was found to involve a 'categorical' term $\Box$ as well as a potential term $\nabla$ and its modifications. $\Box$-terms, however, are still modal, I believe, since they are distinct from $\cdot$; in other words, asserting something is different from asserting the certainty of its occurrence. In § 7, it was argued that the following, rather than the system generally formulated in logical works on modality, represents better what is observable in English and German as examples of natural languages.

\[
\begin{align*}
\Pi': & \quad \Box \quad \sim \Box \\
\Pi'': & \quad \nabla \quad \sim \Delta \\
\Pi''' & \quad \nabla \quad \sim \Delta
\end{align*}
\]

In addition, there seem to be further modifications, upgraders, converting 'possible' to 'probable'; downgraders, converting 'possible' to 'conceivable', etc.

Of the various types of modality: subjective and objective epistemic, subjective and objective deontic, internal and external disposition, subjunctive substitute, I would probably assign the following to Mod: subjective epistemic, subjective deontic, subjunctive substitute. There
is a case for assigning some cases of subjective epistemic modality, perhaps and must for example, to II (cp. § 8.2.2). This would presumably require a modality marking on the III operators, i.e. ▽ for perhaps, △ for must. I shall leave this question open, but would point out that a modality marking on ! might be a way of distinguishing invitations from commands (cp. § 11.2.1).

In principle, all III and Mod operators seem to have propositional reflexes (cp. § 12.2.2). I have also argued that many cases of modality expressions (particularly the 'analytic' expressions) are cases of 'objectivized', better 'propositionalized', modality. A syntactic criterion for 'propositionalized' modality is that it may itself be modalized. A semantic criterion is that it is not the speaker's view of probability or obligation but a statement, etc. about another's view.

In § 11.3.3 I introduced a principle whereby one III can override another. This strikes me as a particularly appealing solution to the problem of utterance types that cannot be assigned unambiguously to any of the three main Ills. On the one hand, it may account for the distinction between illocutionary force and illocutionary potential; on the other hand, it reflects to an extent superficial similarities between utterances: thus, exclamations (which I have not discussed) frequently have forms that look like questions: How nice is she? vs. How nice she is! I think it is possible that even in the case of exclamations, which many have found to be resistant to analysis, the principle of
overriding may offer a promising analysis. (Under 'exclamation' here I do not include signals like: Ouch! Ugh!, which are arguably sub-linguistic.

The analysis of complex sentence-types, for which I have distinguished two relations: $>$ and $<$ (in addition to $\lor$ and $\land$), also involved modality. In the case of co-ordination we may have two distinct Ills; in the case of some types of subordination two Mods, while in other types the modality seems to operate over conjunctions, purpose clauses for example, where we may say that $\beta$ operates over $<$.

§ 15.2 **Terra Incognita**

15.2.0 Having summarized some of the main findings of the dissertation and attempted to present a somewhat more integrated picture, I should perhaps mention what this dissertation has not done.

15.2.1 When I first undertook the topic, I had intended to include a chapter setting out the semantic and pragmatic properties of each of a set of modal verbs in detail, just as writers like Joos 1964 and Ehrman 1966 attempted to do for English and Bech 1949, Welke 1965 and Bouma 1973 have attempted to do for German, inadequately as I claim (cp. § 6.1). In the end I did not attempt to do this for two reasons: i) because, rather obviously, the dissertation was becoming too long anyway and I wished to keep to my other goal of investigating modality in complex structures; ii) because it proved to be extremely difficult to do with any rigour and consistency. Some of what I exam-
ined has been mentioned in passing when I have been concerned with other problems. It seems to me on reflection, however, that the approach of isolating modal verbs and trying to specify their meaning is basically unsound. As we saw in the course of §§ 7, 8 and 9, there is not just the interaction of the type of complement involved but also the interaction of the tense-form of the complement to consider. A more promising approach would, I think, be to take a set of complete verb phrases (with temporal adverbs) including all the permutations of complement tense form and complement type (action-type) with each individual modal verb (perhaps limited to those that can only appear in verb-phrase initial position (cp. § 8.1.3), may have been singing yesterday/for two hours by then, for example, and working through their semantic relations inter se as well as their interpretations. Even this would leave out of account the modifications occasioned by complex clause structures.

Another question I have not examined is how the various systems I have distinguished can be integrated and formulated into a generative algorithm. This is clearly a complex task. On the one hand, it involves ascertaining the potentiality and the limits of combinations of the operators I have distinguished, on the other, it involves a set of natural language 'logics', of the logic of illocutions, tenses and modalities, etc. A rather obvious example is the paraphrase relation (cp. § 11.2.2) between: Go! and You will go!, which I imagine to require a translation
rule which says that, roughly: \( \text{fut} \cdot (\text{you go}) \) translates into: \( \text{j} (\text{you go}) \) and vice versa. The need for this is indicated by the predictability of such 'colloquial equivalence' in a number of languages. Prerequisites for such an undertaking would, of course, be: i) an examination of verb phrases including modality such as suggested above; ii) testing such operators as I have distinguished against the data from non-Indo-European languages; iii) presumably further clarification of the conversational aspects of pragmatics.

It is to be hoped that this dissertation has to at least cleared a small part of the ground leading towards these goals.
Notes

1. Later writers, Calbert 1975 and Newmeyer 1970 for example, produce a structured 'generative semantic' analysis, which allows, for example, can\textsuperscript{1} (= permission) to be related to can\textsuperscript{1}" (= possibility) since can\textsuperscript{1} contains can\textsuperscript{1}"; thus:
   \begin{align*}
   \text{can}^1: & \text{ (possible ()}) \\
   \text{can}^{1}": & \text{ (cause (become (possible ))})
   \end{align*}
   This kind of analysis avoids the problem of establishing different senses as discrete lexical items.

2. Apart from introductory courses in logic, I have relied mainly on Bochenski/Menne 1973 for this discussion of logical aspects of meaning. I have not employed their Polish notation, however, but have kept to the more familiar (in the Anglo-Saxon world) Peano-Russell notation.

3. In fact, the truth tables of the relation between 1.17 and 1.18 and between 1.20a and 1.20b are different. Leech's conception of expectation cannot, I think, be precise in the way he formulates it.

4. In 1.21a and 1.21b I exclude consideration of interpretations of was to where it indicates reported speech of some kind. I also exclude interpretations of be going to and their counterparts where they indicate the speaker's insistence or assurance. An utterance of the form:
   (According to what her mother told me last week), she was supposed to visit her grandma tomorrow and she's going to (if I have anything to do with it).
   is probably interpretable.

5. The following is a crude formalization of what such a semantic specification and the rules involved would look like:
   \[
   \Sigma = \begin{align*}
   & A(\text{cause (x) (come about (state}_{\text{open}}(y))))X_{\text{John}} \\
   & Y((\forall z)z_{\text{door}})
   \end{align*}
   \]
   Rule-Agent identification
   \[
   \Rightarrow A(\text{cause (come about (state}_{\text{open}}(y))))X_{\text{Ag}} Y((\forall z)z_{\text{door}})
   \]
   Rule-Affected identification
   \[
   \Rightarrow A(\text{cause (come about (state}_{\text{open}})))X_{\text{Ag}} Y_{\text{Aff}} (\forall z)z_{\text{door}}
   \]
   Rule-Topicalization
   \[
   \begin{align*}
   & \begin{cases}
   \Rightarrow x_{\text{Top}} A(\text{cause (come about (state}_{\text{open}})Y_{\text{Aff}} (\forall z)z_{\text{door}}) \\
   Ag \text{ John}
   \end{cases} \\
   \text{(topicalization of Agent)}
   \end{align*}
   \]
   \[
   \begin{cases}
   \Rightarrow y_{\text{Top}} A(\text{cause (come about (state}_{\text{open}})X_{\text{Ag}}} (\forall z)z_{\text{door}}) \\
   Aff (\forall z)z_{\text{door}}
   \end{cases} \\
   \text{(topicalization of Affected)}
   \]
Topicalization can give two distinct derived semantic specifications which, after various other rules have applied (Verb formation, Definite article formation, etc.) may be mapped into active and passive syntactic structures respectively.

6. Again a crude formulation (ignoring tense):

\[ \Sigma = \mu('\text{determined}' \quad \gamma \quad (p))\{ A_{\text{movement}} \xrightarrow{\text{go}} \text{John} \} \]

\[ \Sigma' = \mu('\text{required}' \quad \gamma \quad (p'))\{ A'_{\text{movement}} \xrightarrow{\text{gehen}} \text{John} \} \]

'determined' \quad \text{p} \quad \xrightarrow{\text{realized p}} \quad \text{realized p}

'required' \quad \text{p} \quad \xrightarrow{\text{realized p}} \quad \text{realized p}

In order to identify \( \Sigma' \) as a translation of \( \Sigma \) (and vice versa), we need first to be able to equate \( A' \) and \( A \). For this there would have to be a rule stating roughly:

**Rule**

**Identical term substitution**

\[ \ldots \alpha \ldots \Rightarrow \ldots \alpha' \ldots \]

Condition: denomination of \( \alpha \) = denomination of \( \alpha' \)

The approximation of \( \mu \) and \( \mu' \) is a little more difficult. For this we need to know the exact difference between \( \mu \) and \( \mu' \) and establish that there is no identical term and no closer approximation. This, very tentatively, might be expressed:

**Rule**

**Similar term substitution**

\[ \ldots \alpha \ldots = \ldots \alpha' \ldots \]

Condition: there is one property \( f \) which stands in an identifiable semantic relation to \( \alpha \) but not to \( \alpha' \), and \( \alpha' \) is consistent with \( f \).

Such a rule would state that 'be to may be replaced by sollen if sollen and be to are minimally distinct and if sollen does not exclude the possibility of what 'be to implies (the minimal distinction).

7. Cp. I did the ironing last night, which entails I finished doing the ironing last night, since there is something odd about: "I did the ironing last night but didn't finish it. On the other hand, I was doing the ironing last night but didn't finish it (because the fuse went, etc.) or I tried to do the ironing last night/I tried to get the ironing done last night but didn't finish it seem to work.

8. The distinction between: John is going to France tomorrow and John is about to go to France may be classified as a further aspectual distinction between inceptive and prospective, as Professor Lyons has pointed out to me.

9. Compare the occasional German plus-pluperfect (Vorvorvergangenheit) occurring apparently only with stative meaning:

\[ \text{Sie war zurückgekommen. Sie hatte schon ein gutes Ende zurückgelegt gehabt.} \]


10. It should be emphasized that \( t_j \) refers to conceptual time, not actual time. Thus 'future \( t_j \)' means future-time within the speaker's
conceptual world; future $t_i$ does not necessarily involve future time with respect to $t_o$, e.g. He'll have been working hard said as a prediction, where $t_j$ is past with respect to $t_o$, but $t_i$ is future.

11. In both English and German there is a tendency to lose the infinitive particle to and zu under certain conditions:

**Ellipsis:** Ought you to go? Yes, I ought (to).

\text{cp.: Do you want to go? Yes, I want to.}

*I want.

I do.

**After negatives:** Oughtn't you (to) be going?

Du brauchst nicht (zu) gehen.

You oughtn't (to) go.

In other words ought and brauchen are gradually being syntactically recategorized.

On the other hand, of course, the infinitive construction after modal verbs is historically a nominalized verb form i.e. gerund.

12. **Lassen** in German has a causative sense 'make' and a permissive sense 'let'. Moreover, the form in: Das läßt sich regeln is interpretable as possibility i.e. 'That can be sorted out'.

13. Cp. Fijian *rawa* 'obtain/get' —— 'can/could/be able' (Milner 1956)

Vietnamese *đtác* 'get/receive' —— 'be able/physically possible' (Thompson 1965)

Thai *dai*¹ 'get/receive' —— 'be able' (Lanyon-Orgill 1955)

Welsh *cael* 'get/receive' —— 'be allowed to' (Bowen/Rhys Jones 1960)

**English get in:** Did you get to ride the donkey?

14. As examples we could take:

**Norwegian:**

<table>
<thead>
<tr>
<th>vil</th>
<th>will, want, would like, wish, would</th>
</tr>
</thead>
<tbody>
<tr>
<td>skal</td>
<td>shall, be to, be supposed to, should</td>
</tr>
<tr>
<td>kan</td>
<td>can, be able, may, know how to</td>
</tr>
<tr>
<td>må</td>
<td>must, have to, (may)</td>
</tr>
<tr>
<td>bør</td>
<td>ought</td>
</tr>
<tr>
<td>tør</td>
<td>dare, might, may</td>
</tr>
<tr>
<td>få</td>
<td>get, had better, may/might, be able, manage, 'futurity'</td>
</tr>
</tbody>
</table>

**Czech:**

<table>
<thead>
<tr>
<th>chtit</th>
<th>want, wish</th>
</tr>
</thead>
<tbody>
<tr>
<td>moci</td>
<td>can, may</td>
</tr>
<tr>
<td>umět</td>
<td>know how to, be able</td>
</tr>
<tr>
<td>můžet</td>
<td>be allowed to, may</td>
</tr>
<tr>
<td>musí</td>
<td>must, have to</td>
</tr>
<tr>
<td>mít</td>
<td>be to, be supposed to</td>
</tr>
</tbody>
</table>

**Welsh:**

<table>
<thead>
<tr>
<th>rhaid</th>
<th>must, necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>dylwn</td>
<td>ought</td>
</tr>
<tr>
<td>gallu</td>
<td>can, may, possibility</td>
</tr>
<tr>
<td>medru</td>
<td>can, may, possibility</td>
</tr>
<tr>
<td>cael</td>
<td>get, be able, permission</td>
</tr>
<tr>
<td>eisiau</td>
<td>need, want</td>
</tr>
</tbody>
</table>

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\[ - 607 - \]
and in Romance:

**French:**
- savoir: know, know how to, be able
- pouvoir: can, be able
- se pouvoir: may, can
- falloir: have to, must, need
- devoir: have to, must, ought to
- vouloir: want, wish

**Portuguese:**
- haver/ter de: have to

**Italian:**
- solere: be wont to, will/would, used to

15. A use of a different order that we might include is 'rhetorical' use. I have noticed during the writing of this thesis that I have frequently employed formulas where in fact the modality is arbitrary. For example:

   a. What conclusion should we draw from this?

   Here I could have substituted a number of other modal verbs: may, can, might, are ... to, ought ... to, even do ... need to without markedly changing sense. But, of course, shall, will, must would have changed the sense. Another example:

   b. This verb may also appear in the passive.

   Here can would also be possible. The sense of may, however, is not 'it is possible' but rather 'is allowed to', but where in reality does the authority lie? With the syntactic system?

   a is clearly an example of a modal used to indicate a constraint that is adopted, i.e. imagined for rhetorical purposes. In the case of b, we may have the subscription of authority to something inanimate, a grammatical system; or we may have a situation where I, as speaker, may be assuming an authority over the syntactic system that I clearly do not have in reality - the grammarian as controller. Perhaps this is similar to the role of story-teller.

16. In Modern Greek the future marker ὧ (which has developed out of volitional ἐγὼ ἔρων ἐγὼ ἔρων ἐγὼ = 'I want'; νὰ is a complementizing particle used typically with purpose clauses, etc.) may occur with past and past perfect tense-forms with approximately the meaning of epistemic 'must' or 'must have' respectively. It is worth noting that French, too, tends to express what is in English a necessary deduction expressed by must by means of the future: ἢσε ἑγαρὲ 'he'll have lost his way', he must have lost his way'.

   Compare also the use of future and future perfect in Urdu (Grahame Bailey 1950) as "present presumptive" and "past presumptive" respectively. Thus vol ḍha hoga can mean: 'he'll be escaping', 'no doubt he's escaping'; and voh ḍha hoga can mean: 'he'll have escaped', 'no doubt he's escaped' or 'I suppose he's escaped'.

   This kind of correspondence between tense and epistemic modality may be seen as support for the kind of analysis I am suggesting where tense and epistemic modality are both included under the Mod node.

17. The Chinese system of modals, at least according to the accounts
given in Piasek 1956 and Chao 1968, does not reveal any greater divergence from the kind of meaning parameter I tentatively set up in § 3.2.2 than most Indo-European languages. Perhaps the most remarkable things about the Chinese system are: 1) its profusion (given Chao's syntactic definition of auxiliary - a large number of these items cover dispositional senses); 2) the frequency of double negation giving a logical positive, f. ex.

<table>
<thead>
<tr>
<th>kee, yil</th>
<th>bukeet(yil) bu</th>
</tr>
</thead>
<tbody>
<tr>
<td>'may/be permitted'</td>
<td>'must/will have to'</td>
</tr>
<tr>
<td>der</td>
<td>buder bu</td>
</tr>
<tr>
<td>'may/get to/be able'</td>
<td>'can't but'</td>
</tr>
<tr>
<td>pah</td>
<td>buhah bu</td>
</tr>
<tr>
<td>'be afraid to'</td>
<td>'be sure to'</td>
</tr>
</tbody>
</table>

18. cp. Appolonious Dyscolus' psykhikai diathesiseis
19. = Beauzée's suppositive
20. cp. also Wackernagel 1920:
"Der Unterschied der Modusformen bezieht sich auf das Verhältnis der Tätigkeit zur Wirklichkeit; der größere oder geringere Grad der Wirklichkeit wird zum Ausdruck gebracht, woraus eigentlich folgt, daß unbestimmt viele Modi denkbar sind. Die Beschränkung auf drei oder vier Modi, die wir treffen, ist, wenn man will, zufällig und willkürlich." (p. 210)
21. Jespersen in fact attacks Sonnenschein 1921. I have referred to Sonnenschein 1927, where his views are set out in considerably more detail.
22. cp. p. 27:
"What is called a mood in the proper or narrow sense is the subjective attitude of the speaker with regard to the utterance as reflected in the constitutive member of the sentence, the verb."
23. "delocution" coincides with Boyd/Thorne's STATE, while "locution" coincides with their IMP
24. cp. also:
"For objective psychology, moods are nothing but particular response-patterns or speech-community styles of utterance. It is probably because of the slight role that speech situations play in the thinking of grammarians that we find so many difficulties and irrationalities in the grammar of mood."
(Kantor 1952, p. 290)
25. Or, adopting McCawley's 1968b and Postal's 1967 proposal that 1st and 2nd person pronouns be derived from deep structure indefinites:

\[
S \left[ \text{somebody}_1 \right] \left[ \left[ +V \ \text{somebody} \right] \left[ \left[ ... \right] \right] \right] \left[ \left[ +\text{performativ} \ +\text{communication} \ +\text{linguistic} \ +\text{declarative} \right] \left[ +V \right] \left[ \left[ VP \right] \left[ VP \right] \right] \right]
\]
This actually would be a preferred analysis in view of the exist-
ence of non-first person performatives:
The chair demurs.

26. It is interesting that in English a performative appears in the simple present, which is normally reserved for stage directions, commentaries with verbs that are non-stative and not verbs of mental process. This use is typically perfective as defined in § 2.1.2. The fact that performatives achieve something may explain their tense form. (The situation in Russian, where performatives are 'imperfective' in form, is not comparable - the function of Russian 'present perfective' is a complex of time reference (future) and aspect.

27. It might be argued that this objection is loaded in favour of a logical point of view. And that Householder's use of "assertion" should be interpreted rather as "statement" (or even "proposition") with the presence or absence of Q indicating the speaker's acceptance or doubt with regard to the "assertion", an expression of doubt being tantamount to a question. I do not find this interpretation quite plausible. It should be remembered that Q in Householder's rules modifies an illocution. Thus "assertion" has illocutionary status. My own analysis (cp. § 11.3) is that Q itself has illocutionary status and thus should appear as an expansion of the Ill node. It is, I think a confusion of attitude (cp. my definition of Mod §§ 1.1.1, 7.4.2) with illocution to equate the expression of doubt with asking a question. There is, to be sure, a relationship between them: the rising intonation contours they both generally occasion may be taken as indicative of this (cp. English low-rise on yes-no questions and fall-rise on dubitative statements, cp. § 3.1.4); but doubting does not necessarily entail asking a question, and asking a question (cp. the examination situation) does not entail doubt.

28. The "OR" here is my interpolation. Householder doesn't specify what kinds of conjunction he envisages. "AND" might be possible, "OR" would make more sense (cp. Stockwell et al. 1972 on questions.).

29. It would not, I maintain, be sufficient (for semantic reasons) to introduce tag-questions by transformational rules. After all, one type of tag-question does have the illocutionary force of a question. Wouldn't this mean that Q would have to be introduced by T-rule too? i.e. would have two sources. Or alternatively, wouldn't it mean that the rule of tagging would have to operate on both statements and questions (structures with and without Q) in order to account for the two types of tag in 5.39'? Formulation of such a rule might prove to be impossible in view of the existence of the rule of question-formation, from which structures with Q to be tagged onto them would have to be excluded.

30. Householder's rules also allow:

\[
\left[ \begin{array}{c}
[\text{You go}] \\
[\text{Nec}] \\
[\text{will}] \\
[Q]
\end{array} \right]
\]

and:

\[
\left[ \begin{array}{c}
[\text{You go}] \\
[\text{Nec}] \\
[\text{will}]
\end{array} \right]
\]

which, it might be claimed, generate:

Are you to go?
You are to go!

This, however, might raise problems with the generation of must
in Must you go? and You must go!, which more obviously relate to \( \text{[Ne\text{-}]} \), but are not synonymous with \( \text{\texttt{be to}} \). It will be seen from Note 53 that I consider a temporal analysis of \( \text{\texttt{be to}} \) possible for non-necessitative utterances like:

The Queen is to meet Brezhnev.

It is questionable whether an analysis in terms of modality (cp. § 7.2.3) is justified (cp. also the discussion of 'infinitive meaning' in § 14.3.4).

31. Schwarz's (1973) criticism and development of Bierwich's account (which is apparently a move towards a performativie analysis became available to me too late for me to consider here.

32. Historically, too, it is arguable that should, as the morphological distinction between past subjunctive and past indicative disappeared, has, irrespective of etymological considerations, taken over the subjunctive function, while new expressions such as: was supposed to have filled the past tense gap.

33. At best, this leads to complexity in the semantic interpretation of the Past. It would, at least in principle, be possible to distinguish modal and non-modal past. This would, of course, mean that suppletive forms like: was supposed to, was able to, was allowed to are to be regarded as non-modal pasts (cp. § 9.4.2).

34. There is, of course (though it may not be the preferred interpretation in either case) the possibility of interpreting 5.52a. and b neutrally (cp. R. Lakoff's examples cited in § 5.3.3).

35. The rules necessary for this being:

\[
F \ 7' \quad \text{VB} \rightarrow \text{Co} + V_M
\]

\[
F \ 51' \quad \text{Aux} \rightarrow \begin{cases} \text{Pass (Pf) Fin} & \text{wenn: Nom}_o + \ M_3 + \text{Ps} \\ \text{(Pf) Fin} & \text{wenn: Imp} + \ldots + \ldots \end{cases}
\]

\[
\text{wobei: } X_6 = \begin{cases} \text{Pass (Pf) Fin} & \text{wenn: } V_c = V_{rc} = \text{lass} \\ \text{(Pf) Fin} & \text{sonst.} \end{cases}
\]

Bedingung: obligatorisch.

36. Evidence for this is given, for example, in Ross 1969. Ross concentrates on the pattern of ellipsis:

They said that Tom \{likes ice cream\} and so \{he does might have been singing\}.

paraphrase possibilities: Ottokar muß Krebs haben.

(attributed to T - flip) Es muß sein, daß O. Krebs hat.

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adverb selection:  Windows may gladly be broken by rioters.
   *There may gladly be windows broken by rioters.
   Windows may possibly be broken by rioters.
   There may possibly be windows broken by rioters.

parallels with known intransitives:
   There happened to be a commissar present.
   There may be a commissar present.

variance - relations:  Ella doesn't need to go. (main verb)
   Ella needn't go. (auxiliary)

37.  This example is actually ambiguous between an interpretation where Fred is the indirect object of must and one where the police is the indirect object of must (cp. R. Lakoff's examples § 5.3.3 Exs. 63a - c). The fact that people generally don't deliberately get themselves arrested, while they might willingly get themselves medically examined as in: Fred must be examined by the doctor is probably the clue to why 5.80a is at first sight not so obviously ambiguous as the above example. Both are potentially ambiguous.

38.  In an interesting article called Missing Agents, Kraak (1968) tries to show that there are "covert" agents involved in the use of root modals like may. In Dutch the evidence is more obvious:
   Karel mag van mijn vader werken.
   'My father allows Karel to work.'

   In German and English other means have to be resorted to:
   Charles may break windows as far as I'm concerned.
   Karl darf von mir aus Fenster einschlagen.

   The fact that we use ablative expressions like von mir aus is good evidence for there being an underlying subject I. Whether this is an 'agent' or merely a 'source' nominal in unclear.

39.  In fact I dispute that there are two negations of will (see § 7.3.2 and § 10.3.1).

40.  This may be attributable to Anderson's Scottish background. Many American speakers also seem to be able to use surely as an assertive rather than a dubitative particle. Strangely, I find it easier to get an assertive interpretation where surely is combined with will: He'll surely be on his way, but even this is not natural to my speech.

41.  will might be more plausible. Anderson later suggests in passing that be certain to is a paraphrase for will.

42.  θ is the definite formator, the function of which here is to definitize the downgraded predicate, which is written between angled brackets < >, and thus produce a "co-referential link between terminal clusters." (cp. Leech 1969 p. 223)

43.  As Professor Lyons has pointed out to me, the case of: Certainly he may have done it, where certainly and may are, if anything, polar opposites, is even more striking. In fact there is also a functional difference: certainly is 'subjective' modality, while may (here) is 'objective' modality (cp. §§ 3.2.3, 8.2.2). In:
   Perhaps he must have done it, perhaps appears to function as a concessive (and subjective) modality, while must (here) is objectivized (in my terms propositional).
44. Furthermore, the adverbial glosses suggested by Halliday: assuredly, surely, seem to reflect different illocutions from: perhaps, obviously, conceivably.

45. The notion of semi-auxiliary has been discussed by Palmer (1965) and Quirk et al. (1972). Evidence for setting it up as a syntactic category includes:

1) non-cleftability: he had to go cp. *it had that he went cp. he seemed to be late; it seemed that he was late.

2) phonological reduction in the case of used (to), have (to), supposed (to), had better: /justə/, /hæftə/, and: You'd better go → You better go.

A more useful syntactic distinction is between those modals that can only appear as first item in the verb phrase (may, might, will, would, must, can, could, shall, should, ought to, be to, have got to, be able to, etc.) (cp. § 8.2.1).

46. There is a further complication in the case of know vs. believe in the past tense-form. Compare:

I knew that he visits her regularly.
*I believed that he visits her regularly.

I { ?believed } that he visits her regularly; what I didn't { know believe } was that he pays the rent.

Even though know in the above examples is in the past tense-form it does not denote a past state but a permanent state: I knew entails I (still) know. I believed, on the other hand, denotes a past and temporary (or at least not necessarily permanent) state. To indicate non-permanency of knowledge (what was mistakenly held to be true, for example) we have to resort to other means: I thought/ believed I knew that he visited her; I knew he visited her, or so I thought/believed at the time.

47. I believe he's there is ambiguous between a statement about a state of belief and the expression of the belief. In the case of the former, it seems to me, there are different stress possibilities I believe ..., I believe ..., etc. and also an establishable commutation with the emphatic form: I do believe ..., under certain conditions.

48. Cp. Urmson's notion of 'parenthetical verbs' (Urmson 1952) and Caton's notion of 'epistemic qualifiers' (Caton 1966), which also accord a special status to forms like those I am discussing.

49. Of course, 'stativity' has generally been taken to be the reason why verbs like: think, know, suspect, etc. do not normally, except in Celtic English perhaps, appear in the progressive: "I'm thinking he's here.

50. There are, of course, two interpretations of I doubt, one that is glossable as 'I don't know' i.e. ~ and one that is glossable as 'I don't think' i.e. v~. The latter is conversationally more usual.
51. I am, of course, aware that in many cases I believe and I think are applied indiscriminately, if the linguistic context allows. I believe, however, potentially entails the speaker's commitment, while I think does not. In the table I indicate this by (+).

52. There are further modifications that I have not considered. One of these is the use of I'm inclined to think/believe .... Whether one German translation equivalent of this: ich glaube/meine fast ... 'I almost think/believe ...' provides a clue as to its nature I am not sure. It has been pointed out by Prof. Lyons that 'I'm not sure that p' is equivalent to 'I'm inclined to think that not p' which opens up the possibility of further systems within modality, if the equivalence claim is valid.

53. There is, of course, a primarily temporal use of be to in cases of future arrangements.

The Queen is to visit Australia next year.
Carter to meet Brezhnev.

This should be treated as a non-modal form: present reality (Mod) future event. It is in semi-contraast to the present tense form, present continuous form and be going to forms. Though there are undoubtedly semantic differences discoverable, these do not involve, I think, the nature of modality. There may be differences with regard to the proximity of the time reference and also to the 'genesis' of the state of affairs (schedule, etc.). There are undoubtedly differences of style or register, too.

54. For some this use of have to is typical of American usage. I find it a perfectly normal, if less vivid, alternative to utterances like:

If that's not the biggest fiasco in the history of commercial aviation I'm a Dutchman/I'll eat my pipe/
I don't know what is.

55. This difficulty rests on the unavailability of test frames for subjective modality. A good indication of objective modality seems to be the interpretability or otherwise of the utterance when ... but I doubt it is added. I should be pointed out that my view of subjective and objective modality differs from that of Lyons 1977, who takes the addition of ... but I doubt it to indicate subjective possibility. I would interpret his example (op. cit., p. 797): Alfred may be unmarried but I doubt it as 'I concede the possibility of Alfred's being unmarried but it is not included in my set of beliefs, etc.' I distinguish subjective and objective modality in terms of speaker's acceptance.

56. The relevant paradigms indicate a few restrictions, which probably have little to do with the nature of modality as such but rather with more general time-reference restrictions on complex clause structures.
require
required
have required
am requiring
have been requiring
was requiring
had required

I
?had been requiring
will require
am going to require
will be requiring
will have required
?will have been requiring
?am going to have required
?am going to be requiring

are required
were required
have been required
?are being required
*have been being required
were being required
?had been required

You
*had been being required
will be required
?will have been required
are going to be required
will be being required
*will have been being required
are going to have been required
are going to be being required
to go.

In both paradigms the cases marked ? are probably easier to interpret if the sentence includes some adverbial specification, thus:

You will have been required to sit here for 6 hours now.
You're only being allowed to sit here until it stops raining.

57. Paradigms for these are:

must
ought to
shall
should
will
*would
can

You
could
may
might
are to
have to
'd better
needn't
*daren't
be working when I come home.
You must have done your homework by 10 o'clock.

Möchte and darf are interpretable as transmitted deontics or a special kind of reported speech.

- Was sagt er?
- Du darfst bis Mittag aufgeräumt haben.

58. She tends to be unpleasant is surely another way of saying: she is often unpleasant, cp. She can be unpleasant she is sometimes unpleasant.

59. I dare him to go is, of course, acceptable with the meaning 'I challenge him to go'.

60. Interpretable perhaps as: I'm inclined to let him go.

61. Perhaps understandably, expressions like: be apt, be prone, be inclined, tend do not normally occur with any tense-form other than the present denoting indefinite or habitual occurrence.

The forms with tend are more readily interpretable given additional context such as: whenever I arrive, etc. The difference between be apt, etc., on the one hand, and tend, on the other, is that the
former is 'potential' behaviour while the latter is (frequent) actual behaviour. A rather similar distinction is to be drawn, I think, between be capable and be able, i.e. between potential ability and actual ability. These distinctions may involve tense (cp. § 9.3.1). American English, however, appears to use be apt in a non-habitual sense, paraphrasable by be likely.

62. I have not included German expressions in this section. So far as my informant-reactions go, very similar phenomena to those involved in the English expressions are to be found. We can note the following expressions:

béreit
willens
gewillt
willig
geneigt
entschlossen
(darauf) gefaBt
fähig
vermögen
neigen
beabsichtigen

It is surprising that the everyday construction in English: need + to + infinitive is scarcely known in a direct German equivalent except as a negative or interrogative. At most such expressions as: *braucht etwas zu machen would occur in non-standard regional vernaculars; brauchen normally being otherwise possible only with nominal objects. The expression of anticipation with erwarten is also unusual with infinitival constructions, although that (daß)-complementation is more acceptable:

Sie erwartet, daß sie morgen singen kann.

neigen is normally only possible with characteristics (cp. English: she tends to go there often). It is far more usual to find nominal objects instead of sentential ones:

Sie neigt zum Leichtsinn.

Another expression in German that we might include is drohen 'threaten', which is idiomatically equivalent to: be about to, be on the point/verge of. Thus:

Das Kind drohte ins Wasser zu fallen.
'The child was just about to fall in the water.'

63. The stress marks indicate a compound intonation nucleus:

He ^will sit there.

which should not be confused with contrastive stress:

He òwill sit there. (I say so)

64. Other dispositional expressions in German are: wollen, möchte, können. Mögen, as in:

Ich mag das nicht hören.
Magst du Kaffee trinken?

is often regarded as a Southernism, where möchte or wollen would be preferable. Compare what is commonly castigated as an
Americanism:

Do you want to/wanna have a drink?

with genteel English:

Would you like to have a drink.

We may also note in German a use of wollen in certain idiomatically or stylistically fixed expressions:

Ich will dir gleich sagen, was los ist.
Diese Arbeit will folgenden Sachverhalt erhellen: ...

Here translations with want would be incorrect; wollen is used more in the sense of 'intention' than 'volition', cp.:

I'll tell you what's up!
I'm just going to tell you what's up!
This essay will attempt to explain the following ...

65. Justification for this distinction comes from the non-contradictoriness of:

\[
\begin{cases}
\text{am resolved} \\
\text{intend} \\
\text{am determined}
\end{cases}
\to, \text{but I don't want to.}
\]

66. Ehrman 1966 actually claims that will not represents (will ∼), while won't represents (∼will). This is argued against by Huddleston 1969 in his review of Ehrman. Leech 1969 and 1971 glosses (will ∼) and (∼will) as 'insist not' and 'not willing', which he claims are equivalent. The introduction of a further 'volitional' gloss does not, I think, throw any light on the meaning of will and its negation.

67. This claim appears, upon reflection, to be too strong. As Professor Lyons has pointed out, the following is not contradictory: I don't want to go, but I'm not unwilling to (if you pay me/under certain conditions, etc.)

68. cp. the at least weak paraphrase relationship between: I am willing for him to go and I allow/accept that he should go.

69. For the terms 'upgraded' and 'downgraded' cp. Quirk et al. 1972.

70. One might cite in this connection the difference between receiving and taking.

71. These senses are partially distinguishable in German by the choice of complementizing verb: ich erwarte, daß ... cp. 7.64b'; ich rechne damit, daß ... cp. 7.64b''.

72. A possible line of approach would be to incorporate 'conversational postulates' à la Gordon/Lakoff 1971. This I am doubtful about. The situation is not really parallel to that of will discussed in § 7.3.2, because we have a syntactic distinction: that complementation is consistent with a non-deontic interpretation, cp. the that-complementation after I think etc.; object + to + infinitive complementation is consistent with a deontic interpretation generally cp. object + to + infinitive complementation after I order, etc. The ambiguity of 64b is, of course, problematic for this classification, but then there are many blurred edges in linguistic classifications. If we were to try to treat one interpretation or one use of expect as a consequence of conversational implicature, it
is difficult to see on what grounds we could determine the more basic (or the more general) interpretation, cp. the case with will § 7.3.2.

73. It was suggested in § 6.2.4 that there are certain parallels between modality systems and quantifier systems. It is perhaps worth mentioning here (though I will not be able to follow this possibility up) that the difference in viewpoint between English few - a few and little - a little, i.e. positive versus negative anticipation is not unlike the difference between possible and probable. Few is a lesser quantity than anticipated; a few a greater quantity. Possible, it seems, represents less than reasonable likelihood; probable greater likelihood. May, it seems to me, is neutral in this respect, but with fall-rise intonation it becomes rather like few, i.e. positive anticipation, negative expectation.

74. My proposal in § 7.4.1 that subjective epistemics and subjective deontics (‘performative’ deontics) should both be analyzed as part of Mod is consistent with this conclusion. Lyons 1977 arrives at a somewhat different treatment of subjective epistemics and deontics, namely:

subjective epistemic: possibly - it is so - that p
objective epistemic: I say - it is possibly so - that p
subjective deontic: I say - so be it - that ! p

(cp. Lyons 1977 pp. 803-4 and 840). This would not, at least not at first sight, make the transition from epistemic to deontic (if such it is) quite so transparent.

75. It is claimed by Huddleston that this utterance cannot normally have a volitional interpretation because of the verb persuade, cp. the case with allow in 8.22a. Professor Lyons has pointed out to me that utterances like: I want them to persuade John to go to university but they won't do so do allow a volitional interpretation of won't i.e. 'refuse to'. I think Huddleston's claim is basically correct for 8.21a, if we think in terms of normal or preferred interpretation. The fact that more context is necessary to bring out a volitional interpretation is perfectly consistent with his claim.

76. Stockwell et al. 1972 assign this to a rule of subject raising.

77. A relationship I have not included here is that between:

It is impossible to explain this.
This is impossible to explain.
cp. It is possible to explain this.
*This is possible to explain.

The case of impossible fits into the pattern of a rule of raising object to subject (Stockwell et al. 1972) otherwise known as Tough-movement. Again there seems to be no reason why be impossible fits in here, while be possible, be probable and all other superficially similar construction do not.
78. Discounting the paradigm for dare to, the exceptions are as follows:

* $\delta + \epsilon$  $7(? + 1), 5(? + 3), 7(? + 1)$
* $\delta + \delta$  $7(\? 1), 2$
* $\delta + \delta$  $2(\? 1), 2(\? + 1), 3$
* $\delta + \delta$  $3$
* $\delta + \delta$  $2(\? 2), 2(\? + 1), 3$
* $\delta + \delta$  $\? 1$

79. Professor Lyons has pointed out to me that the data and findings in this section correspond to the position he adopts in Lyons 1977 (vol. 2). He suggests further conclusions that might be drawn:

i) subjective modality occurs only once (though it may be expressed by a string of reinforcing forms) - this would be consistent with Halliday's claim, assuming Halliday only considers subjective modality and ignores the question of objective modality

ii) subjective modality has wider scope than objective modality (cp. claim (v) further on in this section)

iii) objective modality (epistemic and deontic) may be recursive

iv) with objective epistemic and deontic modality it is epistemic modality that has wider scope.

80. Interpretable perhaps if be able to is (re-)interpreted as 'be allowed to'. However:

*He may be able to need to go
is quite clearly uninterpretable.

81. Moreover, items like perhaps and maybe occur more naturally, i.e. integrated into the clause tone unit, at the beginning of a sentence (in English) than at the end, where they have the effect of 'afterthoughts'.

82. When writing this, I was not aware of the treatment of adverbs in Allerton and Cruttenden 1974, which would undoubtedly have provided a more fruitful basis for my discussion. So far as my discussion here owes anything to any one treatment it is to Quirk et al. 1972.

83. Possibly, though syntactically possible, does not fit this paradigm; impossibly is syntactically unacceptable in English (cp. German unmöglich in: das kann unmöglich wahr sein = 'that can't possibly be true').

The difference between necessarily and contingently, on the one hand, and possibly, on the other, is that the former presuppose the truth of p (here: 'that is true'), while the latter does not.
84. I give here a simplified collation of the paradigms.
(x stands for * and ?*)

<table>
<thead>
<tr>
<th></th>
<th>52</th>
<th>55a</th>
<th>55b</th>
<th>58</th>
<th>59</th>
<th>60a</th>
<th>60b</th>
<th>61</th>
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<tbody>
<tr>
<td>a</td>
<td>x</td>
<td>?</td>
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<td>b</td>
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</tr>
</tbody>
</table>

| naturally | x | ? |    |
| certaintly | ? | x | x | x |
| sure | ? | x | x | x | ? | x |
| definitely | x | ? | x | x | ? | x |
| obviously | x | ? | x | x | ? | x |
| of course | x | ? | x | x |
| sure | x | x | x | x | ? | x |
| clearly | ? | ? | ? | x | ? |
| indeed | x | x | x | x | ? | x |
| undoubtedly | ? | ? | x | x |
| necessarily | x | x | x | x | ? | x |
| evidently | x | x |
| seemingly | x |
| apparently | x |
| actually | x | x | x | x |
| really | x | ? | x | x | ? | x |
| probably | ? | x |
| perhaps | ? | x |
| possibly | ? | x | x |
| may | x | x | x | ? | x |
| could be | x | x | x |
| chances are | x | x | x | x |
| conceivably | ? |

85. I do not take punctuation and-or intonation into account in the remaining paradigms of this section.

86. There is actually a step missing here, as Professor Lyons has pointed out. There appear to be differences in acceptability and-or interpretability depending on whether be is retained in the but-clause. We should, therefore, compare the frames:

- It’s not raining in Chicago, but it _____ be (raining) sometime etc.
- It’s not raining in Chicago, but it _____ (do = rain) sometime etc.

Similarly the frames:

- It’s not raining in Chicago, but it _____ be (raining) sometimes etc.
- It’s not raining in Chicago, but it _____ (do = rain) sometimes etc.

give rather different results. The difference, semantically, lies in the likelihood of a state of affairs (be) or an event (do). The choice of sometime/some day versus sometimes/at times gives a distinction between one instance (necessarily future-referring) and several instances (i.e. temporally indefinite). Checking through the original frames (8.87b and c) and the two new frames with be, I arrived at the following results.
The clear cases are:

\[
\begin{align*}
\text{'should'} & \text{ do not appear with 'iterative'} \\
\text{'could'} & \text{ do not appear with states of affairs} \\
\text{can} & \text{ does not appear with states of affairs}
\end{align*}
\]

Somewhat less clear are:

\[
\begin{align*}
\text{have to} & \text{ generally appears with states of affairs} \\
\text{must} & \text{ generally appears with events}
\end{align*}
\]

Insofar as these results reflect temporal relations, cp. § 9.

87. Similarly in German.

\[
\begin{align*}
\text{In diesem Moment regnet es nicht in} & \\
\text{könnte} & \\
\text{mag} & \\
\text{er} & \text{irgendwann mal.} \\
\text{aber es} & \text{irgendwann mal.} \\
\text{Chikago,} & \\
\text{könnte} & \\
\text{sollte} & \\
\text{*soll} & \\
\text{chen} & \\
\text{sollte} & \\
\text{ab und zu mal.}
\end{align*}
\]

88. In fact, as Leech (1969) points out, any 'event' verb (non-state, non-mass i.e. countable instance action) shows this ambiguity. It is an ambiguity that is present in the simple present tense of such verbs. Compare:

\[
\begin{align*}
a. & \text{He goes tomorrow.} \\
b. & \text{He goes often.}
\end{align*}
\]

though the use of the simple present in sentences like a is subject to certain pragmatic restrictions.

89. A 'present iterative' interpretation of 9.2b would be conceivable with an expansion like: '... now that he's got more free time', but is otherwise marginal.

90. Dispositional \text{can} is evidently not normally future-referring, cp. Table VIII.

91. Notice that a past tense-form like might does not as such exclude assignment to Mod, if it can be established that it is performative in utterances like:

You might (just) do the washing-up for me!

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The principle of over-riding (§ 11.3.3), however, might offer a more appropriate analysis of such utterances.

92. These sentences are adapted from those of Leech (1971) p. 76.

93. 9.24b, though perhaps not quite so readily interpretable as 9.24a, has at least a concessive interpretation.

94. This analysis of can is also consistent with the use of can to express quantification over times. In:

   a. Management consultants may be beneficial.
   b. Management consultants can be beneficial.

may indicates a possibility that something is the case, while can indicates that something is sometimes the case, i.e.

   a'. 'It is possible that (in this case) management consultants will be beneficial'.
   b'. 'It is the case that management consultants are sometimes beneficial'.

cp.

   a". Management consultants can be beneficial and may (even) in this case.
   b".*Management consultants may be beneficial and can be in this case.

This sense of can would be analyzed:

\[
\begin{array}{ll}
\text{Mod} & \text{Prop} \\
\text{pres} & \text{(sometimes \(p\))}
\end{array}
\]

There are definite parallels in some systems of formal logic between existential quantification (to which quantification over time may be imputed) and the possibility operator.

95. Chvany (1972) suggests a movement transformation raising tense from a sub- to a superordinate clause. Her evidence includes the following pair of Russian sentences which are considered to be equivalent:

\[
\text{должно быть, Иван много знает [past] об этом}
\]
\[
\text{Иван должен быть [past] много знать [infinitive] об этом}
\]

'It's probable John knew a lot about that.'

'John had to know a lot about that.'

96. Professor Lyons has pointed out that the social acceptability of Must you leave so soon? uttered by a host as against Do you have to leave so soon?, which would be reproachful, is consistent with this claim.

97. The following paradigm shows how much more generally acceptable these modal expressions are in reported speech:

\[
\begin{array}{l}
\{ \text{might, could, must, should} \} \\
\{ \text{had to, ought to, had better, was to, needn't} \} \\
\end{array}
\]

\[\text{leave the following day (, he was told).}\]
98. a modification of an example in Anderson 1971b.

99. In those dialects where had got to can be a narrative past, it appears to be modal. Thus there is a potential distinction arising between modal had got to and non-modal had to, cp. § 2.1.2.

100. It may however be claimed that should have and ought to have, at least in their deontic senses, are counter-factual without being conditional. We cannot say:

You ought to have done it.

without presupposing that whatever it refers to was not done.

101. In: He can't not go and he isn't (doing so) it may, as Professor Lyons has pointed out, be said that doing so stands for a negative proposition 'not going'. In other words, the negativity of isn't, which I would say is negation under Mod, is independent of the negativity of the proposition.

102. Lyons 1977 distinguishes up to four kinds of negation: 'neustic' negation, which would in my terms be referred to as illocutionary negation, 'tropic' negation, which is my modality negation, 'phrastic' negation, which is my proposition negation, and, though with some reservations "nexus negation" as in impossible. (Cp. Lyons 1977, 768 - 773)

103. We cannot, with an epistemic interpretation, attest:

*He may not be not coming.

This is explainable on the basis of the principle that only complex propositions may have multiple negation, cp. He may not be thinking of not coming.

104. Some speakers claim to use: mayn't - at best it is extremely rare. I think it is also obsolescent.

105. Peltkamp (1969) notes a similar phenomenon in German:

Er konnte auch nicht STIMMEN. (modality negative)

Er konnte auch NICHT stimmen. (proposition negative)

and:

Wenn er nicht STIMMEN darf, darf ich es auch nicht.
Wenn er NICHT stimmen darf, darf ich es auch.

105a. Kingdon (1958) claims that a difference in stress pattern with negative forms reflects the distinction between epistemic and deontic.

epistemic       deontic
may not       mayn't
might not     mightn't
ought not to   oughtn't to

It is possible that this is true for some speakers, but I don't think (even allowing for mayn't) it is general. It is also possible that some speakers distinguish:

a. He'll nót gô.    negative volition (refusal)
b. He wón't gô.     future negative (prediction)

For me, b has both interpretations and a is Scottish English (with both interpretations).
106. It should, of course, be pointed out that know is not usually included as an item where negative-raising is possible, because:

I know he's not there.
≠ I don't know that he's there.

The collocation: don't know, however, seems to function just like don't think where neg-raising is possible:

I think he's not coming.
≠ I don't think he's coming.

This indicates that neg-raising is a question of semantics and cannot be adequately formulated with reference to lexical items alone, as don't know would have to generated completely independently as the negation of know, even though semantically it belongs with don't think (on one interpretation).

107. cp. (You doubt that he's there and) I doubt that he's not there. (You say he's there and) I doubt that he's there.

108. The competing form: He's probably not there is fully acceptable.

109. In contrast to the utterance: It's impossible that he's there, which may be synonymous with one sense of: he can't be there. Here, the unmodalized proposition, (he be there), is the most that can be said to be given by the discourse.

110. Further evidence for the difference between modality negation and proposition negation can be seen in:

a. It can't be true ≠ It can not be true.

b. It may not happen ≠ It may not happen.

where equivalence here is taken to be logical equivalence. The utterances in b are not in my terms (cp. § 1.4.1) linguistically equivalent.

111. This view differs markedly from that of Lyons 1977, who accepts the existence of negative illocutions, which he calls "positive non-commitment".

112. It could be, as Professor Lyons has pointed out, that this is society-specific. In societies where nothing that is not explicitly permitted is illegal or taboo, saying 'I don't forbid' could not be regarded as allowing something. On the other hand, saying 'I don't forbid' in such a society is practically meaningless. In Western societies saying 'I don't forbid' means, as I claim, that something is allowed, but it adds the implication that it is not approved of. Approval, it seems, is normally entailed by permitting.

113. It is quite likely that a distinction should be made between daren't and don't dare to, the former being deontic and having the meaning 'have no right/justification', the latter being dispositional and having the meaning 'have the courage to'. Compare:

He daren't object.
He doesn't dare to object.

There is also a difference, at least in my speech, between:

Dare you contradict me?
Do you dare to contradict me?
The former does not entail the factivity of 'you contradict me'; the latter has for me a preferred interpretation where the factivity of 'you dare to contradict me' is entailed.

114. Occasionally the form haven't to is to be found (mostly, I suspect, as the result of prescriptive teaching). I have, for instance, encountered it in the novels of Galsworthy. Its sense seems to be that of mustn't:

You haven't to go there anymore, do you understand!

Insofar as haven't to is interpretable in my speech, it is a case of proposition negation: 'have to' \(\sim\). Cp.

You don't have to shop at Harrods.
You haven't got to shop at Harrods.
You mustn't shop in Harrods.
You haven't to shop in Harrods.

115. We could add here the (particularly) American use of:
be not about to as in:

I'm not about to buy a new set.

which is used rather like: be not prepared to.

116. Further support for this distinction can, as Professor Lyons has pointed out, be gained from the collocation possibilities of the two items:

The hedges needn't be trimmed because they don't need to be.
*The hedges don't need to be trimmed because they needn't be.

The hedges needn't be trimmed - they certainly don't need to be.
?The hedges don't need to be trimmed and therefore needn't be.

*The hedges needn't be trimmed - and therefore don't need to be.

117. This three way division differs, of course, from the discussion in Fraser 1974, where what he calls 'vernacular performatives' are split into two types: those describing the world and those changing the world, thus:

describing world: A asserting: state, declare
B evaluating: analyze, calculate
C reflecting attitude: precise, thank, blame

changing world: D stipulating: define, abbreviate
E requesting: request, ask, beg
F suggesting: suggest, advise
G legitimatizing: allow, forbid
H committing: bet, promise

Such a division may be related to Boyd/Throne's 1969 division into 'state' and 'imp' cp. § 5.1.1, or to Stoddart's 1849 division into 'enunciative' and 'passionate' cp. § 4.1.4.

Lyons (1977) takes a rather different view: he makes two divisions, on the one hand between questions and non-questions, and on the other hand between non-directives and directives. A statement is accordingly a non-directive non-question.
118. Although we do occasionally have situations where the speaker (I) uses the form we, this is generally either a stylistic convention ('royal we') or a case of the speaker speaking on behalf of a number of people. (Arguably, we uttered by a number of people in unison (a chant, the pater noster, etc.) or we in a legal document (we, the undersigned, do hereby undertake to ...) are genuine cases of speaker plurality.) With the hearer, however, I believe it to be generally accepted that a group can be just as readily addressed as an individual — though, of course, an individual may be addressed as the representative of a group.

119. It should be pointed out that then refers to a set of assumptions and may be glossed: 'in that case'. The acceptability of the co-occurrence of then in 11.9a may be explained in terms of implicit conditionality, i.e. '... if you want to, etc.' This is, of course, consistent with the felicity conditions of permissives.

120. The formulation for German with a paradigm:

Geh!
Bitte geh!
Geh bitte!
Geh doch!
Geh doch bitte!
Bitte geh doch!
Bitte geh nicht!
Geh doch nicht!
Geh du!
Geh du noch nicht!
Aber du geh nicht!

would be somewhat simpler, approximately:

\[
\left( \begin{array}{c}
\text{II} \\
\text{bitte}
\end{array} \right) \text{V} \quad \left( \begin{array}{c}
\text{II} \\
\text{doch} \\
\text{nicht} \\
\text{bitte}
\end{array} \right)
\]

Constraint: *du ... du.
*bitte ... bitte.

121. Stockwell et al. (1972) analyze imperatives as reductions of: You will go! by will- and subject-deletion. They would thus posit a common deep structure for: You will go! and Go! This position I cannot share.

122. Expressions like:

Laßt ihn helfen.

are to be encountered, but I think they are to be distinguished, if only because they involve a (presumably non-specific) addressee. I am not certain to what extent let in:

Let Georgie help.

can be interpreted as a causative. The German laßt in the example above, however, is clearly causative, so a sentence like:

Laßt Kennedy helfen.

means not: 'I challenge Kennedy to help', which is my gloss of:

Let Kennedy help.

but:

'You (indef) [make] Kennedy [help. to help.]

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123. In German we have utterances like:

Mag er sterben!
Möge er glücklich sein!
Er mag doch gehen!

These should not be confused with comments like:

(- Er will auswandern.)
- Mag er doch machen.

124. The view taken in Lyons 1977 differs to some extent from my view. He appears to interpret ? as 'assign a truth-value to', which would make ?(p ∨ ¬p) somewhat ridiculous since (p ∨ ¬p) is a tautology. In my view, however, (see on) ? does not have (p ∨ ¬p) directly within its scope, so this difficulty is avoided. Moreover, I do not interpret ? as an instruction to assign a truth-value, since I wish to subsume rhetorical questions and deliberative questions under ? and such questions cannot be said to contain an instruction to assign a truth-value.

125. In my view:

Is she at the party?
also presupposes that there is a party when interpreted openly, but it does not suppose the proposition (she be at the party) (cp. § 1.4.1).

126. This distinction is partially grammaticalized in German:

\[
\begin{align*}
\text{John geht,} & \begin{cases} 
\text{\$ nicht?} \\
\text{\$ wahr?} \\
\text{\$ oder?}
\end{cases} \\
\text{\$ nicht.} & \begin{cases} 
\text{\$ wahr.} \\
\text{\$ oder.}
\end{cases}
\end{align*}
\]

127. At least in most British English usage. In American English and Scottish English it may apparently be used as a substitute for certainly.

128. This proposal raises the question of whether non-open questions of the form:

She's going?

are correctly analyzed as: \( ? \cdot p \).
Should they not be: \( ? \cdot p \)?

However, there doesn't seem to be any need for this analysis. The utterance cannot be said to have the illocutionary potential of a statement as well as the illocutionary force of a question. It only has the superficial form of a statement, a form which is after all a base form, or unmarked form.

129. Stockwell et al. (1972) include other differences involving questions of marginal acceptability. I think that for some dialects, at least, there are no real differences on these points: conjunction; the use of please in questions (which anyway surely turns a question into a request).

130. We may note in support, as pointed out by Prof. Lyons:
What is the time - please tell me?
*What is the time - please do?
*Will you sit down - please tell me! (not request)
Will you sit down - please do!

131. All utterances susceptible to an open question interpretation may also be interpreted as non-open questions; all utterances interpretable as non-open questions may also be interpreted as challenges. The reverse transference does not work.

132. It is arguable that it is no longer narrative usage when the speaker commits himself in this way. This is apparent in the case of the reporting of non-generic statements when realization has yet to take place.

Er hat gesagt, sie komme.
Er hat gesagt, sie kommt.
He said she was coming.
He said she's coming.

133. Prof. Lyons has pointed out to me that this is not necessarily the case: the speaker commits himself to the belief that the person reported would still be prepared to make the same assertion cp. He said that the earth is flat - that's how I know he's crazy. This for me is quite clearly a non-narrative use, cp. footnote 132 above.

134. It is reported that there is a difference in pronunciation between indicative forms and subjunctive forms which have identical written forms:

'haben' indicative /ha·bən/ ⇒ /ha·bm/
subjunctive /ha·bən/ ⇒ . . .'

135. On the other hand, there are speakers who regularly use konjunktiv II, especially in the North. The use of subjunctive forms in indirect speech may be said to be one of the most uncertain areas of German grammar. Clearly, the language is undergoing change in this respect. My information is based largely upon Glinz 1952 and Schwarz 1973.

136. Notice the effect of stress and intonation:

He said she -quote loved him. ⇒ it is the case.
He -quote said she loved him. ⇒ it is the case.
He -quote said she loved him. ⇒ it is not the case.

137. Both soll and sollte (indicative) could be used but would have rather different meanings.
soll is appropriate when the reported speech is not narrative and the speaker (= reporter) considers the obligation to still be present or actual. Compare:

Der Chef hat gesagt, daß die Uschi gehen soll.
The boss said that Uschi's to go.
sollte (indicative) is a past tense of this:

Der Chef hat gesagt, daß die Uschi gehen sollte.
The boss said that Uschi was to go.
sollte (subjunctive) may be weakened form of solle: in the North it may even be preferred.
138. Compare German:

"Laß uns gehen!" sagte er.
"Wollen wir gehen?"

⇒ Er fragte, ob sie (nicht (lieber)) gehen sollten. ob man nicht gehen sollte.

139. Since this claim differs considerably from what is to be found in published grammars, I tested the responses of native speakers on the reporting of open and non-open questions. Of these three were American, one was Australian, one Scottish and one English. The results are printed below.

"Is she coming?" he asked.
He asked if she was coming.  
if she were coming.  
whether she was coming.  
whether she were coming.  

"Is she sick?" he asked.
He asked if she was sick.  
whether she was sick.  
if she were sick.  
whether she were sick.  

"Isn't she coming?" he asked.
He asked if she wasn't coming.  
if she weren't coming.  
whether she wasn't coming.  
whether she weren't coming.  

"Isn't she sick?" he asked.
He asked if she wasn't sick.  
if she weren't sick.  
whether she wasn't sick.  
whether she weren't sick.  

"Isn't she coming?" he enquired.
He enquired if she wasn't coming.  
if she weren't coming.  
whether she wasn't coming.  
whether she weren't coming.  

"Isn't she sick?" he enquired.
He enquired if she wasn't sick.  
if she weren't sick.  
whether she wasn't sick.  
whether she weren't sick.  

✓ = preference when both indicative and subjunctive forms seem to be acceptable as reports of an open question

140. In Partridge (1973) and Onions (1971) there is reference to a use of the subjunctive in dependent questions (rather than reported questions) with the comment that it is poetic style:

"Even those who had often seen him were at first in doubt whether he were the brilliant and graceful Monmouth (Macaulay)"

(in Partridge 1973)
On re-reading Whorf (1938) I discovered the following examples:

I asked him if he were about to go home.
... to see if he were there ...

The latter example, though not reported speech use of subjunctive, is another case of a subjunctive not generally recorded in grammar books. It may be occasioned by the non-factuality of the purpose clause (cp. § 14.1.4).

141. Partridge (1973) condemns the equating of if and whether, saying that whether alone is correct in dependent questions. This is clearly a stupidly prescriptive claim, one which runs counter to the intuitions and practice of most native speakers. Wood (1962) claims that there is a slight difference between the two: if is appropriate when the speaker desires or expects the state of affairs to be realized; whether suggests neutrality and indifference - this is perhaps not unrelated to the claim of my Australian informant that if is used on its own, while whether is used with 'or not', a pattern noted by Partridge as American usage.

142. It should be pointed out that "Is she coming?" "Is she sick?" can also have a non-open interpretation; in speech this is distinguished by intonation contour. This is not reflected in the table in footnote 139, which may account for some of the uncertainty of the informants' judgments.

143. However, in the case of a non-open question there was reluctance to accept the indicative.

Er fragte: "Kommt Uschi nicht?"
⇒ Er fragte, ob Uschi nicht \{ käme. ?kommt.

There also seemed to be some doubt when the question reported involves the addressee, cp.:

Er fragte Uschi, ob sie \{ käme. ?kommt.

Er fragte sie, ob Uschi \{ käme. ?kommt.

144. I exclude here the kind of complementizing verb that has been called a 'modality' verb (Givón 1972, Karttunen 1971), but which are strictly activity verbs. They involve the status and effects of actions. Thus:

He prevented her from leaving.
He failed to win.
He avoided being caught.

although 'modality' verbs to Givón and Karttunen, involve certain presuppositions about the status of the event in the embedded proposition as realized or unrealized, but the complementizing verb cannot be said to involve the speaker's view of reality, modality in the sense defined in § 7.4.2.

145. There are, of course, forms like:

a. I don't know that he's coming.

b. I wonder that he's coming.
a involves a denial of: I know that he's coming - it might be glossed: 'The fact that he's coming is unknown to me.'
b is a reaction verb like many of the 'putatives'. It might be glossed: 'I wonder (= marvel) at the fact that he's coming.'

Latin: Timebat ne interficeretur.

147. Examples 12.38c and d are ambiguous. When be afraid has the interpretation 'be sorry to say' or 'unfortunately', then, of course, the complement supposes the factuality of the state of affairs referred to.

148. I distinguish: (x) + to-complements
(for x) + to-complements.

in contrast to Rosenbaum (1967). Be anxious can, however, appear with (for x) + to, which is apparently regular with adjectival constructions, cp.

It is necessary
It is possible
It is essential
It is imperative

149. or: gerund, but not: poss - gerund, in the case of suggest, propose; x + to - infinitive in the case of advise, warn.

I suggested { *his going to the flicks. } (i.e. we go)
I proposed { *his going to the flicks. } (i.e. I go)

I advised him to go.
I warned him to go.

150. say may also have the force of an obligatory complementizing verb, but its syntax is at variance with that of the other verbs. It requires either should or 'be to, but cannot co-occur with a subjunctive.

*I say that you be there.
I say (that) you should be there.
I say (that) you're to be there.

151. Compare French:
Dites-lui qu'il vienne.
which has an alternative in:
Dites-lui qu'il doit venir.

152. Some speakers do not accept should as an alternative to a subjunctive here, allowing only the pattern:
I order that she go.
I demand that she go.

153. German has no equivalent to this complement modality. French may, however, have it in the opposition between subjunctive and indicative.
Je suis heureux que tu sois venu.
Je suis heureux que tu es venu.
154. In discourse, the **should** form is particularly common when un-pleasantry or condescension are involved.

> I'm delighted you should be so happy in your marriage, my dear.

> I'm sorry you should think our company's policy on pollution to border on the criminal, Jones.

Leech (1971) notes the following kind of expression of indignation:

> That he should think me capable of it!

where an indicative alternative is not normally possible:

>*That he thinks me capable of it!*

155. Although there is obviously no possibility of interpreting type 1 complementizing verbs as performatives, there is, however, an ambiguity in the use of: **I know ...** Thus:

I know he's coming.

may, on the one hand, be uttered to indicate the speaker's (new) state of belief, and on the other hand, to indicate his acceptance of a piece of (given) information.

Compare:

a. I know he's coming, he wrote to tell me so.

b. I know he's coming, but I don't have to see him.

In a the utterance is equivalent to: 'I am certain' and thus is of interest to us from a modality viewpoint. In b the utterance, is equivalent to: 'I accept (the fact that)'.

156. Compare:

> It is better you (should) go.

> It'd be better if you went.


158. This is not dissimilar to Ross' analysis of co-ordination expressed in the rule:

\[
S \rightarrow \begin{cases} \text{and} & S^n, \quad n \geq 2 \\ \text{or} & \end{cases}
\]

\[
cp. \ S \rightarrow \text{if } S^n, \quad n = 2
\]

But this would equate what is commonly held to be subordination with co-ordination. This may be a tenable position (but see § 14.1.0).

An analysis of this kind might be prompted by the logical relationship between co-ordination and implication:

\[
\sim(p \land \sim q) \supset (p \supset q)
\]

( \supset \text{ represents material implication here, not presupposition.})

159. In terms of truth-values, 13.2b differs from 13.2a, c and d in not entailing the truth of 'he is a bachelor'. Linguistically, 13.2d introduces, at least on one interpretation, a reason for asserting 'he's unmarried': 'My knowledge that he is a bachelor is the reason for my assertion that he is unmarried' - the other interpretation is, of course, 'his being a bachelor is the cause
of his being unmarried'. Other linguistic factors involved are topicalization and focus.

160. Then presumably has a deictic function, referring to the world in which 'you pay me' is true, cp. Lyons 1977.

161. Compare the Shakespearian:

No more of that, Hal, an thou lovest me. (quoted Onions 1971)

I'll come, an it please you.

The fact that the verb please is formally subjunctive suggests that this kind of condition is notionally distinct, cp. '... and may it please you'.

162. The two clauses may apparently be in a disjunctive relationship:

Do it or it will be the worse for you. (Onions 1971)  
≡ If you don't do it, it will be the worse for you.

The fact that this is paraphrasable by if ... not reveals that this or is not simply the truth functional connective $\lor$, but something more complex, cp. or else. Both and and or after imperatives might be the result of ellipsis:

Do it, and [if you do it] I'll be happy. 
Do it, or [if you don't do it] it will be the worse for you.

163. It is worth noting in this connection the claim made in Geis/Zwicky (1971) that there is a tendency in the use of natural languages to perfect conditionals to bi-conditionals. This is termed 'inviting inferences'. Thus

\[ x \supset y \] invites the inference \[ \neg x \supset \neg y \]

and:

\[ (x \lor y) \supset z \] invites the inference \[ (x \land y) \supset z \]

Geis/Zwicky claim furthermore that invited inference accounts for the historical development: temporal since

> causal  

164. But here the given that paraphrase is ruled out.

165. I also wonder whether the apodoseis in 13.26a - e are quite parallel to the apodosis of If John's unmarried, he's a bachelor, which is clearly an assertion. This resurrects the problem noted in § 5.1.1 of whether utterances like: John's an idiot are modally distinct from: John's a teacher (cp. Bolinger 1973).

166. Karttunen (1971) has noted that only the "antecedent clause" i.e. protasis, can be presupposed to be false, i.e.

\[ S_1 \supset S_2 \text{ but } \neg S_1 \nRightarrow \neg S_2 \]

and cites as examples:

If Harry had known that Sheila had survived,
\[
\begin{cases}
\text{he would've gone home, which he did anyway.} \\
\text{he still would have gone home.}
\end{cases}
\]

For this reason I prefer to use the term irrealis to counterfactual, since irrealis can then also apply to the would-form in the apodosis.
167. It is worth noting that many of the paraphrases claimed for conditionals are highly restricted in their application. Although I have not been able to pursue this further, I suspect that the use of and restrictions of: provided (that), assuming (that), on condition (that), given (that), supposing (that), suppose, imagine, in case, in the event that, etc. might provide further clues to the complexities of conditional clauses.

168. Rowlands 1969 notes a distinction in Yoruba between definite and indefinite real conditions, citing the following examples.

\[\text{b'gmodè kò kú, agba ni idá.}\]  
\[\text{definite 'if a child doesn't die, (then) he grows up.'}\]

\[\text{b'gmodè kò bá kú, agba ni idá.}\]  
\[\text{indefinite 'if a child doesn't happen to die, then he grows up.'}\]

The latter example is claimed to have the expectation that children normally die. Whether this distinction reflects the distinction I draw between open and non-open conditionals or whether it reflects simply the distinction in English between an indicative protasis and one containing should + infinitive I cannot, without knowing Yoruba, determine. The particle bá, however, is present in both protasis and apodosis of 'unreal' conditions (Rowlands 1969).

169. The distinction drawn in the German grammatical tradition between realis, potentialis and irrealis may be conveniently denoted by the Latin forms: est, sit, esto (cp. Krahe 1972).

170. 

Seem may occur in generic if-clauses, but only as a result of a movement transformation which is quite common, at least in spoken English:

Whenever he seems to \{be there\}, there's trouble.

\[\equiv\text{It seems that whenever }\{\text{he's there}\}, \text{there's trouble.}\]

\[\equiv\text{Whenever }\{\text{he's there}\}, \text{there seems to be trouble.}\]

(cp. the can't seem to construction in Langendoen (1970))

171. It seems that if ever is inappropriate here if a generic sense is intended, but:

If ever he came, it's possible he wore a hat.

If he ever came, it's possible he wore a hat.

i.e. I don't commit myself to accepting that he came.

172. cp. German:

Wenn ich das fallen ließ, wie kam es, daß es nicht zerbrach?

'If I dropped it, why didn't it break?!

Wenn ich dort gewesen bin, warum hat mich niemand gesehen?

'If I was there, how come nobody saw me?'

173. Notice that: If he has to have done that is not the same as:

If he has had to do that (cp. Note 95 on Chvany's claim for Russian).
174. But note:

If JB, who is dull, has come, the girls

\[
\begin{align*}
\text{should} & \quad \text{6} \\
\text{will} & \quad \text{6} \\
\text{may} & \quad \text{6} \\
\text{must} & \quad \text{6} \\
\text{can} & \quad \text{6} \\
\text{have to} & \quad \text{6} \quad \text{(6)}
\end{align*}
\]

be bored to tears.

and:

If he was there, I

\[
\begin{align*}
\text{should've} & \quad \text{6} \quad \text{(6)} \\
\text{would've} & \quad \text{6} \\
\text{must've} & \quad \text{6} \\
\text{might've} & \quad \text{6} \\
\text{may have} & \quad \text{6} \\
\text{ought to have} & \quad \text{6} \quad \text{(6)} \\
\text{could've} & \quad \text{6} \quad \text{(6)}
\end{align*}
\]

seen him.


176. For the sake of comparison, the forms with \textit{would like} pattern as follows, though judgments are none too certain and perhaps subject to prescriptive teaching.

\[
\begin{align*}
\text{next week.} \\
\text{tonight.} \\
\text{last night.} \\
\text{by Thursday.} \\
\text{before you leave.} \\
\text{before you left.} \\
\text{but I can't.} \\
\text{but I couldn't.} \\
*\text{if it's possible.} \\
*\text{if it were possible.} \\
*\text{if it had been possible.}
\end{align*}
\]

a. I would like to have seen you

\[
\begin{align*}
\text{next week.} \\
\text{tonight.} \\
\text{last night.} \\
\text{by Thursday.} \\
\text{before you leave.} \\
\text{before you left.} \\
\text{but I can't.} \\
\text{but I couldn't.} \\
*\text{if it's possible.} \\
*\text{if it were possible.} \\
*\text{if it had been possible.}
\end{align*}
\]

b. I would have liked to have seen you

\[
\begin{align*}
\text{next week.} \\
\text{tonight.} \\
\text{last night.} \\
\text{by Thursday.} \\
\text{before you leave.} \\
\text{before you left.} \\
\text{but I can't.} \\
\text{but I couldn't.} \\
*\text{if it's possible.} \\
*\text{if it were possible.} \\
*\text{if it had been possible.}
\end{align*}
\]

c. I would like to see you

\[
\begin{align*}
*\text{before you left.} \\
*\text{but I can't.} \\
*\text{but I couldn't.} \\
*\text{if it's possible.} \\
*\text{if it were possible.} \\
*\text{if it had been possible.}
\end{align*}
\]
d. I would have liked to see you
   next week.
   tonight.
   last night.
   by Thursday.
   before you leave.
   before you left.
   but I can't.
   but I couldn't.
*if it's possible.
if it were possible.
if it had been possible.

My own initial reaction was that b is the irrealis counterpart of a, and d that of c; this was borne out to an extent by the intuitions of an American speaker. However, of the seven native speaker reactions I checked, none was in complete agreement with any other. One American found all the d forms unacceptable, saying they should be replaced by either the b forms or by 'I should have liked seeing you ...'. An Australian, on the other hand, found the b forms 'an unnecessary hybrid'.

The forms I have starred are those rejected by 5 - 7 of those tested, those questioned are those rejected by 3 - 4. One explanation of the confusion might be that b and d represent both 'counterfactual' and 'past tense' forms of a and c. Compare:

I would have liked to see you before you left.
I would have liked to see you if it had been possible.

Another factor involved may be 'perfect' movement, i.e. for some speakers the following are equivalent:

I would have liked to see you.
I would like to have seen you.

For the American who rejected the d forms, c represented the present, a the past and b the counterfactual.

177. cp. If I feel inclined to find it, I'll keep it, where inclined means: 'disposed towards .../willing to' and not: 'have a tendency to ...'

178. Leech (1971) cites as examples:

If you were to learn Spanish, you might get a better job.
Just suppose that crocodile were to escape.

but finds co-occurrence with a stative verbs dubious:

?If you were to know Spanish, you might get a better job.

Acceptability for me is dependent on the underlying time reference of the if-clause; present does not allow were to; future does. Hence:

If you knew Spanish, you'd be getting paid more money.
If you were to know Spanish, you'd be getting paid more money.

If you knew Spanish, we would be able to pay you more.
If you were to know Spanish, we would be able to pay you more.
179. Leech (1971) uses the term 'suppressed condition' to cover both types. He apparently accepts the view to be found in R. Lakoff (1968), and elsewhere, that such forms are to be derived from underlying irrealis if ... then constructions.

180. Or rather conditional clauses since, as we saw in § 13.1.3, if itself is not necessarily conditional.

181. Kuryłowicz, however, analyzes:

\[
\begin{array}{cccc}
\text{past} & \text{present} & \text{conditional} & \text{future} \\
\beta & \gamma & \beta & \gamma \\
\end{array}
\]

where the present $\beta$ future relationship is said to be paralleled by the past conditional and, moreover, "the relationship between $\alpha$ and $B$ is closer than that between $\gamma$ and $\beta$. Similarly, $\beta$ and $Y$ are more intimately associated than $B$ and $\gamma$." p. 19 op. cit.

His symbols $\alpha, B, \beta, \gamma$ stand for neutral, negative, positive, complex. I find it difficult to accept 1) that present and future are more intimately related 2) that future is 'negative', while past is 'positive'.

In a feature analysis values such as those below would be more satisfying:

\[
\begin{array}{cccc}
\text{future} & \text{present} & \text{conditional} & \text{past} \\
+X & -X & +X & -X \\
\end{array}
\]

182. In fact Rutherford's non-restrictive subordination seems to cover two cases, which I would distinguish:
1) a true subordination which is nevertheless non-integral; 2) a kind of comment clause, which, to judge by Rutherford's evidence and arguments, involves a separate Ill - Rutherford posits the existence of an intervening performative. An example of this type would be:

He's not coming to class, because he just phoned from San Diego.

\[
\text{III Mod Prop } \left[ \cdot \cdot \cdot (\sim p) \right] \land \text{III Mod Prop } \left[ \cdot \cdot \cdot (\text{'because' } p') \right]
\]

Here the because-clause anticipates the question: Why do you say that? or How do you know? I shall not take this variety, which strikes me as involving ellipsis to some degree, into account. This type should be further distinguished from the afterthought type of strict subordinate clause:

He's not coming to class today - because he's sick.

183. It might be counter-argued that:

I can't stay up because \( \{ \text{I'll fall asleep.} \) I'd fall asleep. \)

are cases of future or irrealis. I find such utterances, however, elliptical for:

I can't stay up because

I'll fall asleep if I do.

I'd fall asleep if I did.

I can't stay up, \( \{ \text{otherwise I'll fall asleep.} \) because then I'd fall asleep.\)
184. I have not taken account of utterances like:

   It wouldn't matter where I worked.

where the 'tentative' wouldn't matter determines an irrealis
tense sequence. Interestingly, even though the where-clause is
not conditional, i.e. a protasis, a conditional tense-form is
not possible:

   *It wouldn't matter where I would work.

worked must be treated as 'modal' past or past subjunctive, cp.

   It wouldn't matter where I {was} {were} living.

In some people's speech, I suspect, a present tense-form is
also acceptable:

   It wouldn't matter where I work.
   It wouldn't matter where you are living.

Incidentally, I have found no reference to this phenomenon in
any of the standard reference grammars I have consulted.

185. I shall not consider the close relationship between local ad-
verbial clauses and relative clauses:

   I found her at the place I had left her.
   Ich fand sie dort, wo ich sie verlassen hatte.

186. The conjunctions wherever, whenever, however are frequently assign-
ed to the category: concessive. Although there is undoubtedly a
similarity between:

   Although he tried hard, he couldn't succeed.
   However hard he tried, he couldn't succeed.

I think the necessary inherent feature of concessives, namely,
'adversativeness' is lacking with such conjunctions.

187. Onions (1971) notes an example where a shall future occurs. Will
would not be acceptable

   Where the tree shall fall, there it shall lie.

This is quite definitely archaic, and would have to be expressed
nowadays:

   Wherever the tree falls, there it is to lie.

188. past-tense forms can only have an iterative interpretation unlike
will-future forms.

189. The two utterances:

   She's keeping him home so that he won't catch cold.
   She's keeping him home lest he should catch cold.

seem to be (at least potentially) semantically distinct, though
it is not all that easy to pinpoint the distinction. With so that
the relationship between (she keep him home) and (he not catch
cold) is, I think, causal, i.e. the utterance entails: 'Keeping
him home will prevent him from catching cold'. Moreover, his
catching cold seems to be a foregone conclusion without this
measure. In the case of lest, I am not certain whether the re-
relationship is causal or not; but I think it is evident that his catching cold is only a possibility without the measure of keeping him at home.
Professor Lyons has suggested to me that *lest* implies reason rather than cause. In Lyons 1977, reasons are regarded as third-order entities, while causes are second-order entities (cp. Lyons 1977, p. 443).

190. Interpretable, however, if the person or being denoted by *he* habitually catches cold, cp.:

She's keeping him home for fear he catches cold easily.

191. Being somewhat uncertain about my reactions on some of the items in 14.17, I tested the responses of 5 native speakers: 2 were American, 1 Scottish, 1 English, and 1 from New Zealand. I asked them to indicate ✓ for acceptable, x for unacceptable, o for 'don't know'. I give a collation of the results below: column 1 indicates where 60% of the informants were in agreement; column 2 indicates where 100% were in agreement; and column 3 gives my own responses as in 14.17. Note that blanks here indicate ?, not acceptability.

<table>
<thead>
<tr>
<th></th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. She's keeping him home for fear he</td>
<td>✓ ✓ ✓</td>
<td>x ✓</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>will catch cold</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>shall catch cold</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>should catch cold</td>
<td></td>
<td>x ✓</td>
<td></td>
</tr>
<tr>
<td>catch cold</td>
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<tr>
<td>catches cold</td>
<td>x x</td>
<td></td>
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<tr>
<td>may catch cold</td>
<td>✓ ✓</td>
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<tr>
<td>might catch cold</td>
<td></td>
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<tr>
<td>b. She's keeping him home in case he</td>
<td>x x x</td>
<td>x x</td>
<td>✓</td>
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<td>will catch cold</td>
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<tr>
<td>shall catch cold</td>
<td>x x x</td>
<td>x x</td>
<td>✓</td>
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<tr>
<td>should catch cold</td>
<td>✓ ✓</td>
<td>✓ ✓</td>
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<tr>
<td>catch cold</td>
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<tr>
<td>catches cold</td>
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<td>x x x</td>
<td>✓ ✓</td>
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<tr>
<td>may catch cold</td>
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<td>✓ ✓</td>
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<tr>
<td>might catch cold</td>
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<tr>
<td>c. She's keeping him home lest he</td>
<td>x x x</td>
<td>x x</td>
<td>✓ ✓</td>
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<td>will catch cold</td>
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<td>shall catch cold</td>
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<td>should catch cold</td>
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<td>catches cold</td>
<td>x x x</td>
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<td>✓ ✓</td>
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<tr>
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<td></td>
<td></td>
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<tr>
<td>would catch cold</td>
<td>✓ ✓</td>
<td></td>
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<tr>
<td>d. She kept him home for fear he</td>
<td>x x</td>
<td>x x</td>
<td>✓ ✓</td>
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<tr>
<td>will catch cold</td>
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<tr>
<td>shall catch cold</td>
<td>x x</td>
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<tr>
<td>should catch cold</td>
<td>✓ ✓</td>
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<td>catch cold</td>
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<tr>
<td>caught cold</td>
<td>x x</td>
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<tr>
<td>might catch cold</td>
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<td>x x</td>
<td>✓ ✓</td>
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<tr>
<td>e. She kept him home in case he</td>
<td>✓ ✓</td>
<td>✓ ✓</td>
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<td>will catch cold</td>
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<tr>
<td>shall catch cold</td>
<td>✓ ✓</td>
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<td>should catch cold</td>
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<td>✓ ✓</td>
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<td>caught cold</td>
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<td>✓ ✓</td>
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<tr>
<td>might catch cold</td>
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</tbody>
</table>
would catch cold
should catch cold
catch cold
could catch cold
might catch cold

f. She kept him home lest he

wouldn't catch cold
shan't catch cold
shouldn't catch cold
not catch cold
doesn't catch cold
may not catch cold
might not catch cold

where

g. She's keeping him home so that he

won't catch cold
shan't catch cold
shouldn't catch cold
not catch cold
doesn't catch cold
may not catch cold
might not catch cold

h. She kept him home so that he

wouldn't catch cold
shouldn't catch cold

192. The paradigms also show in case to follow lest in other respects. In fact, in case is frequently the current equivalent of the somewhat antiquated lest. It can, however, have a different interpretation. Compare:

a. She's keeping him home in case he develops chickenpox.

b. *She's keeping him home lest he develop chickenpox.

If we assume that chickenpox may already have been contracted but that the disease has not yet gestated and manifested itself, then a is an appropriate utterance; and b is inappropriate apparently because lest precludes the possibility that the proposition is in any way factual, whether realized or still in the process of being realized. This distinction, or rather this ambiguity, would also partially explain why in case may also co-occur with the indicative while lest normally does not, cp. note 189.

193. One possibility that is rather appealing is that the specification (β(p)) in a proposition is related to: j p translationally. That is, that the subordinate clause: so that ... (not) ... has a modality marking for j and that this is translatable into (β(p)) which is then the specification for 'X want p', as in the paraphrases with because. This is tantamount to saying that: She kept him home so that he shouldn't catch cold and: Because she didn't want him to catch cold, she kept him home are not equivalent but only weak paraphrases of each other, which seems to me justifiable. This would, of course, mean, contrary to what was suggested in § 7.3.3, that β is not a modality of Mod (cp. § 7.4.1).

194. German would use a subjunctive here: either konjunktiv II or würde + infinitive.

Er entschloß sich (solange) zu warten, bis sie

käme. kommen würde.

195. In some forms of German, there is, I suspect, a distinction in the choice between bevor and ehe. It is usually said that bevor is NGerman and ehe is SGerman, or that bevor is current and standard
while *ehe* is old-fashioned and literary. My impression is that *ehe* is still frequently used in the kind of 'preventive' temporal clause I go on to describe here. I have in mind cases like:

*Ehe* was kaputt geht, geb' ich Ihnen noch eine Tüte.

said when a customer was trying to stuff too many things into a plastic bag.

German, too, has expletive negation in bevor-clauses, though this construction is awkward and fairly infrequent:

196. An epistemic interpretation becomes possible if the utterance is modified to, for example:

I'll phone him as soon as it seems that the plane may/might land.

197. Hornby (1954) suggests a semantic relationship between:

although + indicative, ... ≡ ... *may* ..., *but* ...

Although Green is only a farmer, he is quite well educated.

≡ Green may only be a farmer, but he is quite well educated.

Professor Lyons has pointed out to me that Hornby seems to view concessives in a way that is dependent on an 'I concede that ...' interpretation. It is, however, also possible to capture the meaning of concessive, or some of them, with a 'for all I know ...' interpretation, in which case the paraphrase with *may* will not work.

198. *mögen*, as we have seen in §§ 7.1.2 and 7.3.2, is a highly restricted item. This use is one of the two or three still productive uses in the contemporary language.

199. In my dialect there is a definite preference for the indicative with *although* and *even though*, *may* being more 'natural' with *though*.

200. Though this position may be tenable here, we have a problem with the use of *should* in 'putative' complements, for example:

I am surprised you should say that.

(cp. § 12.2.1), where we have no reason to analyze the complementizing verb as involving future t.

(The use of *should* as a subjunctive substitute in requesting, hortative or obligatory complements is not comparable with the subjunctive substitute discussed here.)

201. *shall* is possible with I-subjects and equivalent to the temporal sense of *will*, here indicated by $\mathcal{E}(= t)$. 

- 642 -
202. dispositional only when stressed: would.

Although he would do these things, everybody forgave him.

ε (= t) in habitual sense (≡ used to)

203. must seems to be interpretable here only if a sense like that in:

Must you do that, darling!
All right, if you must.

is assumed. This is paraphrasable by: 'insist on/find it necessary, etc.' It is not deontic in the usual sense, since this is not a case of the speaker's obligation (external obligation) but of the subject's determination.

204. as in:

Even if he would have failed yesterday, he won't today.

where presumably: if he had taken it is left unexpressed.

Even if he would have failed yesterday (if he had taken it), he won't today.

However:

?*Even if he will have failed yesterday (if he took it),
he can sit it again.

205. The noting of this phenomenon is generally attributed to J. P. Thorne in lectures and seminars at the University of Edinburgh (cp. Schreiber 1972).

206. There are, however, some speakers who do not object to such constructions. Nonetheless, there seems to be an observable difference. In the case of non-restrictive relatives, the scope of to tell the truth, etc. differs according to its position; in the case of restrictive relatives, the scope is the same whatever the position. Thus:

14.68a' ≠ 14.68a''
while: 14.68b' ≡ 14.68b''

i.e. what is commented upon as being true differs in the case of non-restrictives but cannot in the case of restrictives.

207. These sentences are of course acceptable, but they do not paraphrase the original example: so far as I can tell, they only have a 'future-in-the-past' interpretation.

208. Insofar as I have not done so already, I should perhaps make clear the differences between the analysis I arrive at and that arrived at in Lyons 1977. Lyons foresees under neustic (cp. my Ill) the following: · 'I say so', · 'I don't know', poss 'possibly' and •'not', whereas I propose: ·, ·, and ·, and am hesitant about □ and • under Ill. Lyons assigns the specification of imperatives and jussives to the tropic (cp. my Mod), which may be otherwise specified: · 'it is so', · 'so be it', poss 'possibly' and •'not', whereas I foresee under Mod: ·, ·, □, □, □, □, □, □, □.
The most obvious difference between the two approaches is in the treatment of imperatives, etc. In my approach, these (and performative utterances) are treated as instances of the 'world changing' illocution: !; in Lyons' approach imperatives are treated as being distinct from declaratives only in the tropic (cp. Mod), roughly: 'I say so - so be it - p'. There are also a number of other differences in analysis and points of interpretation (cp. Lyons 1977, especially pp. 725 - 849).
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The following bibliography includes all works referred to in the text. References are to author and year of publication. Where several works were published by the same author in the same year, they are distinguished by the letters a, b, c, etc. after the year. Where it is important to distinguish editions, this is noted by means of superscript figures, thus: ²1971, i.e. the second edition published in 1971. Where articles or monographs were in existence as mimeographs long before inclusion in an anthology, I have, where this is determinable, given the year of composition next to the author's name, the year of publication being given in the entry for the anthology under the editor's name.

With journals I give the year, the volume number, plus the issue number, thus: Foundations of Language 1971:IX:2, pp. ...

Where I have relied on quotations in secondary sources, the original being inaccessible to me or else available only in a language I do not read, I have noted in the text: 'quoted in X 1973', for example. I have not included the original work in the bibliography.

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Addenda and Corrigenda

p. 70 The reference to Vallentin 1974 is to a public lecture "Das Aufkommen der Satzmodalisation" held at the University of Freiburg, 10 May 1974.

pp. 88 - 89 The page references to Stoddart 1949 are missing. My source was the copy in the University Library Edinburgh. When completing the manuscript in Germany, I was unable to obtain a copy from any Federal German library to check the page references.

pp. 267/277 Here there is a jump in the page numbering from 267 to 277 which I missed when I first proof-read the typescript.

pp. 645 - 658 The following abbreviations appear without further explanation in the bibliography:

CLS = Papers from the Regional Meetings of the Chicago Linguistic Society, Chicago: Dept. of Linguistics, University of Chicago


NSF = Report to the National Science Foundation. Cambridge Mass.: The Computation Laboratory, Harvard University

TCLC = Travaux du Cercle Linguistique de Copenhague. Copenhagen