Root and Epistemic must

Root and Epistemic *must**

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Introduction

Much interest has been shown in trying to relate a systematic treatment of English modals to the variously observed facts of their syntax and semantics. In spite of the vastness of available literature, however, it is by no means easy to obtain an overall picture of current usage of English modals, because a number of different disciplines and sub-disciplines have approached the notion of modality from different starting points,[1] with the result of terminological proliferation, the same terms used by different linguisits to mean different things

Hofmann (1966)	epistemic	root
Halliday (1970)	modality	modulation
Anderson (1971)	non-complex	complex
Lyons (1977)	epistemic	deontic
Hermerén (1978)	neutral	internal/external
Palmer (1979)	epistemic	deontic/dynamic
Young (1980)	knowledge	influence

(1) For a survey of previous studies on English modals, see Hermerén (1978 : 15–52) and Ney (1981 : 70–124).

and vice versa, often with different nuances.

It has been, however, a common practice since Hofmann (1966) to use the terms *root* and *epistemic*, originally borrowed from modal logic, to distinguish between the two primary modal senses and it is now generally agreed that there exist certain syntactic and semantic criteria unique to each type of the modals.

The first criterion is concerned with the semantic feature of the subject NP. Root modals are generally incompatible with inanimate subjects because they refer to such notions as permission, obligation and ability which are intrinsically associated with animate beings. Epistemic modals, on the other hand, are not restricted in this way. They are basically indifferent to whether the subject is animate or inanimate, because they are concerned with a speaker's commitment to the proposition expressed in his utterance. To put it another way, root modals can usually occur with agentive subjects which are by definition "animate"[2], whereas epistemic modals can occur with any type of subjects, agentive or non-agentive[3], though they tend to occur with non-agentive subjects and "stative" verbs (cf. King 1972).

Second, they differ in respect of the co-occurrence restriction on the prefective construction. Root modals principally reject the perfect

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(2) This is especially the case with the modals which express what Her-
     merén (1978 : 95ff) calls internal modality. The root modals which express
     external modality is, however, free from such restraint.

(3) There is no general agreement about the defintion of "agent." It must
     be animate for some scholars who take "intentionality" as definitional for
     it, while it need not be animate for others who define it merely as "ini-
     tiator of an action". For them *the wind* in *The wind blew the table over*
     could be taken as "agent". For a more detailed discussion, see Dillon
     (1977 : 77ff).

aspect since obligation, permission and ability are basically related with an event or a state located in the future. It is impossible, for instance, to give such permission as " You may have come ", because what we permit can not refer to an event or state in the past. " You may have come " is therefore possible only in the epistemic sense, because it is quite natural to express our view of possibility of an event or state in the past.

Third, root modals can take the progressive only in certain limited stereotype contexts as in "I'm afraid I must be going now." Otherwise the progressive usually rejects the root interpretation as in, for instance, "He must be coming." Fourth, the interrogative usually favors the root reading. "May he come?" for instance, is possible only in the permission sense (see footnote (5)), though the affirmative "He may come" is, out of context, ambiguous between permission and possibility readings. The fifth criterion is concerned with *if*-conditional clauses, where only root modals are claimed to occur. The *will* in *if he will come*, for instance, should be root (volitional), not epistemic. The usual rule of thumb is "when *will* appears in a dependent conditional or temporal clause, it requires a volitional interpretation, because the sense of prediction is not available in that position" (cf. Leech 1971: 60)[4].

Sixth, these two types of modals behave differently under negation. *He may not come*, for instance, has the root intepretation like *I do not allow him to come*, where the modal alone is negated (external negation). It has also the epistemic interpretation. In this case,

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(4) Close (1979) argues against this long-established rule, quoting several examples where non-volitional *will* occurs in *if*-clauses. He concludes that epistemic *will* is acceptable in contexts where " assumed predictability " rather than " assumed future actuality " is involved. Tregidgo (1979) also discusses this usage in terms of " reversal of old time relations."

it is paraphrasable as *It is possible that he will not come,* where it
is the main verb *come* that is under negation (internal negation).[5]
Finally they tend to differ in respect of stress. Root modals tend
to be unstressed whereas epistemic ones tend to be stressed (cf.
Coates 1983). In *He may not come,* for instance, *may* will be stressed
in the possibility sense while *not* will be stressed in the permission
sense (Leech 1971: 68). We can summarize what we have so far
discussed as follows.

|	root	epistemic
agentive	+	±
perfective	−	+
progressive	−	±
interrogative	+	±
if-conditional	+	−
negation	external (modal) (cf. must)	internal (proposi- tional) (cf. can)
stress	−	+

In applying these general criteria to the interpretation of the
modals, however, we should bear in mind that there is not always a
clear distinction between the root and epistemic senses and that there
arises disagreement about the distinction in cases where linguistic or
non-linguistic contexts fail to exclude one of the two possible senses.

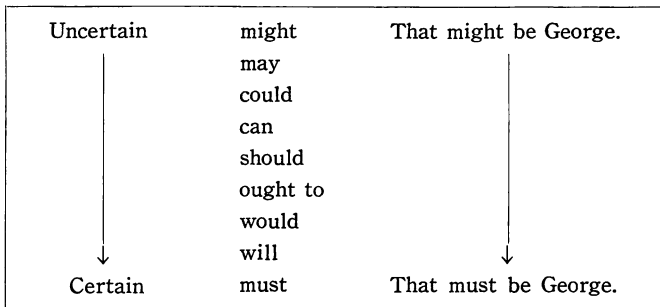(5)   The difference in position of the negative can be represented as follows.
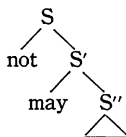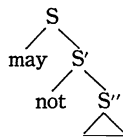
It is important to notice that in general only the modals that undergo
exteranl negation are possible in question (cf. Palmer 1979b).

This is especially the case with *can*, which, as suggested by Palmer (1979: 38), Watts (1984) and several others, has no clear division between root (permission and ability) and epistemic (possibility). As will be shown, we will encounter real and certain counter-examples to the criteria above in the course of our discussion of the root and epistemic uses of *must* observable in the corpus of written and spoken data.

1. Epistemic *must*

1. 1. Introduction

English is provided with several means of making modally qualified assertions—modal verbs, modal adjectives, modal adverbs and so forth. Since we are deliberately restricting our attention to the uses of modal verbs, especially *must*, we will have to leave out of account much of the complexity that a fuller discussion of modal expressions would require. The notion of epistemic modality can be expressed by such modal verbs as *might, may, could, can, ought to, should, would, will, must* and the quasi-modal *have to*. Close (1975: 273) presents the following modality matrix which arranges most of the modals above, according to the degree of certainty or uncertainty that a speaker feels about the propositional content of his utterance, with *might* and *must* at the extreme ends, the rest

Uncertain	might	That might be George.
	may	
	could	
	can	
	should	
	ought to	
	would	
	will	
Certain	must	That must be George.

occupying somewhere in between.

As should be apparent from the matrix above, a speaker can indicate varying degrees of his epistemic commitment. With *might* and especially its stronger equivalent *may*, the speaker can indicate that the state or action he is speaking of has a fifty-fifty possibility of being realized. He can therefore negate *may* immediately after it, indicating that his estimate of the possibility is equally balanced.

(1)   " We're civil servants," Brown said, " soliciting information from a private citizen who *may or may not* possess knowledge of a crime." [Ed McBain, *Jigsaw* (1970)]

This kind of use is not possible with the other modals, which are more or less inclined toward a higher degree of realization. With the other polarity *must*, a speaker can express his strong certainty about his propositional content. It is therefore incompatible with an utterance which suggests that the proposition may not be true as in:

(2)   *He *must* be at the office, *but I do not think so.*

This is not, of course, the case with the modals which indicate a weaker confidence to the proposition.

(3)   " You *might* be a husband, *but I don't think so.*" [N. Williams, *Blow Out* (1981)]

(4)   " Is this the kitchen you went in ? "
      " I don't know. It was dark. I guess it *could* be. *I don't know.*" [Ed McBain, *Sadie When She Died* (1972)]

(5)   This picture *could/*can* be a Chagall, *but is*, in fact, a Braque. [Hermerén]

We can see another difference between weak and strong modals. In the case of weak modals, for instance, we can brush off such a reproachful question as *How dare you think so?* in the following manner (cf. Hübler 1984 : 144ff).

(6)   " He *may* have lied." " How dare you think so ? "

"Why, I don't know. It was just an idea."

This is not possible, however, with *must* and other strong modals which express a more positive attitude to the proposition. Thus the example below sounds odd.

(7) "He *must* have lied." "How dare you think so?"

"Why I don't know. It was just an idea."

The oddity could be removed, if the reason for confident inference were expressed.

(8) "He must have lied." "How dare you think so?"

"He is a habitual liar."

It should be also noted that *must* differs from most of the other epistemic modals not only in the degree of confidence but in the range of time reference. *Must* in the epistemic sense, for instance, does not fit in with such an utterance as *He must come tomorrow* where future reference is explicitly made. We will discuss this problem in detail in section 1.6.

The distinction between weak and strong modals also emerges in the collocability with adverbs of likelihood such as *perhaps, possibly, probably* and *surely*. *Might* and *may* are naturally compatible with *possibly* and *perhaps*, which express the lowest degree of likelihood.

(9) a. It may perhaps/possibly happen.

b. *It may surely/probably happen. [Anderson]

By contrast, *must* can be "reinforced" by such a modal as *surely* which expresses a strong commitment to the actuality of the event referred to in an utterance. In respect of the amount of information conveyed, this construction is redundant in that its meaning is already signalled by either the modal verb or the modal adverb. Palmer (1979: 19) cites the following examples with *evidently* and *surely* from the Survey corpus.

(10) *Evidently*, she *must* have talked to her mother about

them, you see....

(11) It *must surely* be just a beautiful relic from the past.

To these we can add:

(12) "*Certainly* you *must* have realised that he was living beyond the salary he was earning?" [Ed McBain, *Blood Relatives* (1975)]

(13) ...a man who *undoubtedly must* have remarkable executive ability to rise so fast. [M. Zuroy, "Never Trust an Ancestor" (1963)]

Must can be also reinforced by modal adjectives like *sure* and *certain*. The frequent occurrence of the first person pronoun *I* as in "The baby is crying. His milk bottle is empty. *I'm sure* he *must* still be hungry," indicates that epistemic *must* is principally subjective (cf. section 1. 2.). Since *must* expresses a speaker's strong commitment to the factuality of an event revealed by his utterance, it is, as expected, incompatible with such adverbs as *possibly* and *perhaps* which denote a tentative prediction on the part of the speaker.

(14) *It *must* possibly/perhaps/probably happen.

Finally it would be interesting to note that *will*, which stands next to *must* in the strength of a speaker's commitment, can occur with any type of modal adverbs.

(15) He'll possibly/probalby/certainly/surely be in his office at the moment. [Anderson]

1. 2. subjectivity and objectivity

If we look at the scale of epistemic continuum in terms of the paraphrase relationship between *possible-that* and *possible-for,* we will come upon another interesting fact that *can* differs from the other epistemic modals, especially its weaker equivalent *may*. As suggested by the informant test conducted by Coates (1981), an epistemic *may*-construction like *He may come tomorrow* is normally paraphrasa-

ble as *It is possible that he will come tomorrow*, whereas an epistemic *can*-construction like *He can come tomorrow* as *It is possible for him to come tomorrow*.[6] To borrow the terminology from Coates, *may* is usually used to express epistemic possibility and *can* is almost exclusively used to express root possiblity. In the framework of Leech (1971), the former corresponds to factual possiblity and the latter to theoretical possibility. Lyons (1977) divides epistemic modality into "subjectivity" and "objectivity". The validity of this distinction is expounded on by Watts (1984), who argues that modals paraphrasable by a *for-to* complement clause express objective epistemic possibility while those paraphrasable by a *that*-complement clause express subjective epistemic possibility. To put it another way, in a *for-to* complement clause, the speaker's own involvement to the proposition is weaker than in a *that*-complement clause. The objective/subjective difference between these two clauses may emerge clearly in the following pair of sentences presen-

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(6) Boyd & Thorn (1969) look at the difference between the two modals from an angle of sporadic aspect. *Cocktail parties can be boring*, for instance, is paraphrasable with *sometimes* as in *Cocktail parties are sometimes boring*. It is to be noted, however, that *The cocktail party to be held at my house next Friday at six o'clock can be boring* is anomalous because a definite and specific party can not be sometimes boring and sometimes not boring, though such a party *may* be boring. This does not mean, of course, that a definite and specific subject is always incompatible with the sporadic aspect of *can*.

"*Father can* be terribly childish, but he means well..." [R. Macdonald, "The Bearded Lady" (1948)]

This use of *can* is sometimes "reinforced" by *sometimes* or *at times*, a phenomenon parallel to the cases of *may* and *must* which co-occur with modal adverbs like *possibly* and *surely* (cf. section 1. 1.).

And *at times* it (=Japanese conformism) *can* even be attractive. [G. Clark, *Understanding the Japanese* (1983)]

ted by Watts (1984).

> (16) (a) ?*According to* a medical report published yesterday
>   *it is possible that* certain types of work are very harmful
>   to the nervous system.
>   (b) *According to* a medical report published yesterday,
>   *it is possible for* certain types of work to be very harmful
>   to the nervous system.

The *according to* phrase introduces some other authority than the speaker himself. The low acceptability of (a) may well be therefor the result of the incongruity of *according to* which "shifts the source of modality away from the speaker to some other authority" with the *that*-complement which indicates the speaker's own belief or knowledge.

As shown by the difference in the paraphrase, *may* is subjective or speaker-oriented in contrast with *can*. In other words, it expresses a speaker's own attitude to the truth of what he says. This will account for the oddity of *may* in question.

> (17) ? May he come tomorrow?

(17) sounds odd just as *Do I think it is possible that he will come tomorrow?* does.[7] The same explanation will apply to *must*, which is, as mentioned above, principally subjective. Thus (18) sounds odd just as its paraphrase *Am I sure that he is hungry?* does.

> (18) ? (The baby is crying.) *Must* he be hungry?

1. 3. *must* and other modals compared

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(7) *May* can occur in question if it co-occurs with *when* and *what*.
   When may we expect you?
   What may be the result of the new tax?
 But a construction with *likely* or *think* is more usual.
   When are you *likely* to arrive?/When do you *think* you'll arrive?
 [Thomson & Martinet 1980: 115]. (See footnote (15)).

As shown by the scale of epistemic continuum, *will* stands next to *must*. In the terminology of Palmer (1979 : 47), *will* merely indicates " a confident statement," while *must* suggests " a confident conclusion from the evidence available." To illustrate this difference, he cites the following example.

(19) He *will* be in his office now. Yes, the lights are on, so he *must* be there.

Here the third sentence *he must be there* is a confident conclusion drawn from the available evidence " the lights are on." As shown by the example below, however, this difference between *will* and *must* is not always observed.

(20) " I have no idea where the museum is. I imagine it *must* be somewhere in the house which is a vast one-stroy building. As the museum contains many stolen treasure, it *will* be hidden and well guarded." [J. H. Chase, *The Vulture is a Patient Bird* (1962)]

It should be noted that the second sentence including *must* is uttered based not on the available evidence but on the speaker's own mental deduction.

The interpretation of *will* depends heavily on the functions of *be*. If *be* is locative or continuous, *will* is ambiguous between future prediction and non-future statement (inference), as in *She'll be in the kitchen* and *They'll be passing through Bolton*. The addition of an adverbial element would clarify the ambiguity.

(21) (a) She'll be in the kitchen *at the moment*.

(b) They'll be passing through Bolton *at the moment*.

If the verb *be* is passive, *will* permits only a future-prediction interpretation.

She'*ll be* punished for that.

The addition of *at the moment* will therefore result in ungram-

maticality.

*She'll be punished for that *at the moment.*

In many cases the evidence from which inference is made is not explicitly mentioned, because the knowledge and acceptance of extralinguistic factors are sufficient enough to justify the inferential conclusion drawn as in *There is the doorbell. It must be George,* where the speaker, expecting the arrival of George, need not mention this before he concludes. If contexts demand explicit reference to the circumstantial evidence on which the speaker's inference is based, two separate clauses are often juxtaposed as in:

(22) The baby is crying (cause). He *must* be hungry (consequence).

In this case the first sentence usually expresses the cause and the second including *must* expresses the consequence to be inferred from the first cause sentence. In this situation *should* rather than *will* may occur as a weaker equivalent of *must.*

(23) The baby is crying. He *should* be hungry.

It would be interesting to note that *should* differs from *must* not only in the degree of confidence in assumption but also in the range of time reference. With *must,* for instance, the time of " cause " is simultaneous with the time of mentioning " consequeence " whereas with *should,* the time of " cause " is posterior to the time of mentioning " consequence " rather than simultaneous with it. This difference, though very slight, would become clear if the sequence of cause-consequence is reversed.

(24) I can't hear any noise, he *must* be asleep.
          (consequence)   (cause)

(25) *I can't hear any noise, he *should* be asleep.
          (consequence)   (cause)

                                        [Rivière]

The second sentence *He must be asleep* expresses the cause from which the speaker infers the consequence denoted by the first clause *I can't hear any noise*, which refers to a state simultaneous with the time of utterance. The evidence on which the speaker is basing his claim that he can't hear any noise must be something in existence at present rather than verifiable in the future. As pointed out by Rivière (1981), this demand would conflict with the epistemic sense of *should* intrinsically associated with likelihood of future expectation, which can be paraphrased by "I think it is probable that ... (will) ... "

Should differs from *must* in one more respect. *Should* would be avoided in a context where an unfavorable situation in the future is implied. Compare the following pair of sentences.

(26) (a) I've mended it, so it *should* be all right now.

(b) *I've mended it, but it *should* break again.

[Tregidgo]

Similarly, R. Lakoff (1972) regards the following *should* as questionable in the epistemic sense.

(27) ? John *should* be hard to talk to.

No such restriction is placed on *must*. We can freely say:

(28) John *must* be hard to talk to.

What we have said about the difference between *must* and *should* will also hold for *must* and *should* in the perfect.

(29) You live in Oxford, you $\left\{ \begin{array}{c} must \\ should \end{array} \right\}$ have seen Prof.

Fen a short while ago then. [Rivière]

The second clause expresses the consequence inferred from the preceding one *You live in Oxford,* and the time of the consequence is posterior to the time of speaking. In such a case both forms are possible with a slight difference in the degree of certainty. As

is the case with (25), however, *should* is ruled out if the sequence is consequence-cause as in:

(30)   Harry is climbing in through the window, he $\left\{ \begin{array}{l} must \\ *should \end{array} \right\}$ have forgotten his keys. [Rivière]

In the epistemic sense, *should* is generally assumed to be a weak equivalent of *ought to*, but they differ not only in the degree of certainty but in respect of time reference. *Should* is, as mentioned above, more or less confined to future reference whereas *ought to* can refer to the present time as well as the future.

(31)   If they're coming by car, they *should/ought to* arrive about seven. [Alexander *et al.*]

(32)   "None of the farmers have seen him. So he's got to be hidin' in the swamp.... He *ought to* be hungry by now." [C. B. Gilford, "Swamp Rat" (1969)]

(33)   "It *should be* fine tomorrow. The sky is clear." [Dick Stodghill, "Kickback" (1983)]

On the whole the disticntion is not so clear-cut as it might seem. It would be therefore better to look at the difference between them in terms of stress and style rather than meaning. Prosodically, for instance, *ought to* tends to be stressed while *should* is generally unstressed. Stylistically *ought to* is more formal than *should*. (See also section 2. 4.).

1. 4.   *must* and *have* (*got*) *to* compared

The following pair of sentences are often quoted from Leech (1971) as an illustration to distinguish between *must* and *have to* in the epistemic sense.

(34)   (a)   Someone must be telling lies. (=It is impossible that everyone is telling the truth.): Factual possibility

        (b)   Someone have to be telling lies. (=It is impossible

for everyone to be telling the truth): Theoretical possibility

In Leech's interpretation, (a) voices a mere suspicion and (b) sounds more like an accusation. As suggested by the *impossible-that/ impossible-for-to* paraphrases, the possible distinction between *must* and *have to* is parallel to that between *can* and *may* we discussed in section 1.2. Namely *must* expresses subjective modality and *have to* objective modality. In respect of the interpretation of *have to,* Perkins (1983: 61) expresses the same view as Leech, but he differs from Leech in that he regards *must* as capable of denoting objective as well as subjective modality. In many cases, however, the factual/theoretical or subjective/objective distinction is not so clear-cut as it might seem to be. In this connection, it would be worthy of consideration to compare the paraphrases van Ek & Robat (1984: 296) present.

(35) (a) He *has (got) to* be ill (I cannot think of another reason for his absence).

(b) He *must be* ill (=He is not at the office, he was complaining yesterday he could hardly walk, and this morning I saw the doctor stop before his house).

It should be noted that the paraphrases do not seem to fit well with the objective-subjective distinction above. The presense of the first person *I* in the first paraphrase, for instance, indicates the speaker's own belief rather than report as a neutral observer of the existence of a state of affairs. This is apparently incompatible with the objective interpretation exclusively assigned to *have-to* constructions in Leech (1971) and Perkins (1983).

As often pointed out, the epistemic use of *have (got) to* is not common in British English. Coates (1983: 57) attests only one

example in the Lancaster corpus and none in her Survey material.
She concludes that this usage is still an Americanism and that it is, for
the most part, associated with the teenage subculture. In American
English, *have (got) to* is more common than *must* at least in informal
conversation, irrespective of the subjective/objective difference.

1. 5. *must* and *had to* in past-time contexts

   Must can occur freely in past-time contexts as long as it is
confined to reported speech as in:

   (36) He thought he heard a noise downstairs, but decided
        it *must* be his imagination. [E. D. Hoch, "The Theft of
        the White Queen's Menu" (1983)]

Outside reported clauses, however, *must* is usually to be replaced
by *must have done* or *had to* according to whether the speaker's
assumption is made at the time of utterance or not as in, for
instance, *She must have been mad to say such a thing* or *She had
to be mad to say such a thing*. In American English, the most
common form is *had to*, which can appear freely either inside or
outside reported clauses. As shown below, it usually collocates with
the stative verb *be*.

   (37) Weaver might be behind it, Weaver *had to* be behind it.
        [S. Wasylyk, "Dead End" (1983)]

   (38) It took Clude nearly two weeks to decide for sure there
        was only one place from which the old man could scrape
        up money. The bankroll *had to be* there in the shack.
        [G. B. Gilford, "Swamp Rat" (1969)]

In the following example, it is to be noted, *had to* occurs side by side
with *must* plus have+perfect infinitive. *It had to be him* could
have been *It must have been him*.

   (39) "Who could have taken it?"

        "Richard," she said. "It *had to be* him. He *must have
        been* paying out expenses for the clinic...." [T. Barrett,

"St. Anne Mystery" (1984)]

Just like root *must*, there seems to be a tendency for epistemic *must* to be used even outside reported clauses. We will quote such an example from Jacobsson (1979):

> (40) He was a detective, and *must* be at least six feet tall, big through the shoulder and with the beginning of a gut.
> [N. Mailer, *An American Dream*]

In this connection, it would be interesting to note that *must* and *had to* are used interchangeablly in the example quoted below.

> (41) Could all this be caused by a little scratch, he wondered. No, it was impossible that any bite or claw wound could have such a swift reaction. It *must be* a combination of the shock he had just received and the alcohol still in his system. That *had to be* it. [M. Maryk & B. Monahan, *Death Bite* (1979)]

In American English, even *had to*+perfect infinitive constructions are possible, though not very common.

> (42) "You're forgetting that Randall was shot with his own rifle. Whoever did it *had to have known* that it was in the closet." [G. S. Hargrave, "Sheriff Bigelow and the Bare Cold Facts" (1984)]

> (43) "You know they're dead, for Christ's sake, you *had to have seen* those pictures in the paper." [Ed McBain, *Hail to the Chief* (1975)]

According to *A Supplement to the OED, could be* has been in use since 1938 as a kind of sentence adverb in the sense of *it could be (that)*. We can see a similar tendency even in *had to be*.

> (44) "...What else can I think? Whether Gilfford drank it, or swallowed it, it had to be just before he went on."
> "*Had to be.* The poison works within minutes, and the capsule takes approximately six minutes to dissolve. He was on for seven."

"Seven minutes and seventeen seconds," Meyer cor-
rected.

"You think he took it knowingly?"

"Suicide?"

"*Could be.*" [Ed McBain, *Forty Million Eyes* (1966)]

1. 6. *must* in future time reference

In sentences where futurity is explicitly marked, *have to* must
give way to *must* as in

(45) They $\left\{\begin{array}{l}\text{must} \\ \text{※have to}\end{array}\right\}$ arrive soon.

But the acceptability of this use of *must* itself is not stable. Frank
(1972: 101), for instance, states that *must* in the sense of probability
is not used for future time. Coates (1983: 234) is a little more
tolerant in admitting that *must* can "refer to states and activities in
the past, present and future," but with the reservation that *must* in
this use is rare. More tolerant is McIntosh (1966), who cites (46)
as an example which is paraphrasable as *be sure/certain to.*

(46) Then they *must* arrive here *about noon on Tuesday.*

The instability of this use of *must* would be due to the fact that
since epistemic *must* indicates an inference based on presently
available evidence, it is inherently incompatible with the idea of
future, which, unlike the present or past, can never be confirmed
until it is no longer future. Tregidgo (1982) quotes the following
example as a merger of epistemic and root meanings.

(47) Smith is unmarked on the left——he *must* score!

Here a supposed football commentator is reporting an event in
progress and uses *must* to predict an event bound to happen in the
immediate future. The second sentence is intended to indicate not an
inevitable conclusion but an inevitable result of the circumstances
"Smith is unmarked on the left." It seems that this use of *must* is

fairly common in sports commentary. Coates (1980) also cites the following example from the Survey corpus.

> (48) McKenzie in, bowls to Edrich, and that pops up and he
> *must* be caught——no, it's over Burge's head. My word,
> that was a lucky one.

It is interesting to note that *He must be caught* is far more compact than either of the supposed paraphrases *I'm sure he will be caught* and *Inevitably he will be caught.* *Must* is therefore suitable to play-to-play broadcasting.

When accompanied by a progressive form *must* can be used freely in a context where an event or state is located in the future as in :

> (49) (a) John is all spruced up, he *must be* going to a party.
> [Rivière]
> (b) He *must be* coming back to Europe sometime
> about March. [McIntosh]

Plamer (1979 : 45) observs that if *must* occurs with future reference, it will almost always be interpreted in a dynamic, not an epistemic sense. This would be especially the case with examples like (46) where *must* occurs with an agentive subject. In a context where such an agentive interpretation is ruled out, however, *must* becomes more acceptable as in.

> (50) Something *must* happen next week./It *must* rain tomor-
> row. [Palmer]

It is worthy of note that all the examples with *must* in future reference which McIntosh and Palmer cite are " invented " ones. This seems to indicate that *must* with future time reference, though theoretically plausible, is actually very rare, whether it occurs with an agentive or a non-agentive subject.

One of the alternative expressions for *must* in this context is *be*

bound *to.*[8]

> (51) Even if the body is never recovered, eventually she *is*
> *bound to* be reported missing. [R. Deming, " Kill, If You
> Want Me ! " (1952)]
>
> (52) " Hugh's show opens tonight. He'*s bound to* come back
> for that." [R. Macdonald, " The Bearded Lady " (1948)]

1. 7. *must* with active verbs

As mentioned in Introduction, epistemic modals such as *must*
favor stative verbs as their collocates. If *must* occurs with an
active verb as in *He must come*, for instance, it usually rejects the
epistemic interpretation.[9] We should note, however, that there are
some cases where epistemic and root readings compete—some cases
where the epistemic reading is not necessarily excluded even when
must collocates with an active verb. This is especially the case with
contexts where habitual activity is implied.

> (53) The house was in darkness and they crouched by the
> fence and Lomax checked his watch. It was barely nine
> o'clock and he frowned. " *They must go to bed early.*"
> Alexias shrugged. " They lead a hard life, these peo-
> ple." [J. Higgins, *The Dark Side of the Island* (1963)]

In the situation above, Lomax could have said, " They must have
gone to bed early," if he had had in mind their particular activity at
a particular night. But Lomax had already known enough about the
daily custom of those people living there. His inference therefore
extended over to their habitual activity, not confined to their activity at

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(8) Palmer (1979 : 46) paraphrases this pseudo-modal as " it is inevitable
that. . . " and comments that it may not be wholly epistemic but partly
dynamic.

(9) *Must* can refer to indefinite future in statements of pure logical
necessity with no element of speaker involvement as in *Capitalism must
lead to war.* (Cf. section **2.6.**).

a particular night. In the following instances, the aspect of habit-
uality is "reinforced" by frequency adverbs such as *regularly* and *at*
nights.[10]

> (54) He *must travel* to Londan *regularly.* [Palmer]
> I always see Mr. Smith coming home in the early
> morning. He *must work at nights.* [Spankie]

1. 8. *must not* for *can't*

It is generally accepted that epistemic *must* has no negative form
(cf. Thomson & Martinet 1980: 132; Swan 1980: 394). For instance,
the negation of *That must be true* will be *That can't be true,* not
That mustn't be true. Is *mustn't* or *must not* truly impossible in
the epistemic sense? Most grammarians seem to think so and
regard *can't* as the only possible form. There are, however, a few
grammarians or linguists who are aware of the existence of *mustn't.*
Boyd & Thorn (1969), for instance, see *must* in "They *must not* be
married" as "possible" but "stilted" in the reading of "necessity
statement" and suggest that "They can't be married" is a more
natural sounding form, Similarly, Anderson (1970: 99) observs that
He can't arrive before six and *It can't be true* are more appropriate
as the corresponding negative form to 2(b) and 4(b) below respective-
ly, but he does not totally rejects the froms with *mustn't.*

> (55) 1 (a) I'm sure he'll arrive before six.
> (b) He must arrive before six.
> 2 (a) I'm sure he'll not arrive before six.
> (b)
> 3 (a) I'm sure it's true.
> (b) It must be ture.

---

(10) This does not mean, of course, that *must* with a frequency adverb is
always limited to the epistemic reading. Hermerén (1978: 11) regards
must in *He must come regularly* as "neutralized" between "obligative"
(root) and "inferential" (epistemic).

4 (a) I'm sure it's not ture.

   (b)

Palmer (1979 : 54) also accepts *mustn't* as a possible form and
cites his invented example *He mustn't be there after all*, which
he paraphrases as *The only possible conclusion is that he is not there*
(propositional negation). Halliday (1970; 333), on the other hand,
refers to a special context which allows *mustn't*—a verbal-crossing-
out context where the modality, not the proposition, is negated.[11]

(56) He must be there——Oh, he *mustn't*.

It is interesting to note that all the examples cited above are
not actual but " invented " ones.[12] In this connection, Jacobsson (1979)
is worthy of mention. He attests this use of *must* as a usage
that appears to be fairly recent in origin and points out that it
is still largely ignored in the grammatical literature. He cites
several actual examples from recent periodicals and novels. We
will quote one of them.

(57) Jem would say she *must not* be very sick, she hollered
      so. [Harper Lee, *To Kill a Mockingbird*]

---

(11) *Mustn't* in the epistemic sense is usually taken as propositional
     negation (cf. Cook 1978 ; Perkins 1983 : 49). Logically the modal negation
     not possible (i.e. *can't*) is equivalent to the propositional negation *nec-
     essary not* (i.e. *mustn't*). In English the former usually substitutes for
     the latter (cf. Palmer 1979b).

(12) Coates (1983 : 46) reports that there are no examples in either the
     Survey corpus or the Lancaster corpus she consulted. In the corpus
     of spontaneous conversation of 6-to-12-year-old children, however, Perkins
     (1983 : 149) counts two cases of *mustn't*, one of which is evidently
     epistemic, corresponding to " verbal-crossing-out " above.

     S : There's gotta be a door upstairs ' cos...

     K : There *mustn't*.

Young (1980 : 93) regards this negative use of *must* as Lancashire
dialect.

It seems that the negated form is more common in the perfect construction.

> (58)   He *must not have been* in the army very long to be so
>   thin, he thought. [Hemingway, *Islands in the Stream*]
>   [Jacobsson]

1. 9. *must have*+past participle

It is common knowledge that *must have*+past participle[13] is used to refer to the inferred certainty of something which happened in the past. The non-modal part of *He must have gone* is, for instance, *he went*. It is interesting to note, however, that the *have*+past participle part is not always a simple past. It may be any of the prefect forms, depending on the context. *He must have gone* therefore allows two more interpretations——*I am sure that he has gone* (present perfect) and *I am sure that he will have gone* (by now) (future perfect).

Since this construction is somewhat lengthy, there seems to be a tendency to avoid the repetition of it for stylistic reasons. Consider (59).

> (59)   Surely Uncle Hector *must have been* murdered by an
>   intruder. He *had heard* the noise downstairs. He *had let*
>   himself into my dressing room, gotton the revolver from
>   the dresser, and gone downstairs to investigate. In the
>   library he had been overwhelmed by the intruder and
>   shot. [J. Ritchie, "Four on an Alibi" (1983)]

The modal perfect occurs only once, but the whole passage represents guesses about the murder of Uncle Hector——guesses about what he must have done before he was killed. Thus the succeeding sentences should have been:

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(13)   It is sometimes spelled as *musta* or *must'a* as a representation of the colloquial or vulgar pronunciation of *must have*.

(60) He *must have heard* the noise downstairs. He *must
have let* himself into my dressing room.... In the library
he *must have been* overwhelmed....

A similar observation could be made on the following instance where
had to occurs.

(61) But how could the police have discovered her so quick-
ly? *It had to* be an accident ahead! That was it, some-
one *had had* a wreck. [M. V. Derveer, "The Muderess"
(1967)]

The last sentence appears in the past perfect just like (59) above, and
it is not a statement of a fact but concerned with inferred certainty.
Therefore it should have been *Someone had to have had a wreck*! or
more standardly *Someone must have had a wreck*! (For *had to have*+
past participle constructions, see section 1.5)

2. Root *must*

2. 1. *must* and *have (got) to*

The difference in usage between *must* and *have to* in the root
sense has been a matter of controversy. Some grammarians rec-
ognize little or no difference between them except that *have to* is
syntactically available as a suppletive form of the "defective" *must*.
Others are in opinion that these two are by no means semantically
equivalent: *must* expresses a demand or obligation imposed by the
speaker usually on the hearer, but sometimes on himself (subjective),
whereas *have to* denotes an obligation imposed by some external
factors beyond the speaker's control (objective). Thus in *You must
go now*, which is obviously close to the imperative *Go now*, stress is
on the speaker himself who feels it necessary for the hearer to go,
while in *You have to go now*, the obligation is interpreted as coming
from somebody else or some regulations. The speaker is asserting

that the necessity of the hearer's going exists, on the basis of some external force. It is therefore not the speaker himself that feels it necessary for the hearer to go. In this connection, it is interesting to note the oddity pointed out by R. Lakoff (1972).

(1) ? You *must* go now, but I think it's idiotic.

The oddity can be ascribed to the absurdity derived from the fact that the speaker regards as idiotic the obligation he himself imposes on the hearer.[14] There exists no such oddity in (2).

(2) You *have to* go now, but I think it's idiotic.

Here, as is often the case in everyday interaction, the speaker judges idiotic the obligation imposed on the hearer by somebody or something other than himself.

The difference between *must* and *have to* can be looked at from a different angle, habitual and non-habitual. In a context, for instance, where focus of attention is on a specific occasion, *must* is said to be preferred as in:

(3) You *must* be at the office early tomorrow morning.

On the other hand, *have to* is usually chosen in contexts where an obligation streches back into the past and forward into the future.

(4) You *have to* be at the office at nine every day.

Here a habitual aspect is overtly expressed by a frequency adjunct such as *every day*. It is to be noted that this difference between habitual and non-habitual is not inconsistent with the view mentioned above that *must* denotes speaker-oriented obligation and *have to* external obligation. (3), for instance, might be uttered by a person who might have some special work he wants the hearer to do early

---

(14) Bouma (1975), who recognizes no significant semantic difference between *have to* and *must*, attributes the oddity not to the semantic incompatibility but to stylistic incongruence of *must* used in an implied conversational context.

tomorrow morning and the most likely occasion when (4) might be uttered would be when the speaker wants to inform the hearer that he is in the state of the obligation resulting from the regulation of the company which requires the employees to be at the office at nine every day.

As is apparent from the discussion above, the idea of habitual and non-habitual is closely related to what Tragidgo (1982) refers to as "present demand" and "(resulting) state of obligation." He accounts for the unacceptability of (5) *I can't see you tomorrow : I must take an exam, as follows.

> MUST is concerned with the present imposition of de-
> mands. Thus (5) implies : 'Some authority or constraint
> imposes this demand on me'. But the demand to take the
> exam tomorrow was surely imposed at some earlier time.
> The taking of the exam has already been demanded.
> What remains now is a state of obligation. States of
> obligation, resulting either from a demand or from some
> more physical constraint, are expressed (contrary to Lyons
> 1977 : 833-4) not by MUST but by Have To.

So far we have been concerned with relatively straightforward cases where the second person pronoun *you* occurs as subject. The situation would become a little more complicated with the case where the first person pronoun is used as in

(6) I *must/have to* be at the office early tomorrow morning.

In cases like (6) where the speaker and the subject coincide, the distinction between speaker-oriented obligation and external obliga-tion becomes less clear-cut, because the source of obligation is always internal. *Must* seems to associate the speaker more closely with the obligation imposed on himself than *have to*, which tends to disas-sociate the speaker from it. In *I must go now*, for instance, it will be implied that the speaker himself accepts the validity of the

obligation and feels it urgent to perform it. With *have to*, however, it is a more objective statement of a fact that the speaker is under a certain obligation. In this case the speaker might not feel such a self urgency as he might otherwise feel. It is a matter of everyday observation, however, that such a distinction is hard to make, because an objective statement of an obligation that lies on the speaker often results in bringing it to bear upon the speaker himself. Consider (7), where the speaker switches from *must* to *have to* for no obvious reason:

(7) "Are you going back to work this afternoon?"
"Of course, I am."
"Must you?"
"Yes, I really *must*. Ever since this business began our office had been swamped, letters and telegrams from all over the world..."
....
"You know I'll do anything I could. But I *have to* get back, really I do." [N. Carter, *The Dominican Affair* (1982)]

cf.

(8) To pick up the full meaning of what someone says on the phone, you *have to* pay attention to the way the voice rises and falls. Where the pauses come.... Is your caller smiling or frowning?... Are any of these extra messages signals to you that you *must* do something quickly? [E. Ehrlich & G. R. Hawes, *Speak for Success* (1984)]

Palmer (1979: 21) justly points out that there are some circumstances where *must* and *have to* do not differ in meaning——circumstances where it is not clear whether the replacement of one with the other will result in difference in meaning. From the analysis of the examples from the Survey corpus, Palmer concludes that there may be some complete overlap in the area of neutral necessity, though

must may be preferred where the speaker involvement is evident and *have to* chosen where external necessity is dominant. It should be remembered that *must* is not entirely ruled out even in cases where external necessity is obvious from the context. Consider (9).

(9) You must go now. Mother says so.

Here the directive is obviously external to the speaker, as shown by the tag *Mother says so.* Thus *must* is not uncommon in the context of reproting rules and regulations.

(10) Each candidate *must* complete an accessory course in
    the first year of the Honours Course. [Wood]

If a speaker utters (10), he is not conveying his own command. He is merely reporting the regulation issued by, say, the school authorities. By contrast, *have to* is almost impossible in contexts where the speaker involvement is prominent.

(11) ? You *have to* go, if I say so.

Must is more or less fossilized in contexts where one declares what Fate or God dictates.

(12) All men *must* die.

In (12), the obligation originates from some authority which transcends the speaker. In such contexts, *must* cannot be replaced by *have to* without the loss of solemn or demanding tone (see section 2.6.).

It follows from the obsevation above that the distinction between *must* and *have to* is not so clear-cut as some grammarians have claimed. In actual usage they are often used interchangeably without any detectable difference in meaning, though there is a tendency for one to be preferred to the other, depending on whether the source of the dicrective is speaker-oriented, neutral or external. In terms of speech act theory, *must* is closely associated with such illocutionary acts as warning and demanding, which are more or

less emotional, authoritative, or subjective, whereas *have to* is related with such illocutionary acts as stating and reporting, which are less subjective and more objective.[15]

2. 2. *must* and *have* (*got*) *to* (II)

Our final observation on the distinction between *must* and *have* (*got*) *to* is that the situation may considerably differ with American English, where *have to* is outing *must* at least in informal situations.[16] To put it another way, *have to* tends to be preferred irrespective of whether the source for directive is speaker-oriented, neutral or external (cf. Bouma 1978).　It seems that there is emerging a similar tendency even in British English. Based on the observation of a corpus of spontaneous conversation among 6-to-12-year-old children, Perkins (1983 : 151) concludes that *must* is a "suppletive form of *have* (*got*) *to* rather than the other way round as many grammatical analyses would predict."　In his data, *must* occurs only 21 times (1.2% of the overall total) whereas *have* (*got*) *to* amounts to the total of 255 (14% of the overall total), the third most frequent modal expression next to *can* and *will*.

A possible reason for the decline of *must* may be that since

---

(15)　The distinction between subjective and objective emerges most clearly with epistemic *may* and *can* in yes/no questions.

    (1)　*May he come?

    (2)　Can he come?

(1) is impossible because *may* is subjective. In other words, (1) is semantically equivalent to the absurd question *Do I think it is possible that he will come?*

(2) is perfectly acceptable.　It is merely questioning whether the proposition is objectively possible. (See section 1. 2.)

(16)　It can be said that *must* is more or less limited to the oratorical and deliberative registers while *have* (*got*) *to* frequently occurs in the casual register.　In the consultative style, the two forms may compete.

must is originally speaker-oriented, it tends to sound imposing and rude especially when uttered to a person who has some authority over the speaker or even a person of the same age and sex as the speaker himself. To avoid the impositive impression one naturally gives up *must* for *have (got) to* and tries to convey his command or request to his hearer as if he were merely reporting another person's command or request. Consider (13).

> (13) " Mrs Kellerman, I've got to speak to Orval.
> It's important."
> " Dear, I'm awfully sorry. He's outside working with the dogs, and you know I can't disturb him when he's working with the dogs."
> " You've *got to* ask him to the phone. *Please*. Believe me, it's important." [D. Morrell, *First Blood* (1972)]

The request is evidently speaker-oriented. The expected form is therefore *must*. But the speaker used *have got to* to avoid sounding authoritative and further softens his request by using the mitigation particle *please*.

We can see a similar trend between root *may* and *can* in the permission sense. In informal English, *can,* which is neutral in respect of the source of authority, is much preferred as a democratic form to *may*, which implicates the speaker as the person in authority. We can say that *can* has encroached on the root territory of *may* to the extent that it is now well established as a more polite form especially in the context of giving and refusing permission,[17] though in formal situations *may* is still a form popular grammar books and usage dictionaries recommend.[18] It seems that *must* is just following the same path as *may* has taken.

2. 3. *have to* and *have got to*

So far we have treated *have to* and *have got to* without distinc-

tion because their central meanings are very nearly identical. A close examination of the two forms however will reveal that they sometimes behave differently in certain circumstances. Stylistically *have got to* is more informal than *have to*. In informal conversation *have got to* is usually contracted into *'ve got to* and even reduced into *got to* (often spelled as *gotta*). Syntactically they show remarkable difference. *Have got to* has no non-finite form. We can not therefore say :

(14)　(a) *We *will have got to* start now.

　　　(b) *It is odd *to have got to* start now.

In question, *have got to* usually undregoes inversion as in *Have you got to...?* while *have to* needs *do*-support as in *Do you have to...?* [19] The same is true with negation. Contrast *have not got to* with *do not have to*. Thus syntactically *have got to* is much closer to true

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(17)　The develpment of the root use of *can* began toward the end of the 17th century when *may* began to lose its dynamic possibility sense and acquire root possibility sense. *Can* is now going through a similar process——from dynamic to root. But it has not yet reached the author-itative stage of *may*. It is neutral in respect of the source of directive. *You can park here,* for instance, can mean either *I give you permission to park here* or *You have a right to park here/The police will allow you to park here.* (Simon-Vandenbergen 1984 ; Magnera 1984 ; Thomson and Martinet 1980 : 113).

(18)　In asking for permission or offering help, *may* I? is generally believed to be more polite than *can* I? In terms of optionality given to the hearer, however, *can* I? is more polite than *may* I? because the former gives the hearer more options for reply, the latter restricting the hearer's opportunity of saying " No ". For a more detailed discussion, see Dillon (1977 : 113ff).

(19)　It is generally said that British English prefers *Have you got to?* to *Do you have to?* but the latter form is becoming common in British English, the former becoming restricted to formal usage verging on the stilted (Leech 1971 : 73).

modals such as *must* and *can*. Semantically they somewhat differ
in respect of objectivity/subjectivity distinction. *Have to* is generally
restricted to "external necessity" which means that the deontic
source is other than the speaker himself, whereas *have go to* is not
restricted in this way. It seems to cover a wider range of meaning.
It can be used where greater speaker-involvement is implied (Coates
1983: 52ff). They also differ in respect of habitual/non-habitual
aspect. *Have got to* is generally restricted to non-habitual contexts
while *have to* is not (cf. Palmer 1979: 92 ff.; Leech 1979: 73 ff.).
Compare (a) and (b).

(15) (a) I *have got to* get up early tomorrow morning.
        I *have to* get up early tomorrow morning.
        I *must* get up early tomorrow morning. (non-
        habitual)

    (b) *I *have got to* get up early every morning.
        ?I *must* get up early every morning.
        I *have to* get up early every morning. (habitual)

From the observation above it would follow that *have got to* is closer
to *must* in that it is mostly subjective and non-habitual. In the
following example, the two forms are used interchangeably.

(16) I'*ve got to* keep my nerve, he said to himself, I'*ve got
    to* gain time. I'*ve got to* work out a way to get out of this
    goddamn country. But first things first. I can't leave him
    lying here. Suppose someone called? You never know
    who might drop in on a Sunday afternoon. I *must* get him
    upstairs and out of sight.
    [J.H. Chase, *A Lotus for Miss Quin* (1976)]

2. 4. *must, should* and *ought to*

There have been considerable debates on the possible difference
between *should* and *ought to* in the root sense. Some grammarians
claim that *ought to* is stronger or more morally-colored than *should*

(e.g. van Ek & Robat 1984: 287) and others say that both are vir-
tually the same (e.g. Palmer 1979: 100; Coates 1983; 81). They
share the same view, however, that both undergo modal negation and
that both are weaker than *must* in that neither a speaker's authority
(as with *must*) nor external authority (as with *have to*) is involved.
Under certain grammatical circumstances, they behave differently.
In question, for instance, *should* is preferred to *ought to* perhaps
because such a form as *Ought he to go there alone*? sounds somewhat
awkward. In negation, too, *shouldn't* is more common than *oughtn't*.
Shouldn't can even replace *oughtn't* in the tag as in *He ought to get
some sleep, shouldn't he*? (cf. Young 1980: 62). In respect of the
overall frequency, therefore, *should* is more frequent than *ought to*.[20]

2. 5. *must not* and *do not have to*

In the case of the negative form, a clear distinction can be made
between *must not* and *do not have to*. The former expresses prohibi-
tion (propositional negation) and the latter expresses non-necessity or
negative obligation (modal negation).[21] *Need not* is parallel to *do not
have to* but less common in American English (cf. Jacobsson 1979).
In this prohibitive use, *must* may shade off into *may not* especially
in the context of anouncing rules and regulations.

(17) A borrower *may not/must not* take from the library

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[20] van Ek & Robat (1984: 287) attempt to make a distinction between
should and *ouhgt to* in terms of objectivity and subjectivity. They
state that *ought to* conveys the notion of obligation objectively and
should does so subjectively.

[21] The disticntion might not be so clear-cut as it appears to be. Perkins
(1983: 61-2), for instance, points out that *haven't got to* and *do not have
to* are occasionally used to express prohibition as in:

You *haven't got to* park on double yellow lines—it is against the law.
Palmer (1979: 95) makes a similar observation that *you don't have to do
that* can (rarely) mean *You mustn't do that*.

more than two books at any one time.

Anyone reading this on the bulletin board would have no doubt that it is meant to be read as a prohibition order, whether the employed form is *must not* or *may not*. In other contexts, however, *must not* indicates that an adressee has no choice but to refrain from performing a certain action, serving as a stronger variant of *may not* which indicates a refusal of permission or negative permission (cf. Palmer 1979b).

> (18) "May I just keep the book for a few days?"
> "You *may not*." she plucked it form him and dropped it back. [E. D. Boylan, "Death Overdue" (1982)]
> (19) "You *mustn't* talk any more. You're not allowed to talk, It's bad for you. Just lie still and don't worry. You're fine." [R. Dahl, "Lucky Break" (1977)]

In (19) a nurse forbids a patient to talk and adds that the prohibition is not her own but somebody else's, probably the doctor's, by continuing her discourse with the more objective prohibition *You're not allowed to talk*. In the following situation a man is going to walk out on a woman. She is trying to stop him by begging and

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(22) Another difference between *must not* and *may not* emerges in negation. In *You may not go*, for instance, the modal *may* is negated (modal negation), paraphrasable as *I don't allow you to go*. In *You must not go*, on the other hand, what is negated is the proposition (propositional negation). It has the interpretation that I require that you do not go. To employ the notation given by Newmeyer (1975 : 74) the difference can be represented as in

> (You) (neg may) (go)
> (You) (must) (neg go)

Theoretically it would be possible to use two negatives with *may* as in *You may not not go*, one negating *may* and the other negating *go* and it might have the interpretation "I do not allow you not to go," which is practically equivalent to *You must go*. See also Palmer (1979b).

entreating him with such phrases as "You can't leave me!", "You're not to go!", "You're not leaving!" and "I won't let you leave!", but not "You mustn't go!" which presupposes the superior status of the speaker.

> (20) "You can't leave me! I've done everything for you. You're not to go!........" You're not leaving!" Mimi's face blotched with red and her eyes were glaring. "I won't let you leave!" [J.H. Chase, *The Vulture is a Patient Bird* (1969)]

2. 6. contexts that favor *must*

In this section we will discuss some contexts in which *must* is almost exclusively used, in spite of the trend for *have to* encroach on *must*. (See section 2.2). First, mention should be made of *Must you...?* This form is a kind of conventionalized indirect speech. *Must you go?*, for instance, is not normally taken literally as a question to ask whether the hearer is under obligation to go or not, but conventionally taken as a negative command equivalent to *You mustn't go*. This is exactly the case with *Should you...?* (which is usually interpreted as *You shouldn't...*). It should be noted that *Do you have to...?* and *Have you got to...?* have no such conventionally derived meaning (cf. Leech 1971 : 86). They allow only a literal interpretation under normal circumstances.

> (21) "Look, Rhoda, *must you* always refer to Mrs Vidal as slinky?" "Why shouldn't I? Do you object?"
> [J. H. Chase, *Believe This... You'll Believe Anything* (1975)]

We can see a similar usage of *must* in *if you must*, a set phrase which expresses a speaker's petulant irony to the hearer's stubborness or insistance.

> (22) *If you must* behave like a savage, at least make sure the neighbors aren't watching. [Tregidgo]

Second, *must* is exclusively used as hedge in collocation with such performative verbs as *say, admit, ask, reiterate, confess, concede, mention* and *warn.* In *I must warn you not to go there,* for instance, *I must warn you* serves as a polite mitigation of *I warn you.* The illocutionary act of warning is usually unfavorable to the hearer and it is generally presupposed that the speaker is superior in experience and knowledge to the hearer. In order to act on what Leech (1983: 132ff) calls Modesty and Approbation Maxims, the speaker will find it necessary to stress the unavoidable nature of his illocutionary act by employing *must,* especially when the hearer is a person of more authoritative status than he. *Must* can be used even with such performative verbs as *admire* which has favorable effect on the hearer as in *I must tell how much I admire your dress.* This is more emphatic than *I admire your dress,* because the former explicitly mentions the inevitability of the illocutionary act of admiring: *Your dress is so good that it is inevitalbe for me to admire it.*

Third, *must* is preferred in the context of offering invitation or proposing some action which is beneficial to the hearer.

(23) You *must* have another sandwich! [Leech]
(24) You *must* go and see that movie! You'll really enjoy
     it. [Frank]

Since *must* is more directive than *have to,* it consequently restricts the opportunity of saying "no" and maximizes the benefit of the hearer (cf. Leech 1983 109ff).

Finally, *must* is generally preferred when an utterance is concerned with what Palmer (1979: 152) calls rational modality or pure logical necessity as in *All men must die* (see section **2.1.**).

(25) The government *must* act. It *must* make up its mind
     about priorities——offices or houses, housing estates or
     luxury buildings. [Palmer]

In the example above, according to Palmer's interpretation, the speaker is not giving the government orders to act, nor is he saying that there are circumstances which force it to act. He is merely stating what he thinks is rational in the extreme. *Must* in this use seems to be a "merger" of the root and epistemic senses and it is sometimes close in meaning to *can't help* as in *All men can't help but die* (Tregidgo: 1982).

2. 7. *must* and *had to* in past-time environments

Must as past predicate is generally rejected in such a past-time context as *She felt ill and must leave early*, where it is implied that the action of her leaving did actually take place. Grammar books and usage dictionaries recommend that in such cases *must* should be *had to*. This does not mean, of course, that *must* is totally ruled out in any past-time environments. *Must* is possible, for instance, in a subordinate clause introduced by a past-tense reporting verb as in *She said that she must leave* as an indirect version of the direct speech *She said, "I must leave."* Besides these two rather straight-forward report structures consisting of a reporting clause as dominant and a reported clause as subordinate, modern writers make use of a few other modes of speech or thought presentation.

Pseudo-indirect speech is the one where the reporting clause occurs in the middle of or at the end of the sentence as in:

(26) He *must* be off, he said (or thought).

(27) He *must*, he knew, control himself. It was necessary, in the remains of one's pride, to display a decent front...
[F. Flora, "Light O' Love" (1969)]

In this case, the effect of "freeness" is more prominent than in the normal indirect speech. Another type of pseudo-presentation is what is generally referred to as "pseudo-reported clause".

(28) The minister said that they would try. There was a

possibility of success. [Young]

The second clause, though syntactically independent, is more likely to be taken as the statement of the minister. Thus it is seman- tically dependent on the preceding reporting verb *said*. In these pseudo-reported clauses *must* can occur even in past-time contexts, especially when the obligation originates from the agentive subject of the reporting clause.

> (29) He took down a detailed description of Harry and then
>   *told* her to stay home. She *must* stay home and wait for a
>   call from her husband. [Ed Lacy, " Amen : " (1968)]

In the so-called free indirect speech, where the reporting clause is omitted but the tense and pronouns are those associated with indirect speech, *must* can also occur.

> (30) He shook the rain out of his eyes. He *must* get out,
>   and get out fast. [J. H. Chase, *The Vulture is a Patient
>   Bird* (1969)]
>
> (31) She gritted her teeth. She *must* not, she could not,
>   panic. [M. V. Derveer, " The Muderess " (1967)]

We should note that in these examples above *must* is associated with non-actuality. In other words, it denotes an obligation not yet fulfilled.

It would be apparent from the discussion above that the dom- inant-bound relationship between reporting and reported clauses becomes less and less distinct, according as speech and thought presentation moves along the scale toward the end of " free ". To put it another way, the clause loses the force of subordination and takes on the nature of independece to the extent that it finally blends into the narrative report.

> (32) To reach the big rabbit field, Ernie and Raymond *had*
>   first *to* walk down a narrow hedgy lane for half a mile.
>   Then they *must* cross the railway line and go round the

big lake.... [R. Dahl, "The Swan" (1977)]

(33) He put a few nubbins in her trough. He *must* bring a
sap bucket of water from the tub of melted snow he kept
in the cabin near the fireplace. When he came back with
the water he saw something furry scurry.... [W. C.
Wright, "Little Foxes Sleep Warm" (1971)]

In both cases, it is to be noted, there is no overt indication of
reporting clauses. And besides that, *must* indicates not the imposed
obligation not yet fulfilled, but the relevant action which did take
place. In (33), for instance, the actualization of the act of his
bringing a sap bucket is implied by *when he came back* in the
third clause. Jacobsson (1979) attests this tendency for *must* to
encroach on *had to* by quotng several examples from recent novels,
one of which will be quoted below.

(34) When they reached the high road there was such a
pressure of happy pilgrims that they could not go against
the stream back into Paniji, but *must* flow towards the
ruined city. [A. Wilson, *As if By Magic*] (Jacobsson)

In any type of speech and thought presentation discussed above, *had
to* can replace *must*. In grammar books, however, too much em-
phasis seems to be put on this replaceability. They sometimes give
the impression that *had to* and *must* are freely interchangeable in
any reported speech introduced by a past-tense reporting verb.
Neuman (1980),[23] for instance, states that in reproted speech *must*
indicating obligation remains *must* or changes to *had to* when the
introductory verb is in the past. As pointed out by Cook *et al.*
(1980),[24] however, *had to* and *must* are not entirely in free variation

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[23] D. M. Neuman (1980): *English Grammar for Proficiency*. Nelson. p.
101.

[24] J. L. Cook, *et al.* (1980) : *A New Way to Proficiency in English*[2]. Black-
well. pp. 104ff.

in the past-tense indirect speech. *Must* tends to be reserved as such
if it is the supposed modal to occur in the corresponding direct
speech in the present tense. Thus those who make a distinction
between *must* and *have to* we discussed above and want to convey
subjective obligation by *must* are most likely to keep *must* unchanged
in converting the direct speech *He said, "I must leave"* into any
indirect speech as in *He said that he must leave* (indirect speech).
He must leave, he said (pseudo-indirect speech) and *He must leave*
(free indirect speech). This is especially the case with the reporting
verb expressing the volition or will on the part of the subject.

(35) Charlie *decided* that he *must* wait until it was darker.
      [J. H. Chase, *A Lotus for Miss Quon* (1969)]
(36) He had *told* her she *must* get back to Saigon as quickly
      as possible. [*Ibid.*]

2. 8. passivization

Root-*must* sentences consist of three arguments, the one who
imposes an obligation, the one who is under the obligation, and the
proposition. As pointed out in section 2.1., the first argument is
usually associated with the speaker who is not explicit in surface
structure, and the second corresponds to the surface-structure subject
of the sentence. In *Harry must kiss Mary*, for instance, the surface
subject *Harry* is the one who is under obligation to do something.
In the passive counterpart, *Marry must be kissed by Harry*, however,
it is no longer *Harry* who is under the obligation. It should be noted
that there are some cases where the third person subject of an
active sentence does not necessarily serve as the second argument.
Consider the following example.

(37) John *must* go to bed at eight.

Suppose *John* is a baby too young to go to bed alone. Then the one
under obligation must be somebody else, say, John's mother. She is

requested to put John in bed. To borrow Hermerén's (1978: 117)
term, she acts as a "mediator" between the one who imposes the
obligation and the one who is affected by it. It should be further
noted that in this case passivization does not cause the change of
semantic roles: namely in the passive *John must be put in bed*, the
semantic roles remain the same as in the active (37).

The semantic equivalence between the active and the passive
will manifest itself more clearly with the cases where the object
NP of an active sentence is inanimate as in:

(38) Sam must shovel the dirt into the hole.

Both in (38) and the passive counterpart (39)

(39) The dirt must be shovelled into the hole (by Sam).

it is *Sam* who is requested to do the job. This semantic equivalence
should be one of the motivations which led some linguists to propose
that *must* should be treated as an intransitive verb taking a subject
complement in deep structure (cf. Newmeyer 1975).

As pointed out by Coates (1983: 36), the use of the passive
weakens the imperative force of *must* since there is no overt agent
whom the speaker is supposed to try to influence. The force will be
further weakened by *have (got) to* because of the non-sepcified
deontic source. The demand becomes more indirect and objective
and it becomes less obvious who is responsible for issuing an order
and performing a relevant action.

(40) "...Even if he escapes here, we still have to keep
hunting him, and someone else is bound to be shot.
You've already agreed that's your reponsibility as much
as mine...."

....

"Yes, I'm going to help. *He does have to be stopped...*"
[D. Morrell, *First Blood* (1972)]

A similar effect can be obtained with an active sentence whose subject is inanimate. In the following example, a tenant complains to the superintendent about the noise of a piano.

>   (41) "With a piano! *That piano has got to stop*!" [G. Baxt, "I Wish He Hadn't Said That" (1982)]

2. 9. *must have*+past participle

As mentioned earlier, it has been a common practice to make a distinction between epistemic and root uses of modal verbs based on a set of semantic and syntactic factors, one of which is concerned with the syntactic restriction on the use of root modals with HAVE+ EN constructions. *You must have done it* is, for instance, regarded as impossible in the root sense, though common in the epistemic sense. (Cf. Hermerén 1978: 93). Hagiwara (1965), however, quotes from *Handbook of Patrol Leader* (1950) the following example where *must* allows the root interpretation though it occurs with a perfect infinitive.

>   (42) There are certain standards you must live up to, certain minimum Scouting experienses you must have before your Scoutmaster will agree to let you take the Patrol out camping on your own.
>   1. You *must have earned* your First Class Badge.
>   2. You *must have had* camping experience on at least two Troop overnight camps, and on one overnight camp of the Leaders' Patrol.
>   3. You *must have led* at least five one-day Patrol hikes to the satisfaction of your Scoutmaster.
>   And futhermore, before setting out on an overnight camp,
>   4. You must have the written consent of the parents of each boy.

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(25) Kyohei Hagiwara (1965). "The meaning of *must have done.*" *The Study of English,* May 1965.

  5. You must be reasonably familiar with the country
      to be covered and the camp site to be used.

He justly points out that in items 1, 2 and 3, in contrast with 4 and
5, reference is undoubtedly made to the requirements that should
have been filled prior to the present time and he further comments
that as far as he is concerned no mention has been made of this
usage in the work of Jespersen, Poutsma, Kruisinga and Saito, in
spite of the fact that an American woman friend unhesitatingly accepts
it as common, About twenty years later, Tregidgo (1982) takes up
this usage in an attempt to provide couter-evidence against the
commonly accepted assumption that root modals can not go with a
perfect form. We will quote one of his examples.

  (43) Candidates for admission in October must have attain-
        ed the age of 16 by April 1st (The regulations demand it,
        i.e. if admission is to be considered).

van EK and Robat (1984 : 286) also refer to this use of *must*+perfect
infinitive which " links the notion of obligation with reference to
an event or state in the past from a point of orientation in the
future ".

  (44) I *must have finished* this assignment by the end of the
        month.

Young (1980 : 198–99) also gives a few examples where *must* which
occurs in the present perfect refers to future time.

  (45) He *must have dug* the garden (by the time we move
        into the new house)=It is compulsory for him to have done
        so before that future time. [Young]

It seems that this construction tends to occur in the context of
descrbing certain necessary qualifications or application requirements.[20]

  We will quote an example where this construction occurs alongside
with an *it-is necessary-for* construction from a pamphlet (issued by the

Department of Social Security of Australia in May 1982) which describes qualifications for "Supporting Parent's Benefit".

> (46) It is not *necessary for* you *to have lived* in Australia for any length of time if you become a supporting parent here. In other cases you *must have been* living here for some length of time. Ask about this at a Social Security office. You *must be living* in Australia when you claim the benefit.

At a press inteview during her visit to Japan, Dinah Shore used this *must*+HAVE EN construction in a way somewhat different from what we have discussed so far.

> (47) interviewer : Did you sing "Blue, Canary" in your performance here?
>
> Shore : Of course I did. But you know "Blue Canary" is only a big hit here, Brazil and Argentina. Only 12 copies were sold in the United States. "Blue, blue blue canary"——that's all I know. I *must have looked* for the text of this song and I found it in coffee beans.

It should be noted that *I must have looked* is paraphrasable as *I had to look* or *it was necessary for me to look* rather than *it is necessary for me to have looked*.

So far we have looked at various uses of *must* in terms of root and epistemic. Although it has not been possible to make very specific claims about these uses, we have shed some light on those aspects of *must* which have failed to receive due attention in

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(26) It is pointed out by Coates (1983 : 62) that *should* can be used in a similar way : By the age of sixteen anybody who is going to be an academic *should have done* their general reading (=It would be advisable for anyone who is going to be an academic to have done their general reading by the age of 16).

the previous studies in English modals.

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