The Diachronic Development of a Modal Verb of Necessity

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1. Introduction

The relation between syntax and morphology has been investigated in a number of works in the linguistic research of recent years. With the analysis that we are presenting here, we would like to suggest that certain aspects of verbal morphology are determined by the semantic content and in particular by the thematic structure of the corresponding lexical entry. This topic, even in the particular and limited perspective we have chosen, has great ramifications. We will limit ourselves to showing that synchronic and diachronic instances of grammaticalization (which we can view as the process that changes a lexical item into a functional element) can be analysed as a consequence of the loss of specific semantic properties of the lexical item undergoing change. Moreover, the morphosyntactic limitations that we will observe for modal auxiliaries can shed some light on the syntactic relations between tense and modality, which have been studied by many authors from a semantic point of view. The correlations we will observe can support a syntactic implementation of the interaction between tense and mood in a very restricted theory such as that

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proposed in Chomsky (1992) (1994), where a functional head can only be marked as strong or weak.

In Benincà and Poletto (1993) we have presented evidence, drawn from some modal verbs of necessity in Italian varieties, suggesting that the loss of forms in a verbal paradigm can be predicted by the loss of certain semantic properties. The idea we have put forth is that verbs' syntax and morphology are determined in some of their aspects by the presence of a thematic grid of the lexical entry. If this thematic grid is not associated with a given item in the lexicon, the item is analysed as a functional element and is inserted in the functional position corresponding to its semantic features. In the present paper we will show that this is true of both synchronic and diachronic instances of grammaticalization.

This paper is organized as follows. In section 2 we will first describe the exact meaning of modern Italian bisogna, which has the poorest thematic grid among Italian verbs of necessity. We will then list its possible and impossible forms and the limitations on its syntactic behaviour. In section 3 we will summarize the discussion of other modal auxiliaries presented in Benincà and Poletto (1993): Venetian toca, 'touch' standard Italian va 'go' and Polesano vuole 'want' all share the observed limitations with bisogna only if a particular reading is selected. These verbs are, on the one hand, normal transitive verbs, but they can also have modal uses with a special meaning indicating a pure state of necessity where no theta-role is assigned (we will define this reading as "deontic reading"); when they assume the precise meaning of "pure necessity" of Italian bisogna, or better, when they lack a theta grid as bisogna does, they also undergo the same impoverishment of their paradigm and inhibition of syntactic capacity. In section 4 we will examine the diachronic development of bisogna, showing how it has developed from a normal transitive verb into a pure modal head. While Old Italian bisogna is still a full verb that projects a VP with its arguments, modern bisogna is a purely functional element that is inserted directly into a modal head Mod\textsuperscript{9} with strong features. Moreover, Old Italian bisogna does not show any of the morphosyntactic restrictions that we observe in modern Italian. The diachronic data strongly support our hypothesis about the change of some modals from lexical verbs to functional categories and reinforce our claim that this goes hand in hand with the loss of the thematic grid. In section 5, we will present a possible analysis of the synchronic and diachronic data and discuss the hypothesis that modal auxiliaries that have no thematic grid are directly inserted under Mod\textsuperscript{9}. 
The behaviour of the Italian verbs of necessity under consideration presents striking similarities with English modal verbs on the one hand, and with the French deontic *falloir* on the other. We will limit ourselves to pointing out the similarities of *bisogna* with corresponding verbs in other languages, as this paper is part of a larger project concerning the diachronic development of modals and auxiliaries in Italian varieties and their present status (cf. Benincà and Poletto (in progress)).

2. Surface properties of 'bisogna'

2.1. 'Bisogna' has a defective paradigm

The verb *bisogna* only means a pure state of necessity, leaving aside any cause of the necessity itself as well as leaving aside that a particular person or object is individually concerned with it. This semantic characteristic will be clear when contrasted with one of the readings of the modal *toca. Bisogna*, as the examples in (1) show, can select either a CP with an subjunctive complement clause, or an infinitive clause: they express 'what is necessary'.

(1)  
   a. Bisogna partire subito
       'It-is-necessary to leave immediately'  
   b. Bisogna che Mario parta subito
       'It-is-necessary that M. leave (subjunctive) immediately'

The first characteristic to be pointed out concerns its morphological paradigm: it is always inflected at the third person singular, and it only occurs in the forms listed below in (2), no matter what type of sentence it selects:

(2)  
   a. Bisogna farlo/che lo faccia
       'It-is-necessary to do it/that he do it'  
   b. Bisognava farlo/che lo facesse
       'It-was-necessary (imperfect)...'  
   c. Bisognerà farlo/che lo faccia
       'It-will-be-necessary...'
The possible forms of *bisogna* are then the present, imperfect and future indicative, the present and imperfect subjunctive and the present conditional. All other forms are impossible, as the following list illustrates:

\[
\begin{align*}
(3) &\quad a. \quad *Potrebbe\ bisognare\ farlo\ /che\ lo\ faccia \\
&\quad 'It\ could\ be-necessary\ (infinitive)...' \\
&\quad b. \quad *Bisognando\ farlo,\ lo\ fece \\
&\quad 'Being-it-necessary\ (gerund)....' \\
&\quad c. \quad *E'\ (era,\ etc.)/\ ha...bisognato\ farlo \\
&\quad 'It\ is\ (was,\ etc.)/has\ been-necessary\ (past\ participle\ and\ compound\ tenses)' \\
&\quad d. \quad *Bisognò\ farlo 4 \\
&\quad 'It\ was\ necessary\ to\ do\ it'
\end{align*}
\]

The sets of possible and impossible forms are less mysterious if we recall well-known observations regarding the possible forms, which are often referred to as forms having 'modal quality'. More formally, we hypothesise that:

a) they are not marked for a specific aspectual feature and are compatible with an unspecified time localisation. The Italian present indicative is also an 'atemporal' or

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3. For reasons that are not clear, the present subjunctive (ex. (2e)) is not as natural, for many speakers, as the imperfect subjunctive is, though it is not impossible as the infinitive, gerund and past participle are. We will idealise the data and treat the present subjunctive as a possible tense of *bisogna*.

4. In Northern Italian the simple past tense is not used, but speakers of most of those Central and Southern varieties that admit it do not find (3d) grammatical.
'generic' tense, (cf. Giorgi and Pianesi (1991) for a syntactic characterisation of this observation).

b) On the contrary they have a modal specification. The imperfect, future and conditional have epistemic [+irrealis] possible interpretations; both subjunctives can be [+irrealis] forms. These properties can be thought of as sharing a precise structural correlate, namely the presence of a Modal phrase which is marked with a strong feature, an hypothesis that we will discuss in section 5.

We will propose that all other forms are excluded as they do not have this modal meaning and consequently do not have a ModP marked as [+strong].

Note that the lack of non finite forms strongly recalls the development of English modals (cf. Lightfoot (1979) and Roberts (1985)). The crucial difference here is that the simple past is also excluded for Italian modals, but it is not in English, at least for can. 5

2.2. 'Bisogna' lacks a subject

The morphological lacunae are accompanied by severe syntactic limitations: bisogna has apparently no subject, as the following test - set out to discover non-argumental subjects - clearly shows. There is a clear difference in grammaticality between the sentences in (4), in which the PRO subject of the infinitive takes a controller in the subject position of the governing sentence. A quasi-argumental subject in the governing sentence is able to govern the PRO subject of the untensed clause in (4a), the expletive subject of the impersonal verb in (4b) is able to do so with some difficulty. On the contrary, the subject of bisogna in (4c) is completely unable to give PRO any content; (4d) illustrates the fact that with a different locution of necessity, formed with the verb essere "be", the structure becomes (marginally) possible:

\[(4) \quad a. \quad \text{Nevica senza necessariamente fare molto freddo.} \quad 'It snows without necessarily being very cold'\]

5. This difference could be reduced to differences between the the aspeccual systems of the two languages.
b. "Sembra che si tratti di un delitto senza esser chiaro chi sia il colpevole.  
'It seems that it is a murder without being clear who the culprit is'

c. *Bisogna che lo leggiamo senza esser necessario che lo facciamo subito.  
'It is necessary that we read it without it being necessary to do so immediately'

d. ?C'è bisogno che lo leggiamo senza esser necessario che lo facciamo subito.

The contrast between (4b) and (4c) shows that there is a difference between the expletive subject of a verb like *seem* and *bisogna*, as the subject of *seem* can marginally control a PRO while the subject of *bisogna* cannot.

Moreover, there is some evidence coming from Sardinian and Northern Italian dialects that indicates that *bisogna* has no subject at all. In some Sardinian varieties the verbal form for *bisogna* lacks the third person ending. No other verb, including impersonals and meteorological, lacks the third person agreement morpheme:

(5) a. bisongath-
    'it is necessary'

   b. proethe
    'it rains'

Sardinian shows that *bisogna* is different from other impersonal verbs, as it does not carry any subject feature at all.

The difference between Sardinian and Italian could be derived from a very general property that only Italian displays, namely the necessity of an agreement marker "closing" every word (cf. Li (1990), Giorgi and Pianesi (1991) and Poletto (1991) for a detailed discussion on the role of Agreement as defining the word boundary).

Hence the fact that standard Italian *bisogna* has a third person agreement marker could be required by an independent constraint that imposes the presence of a default agreement for all words and is irrelevant as a test to determine the syntactic presence of a subject.

Further evidence of the absence of a subject with *bisogna* comes from the behaviour of northern Italian dialects: even in those varieties that show an obligatory
subject clitic with impersonal verbs as the verb corresponding form to seem, if there is a verb with the deontic reading of bisogna, it does not tolerate a subject clitic (see Benincà and Poletto (1993):(5)).

Again we see a difference between bisogna and other impersonals.

A second interesting fact about the subject is that, in Italian as in the dialects, bisogna cannot host a raised subject coming from the selected clause. The sentences in (6) are to compare with the behaviour of the impersonal sembra "it seems" given in (7):

(6) a. *Mario bisogna leggere
   'M. is-necessary to read'
   b. *Bisogna partire Mario
   'M. is-necessary to leave'

(7) a. Mario sembra leggere
   'M. seems to read'
   b. Sembra conoscerlo Mario
   'It-seems to know him M.'

The contrast between (6) and (7) shows that bisogna is not a raising verb. We will come back to this in section 5.

2.3. 'Bisogna' cannot host clitics

The third property to be outlined is the impossibility for bisogna to have clitics attached to it, whether thematically related to it (see (8a)) or to the embedded predicate via restructuring (8b). Even benefactive clitics that in Italian are possible with any verb. This behaviour is again to be compared with that of sembra on the one hand and that of other modal locutions on the other, given in (9):

(8) a. *Gli bisogna mangiare
   'Him is-necessary to eat'
   'He needs to eat'
   b. *Lo bisogna incontrare
   'Him is-necessary to meet'
(9) a. Lo sembra fare volentieri
   'It he-seems do willingly'
b. Ci sembrano andare
   'There they-seem to go'c. Gli sembravate parlare amichevolmente
   'To-him you-seemed to speak friendly'
d. Gli è necessario partire
   'To-him is necessary to leave'

Any type of object clitic cannot appear on the head of bisogna.
Let us thus summarize the special properties that we have observed for bisogna:

(10) a. Only verbal forms that can be marked as [+ irrealis] can be realized
b. Neither an overt nor a null subject is available as bisogna has no
e external argument and it is not a raising verb (some dialects show no
or very poor subject agreement)
c. No clitics as bisogna has no argument (apart for the embedded clause)
   and raising is not possible

In the following section we will present arguments that are dealt with in more

3. Other deontic modals

3.1. Venetan 'toca'

The idea that the morphological and syntactic restrictions of bisogna are related to
its defective thematic structure is supported by the comparison with a verb that
acquires the same meaning of bisogna in the Venetan dialects of Padua and Venice.
This verb is tocar(e), a transitive main verb which can be also used as a deontic.
When it is used as a main verb, tocar(e) is a regular verb meaning "to touch", as the
corresponding Italian toccare: it has all tenses and normally hosts a subject DP,
corresponding to a thematic agent, in the SpecAgrS position.
*Tocar(e)* can also have an impersonal use with a number of modal readings, one of which is very similar to *bisogna*. The others all involve, with varying characterisations, a dative experiencer to which the necessity is addressed. Let us call *tocal* the various uses, and *toca* the reading that corresponds to *bisogna*. The argument of *tocal* is expressed by a dative clitic, possibly doubling a bare DP, and, with this reading, *toca* only selects an infinitive clause:

(11) Me toca partire
    'I have to leave'

The meaning of *tocal* goes from "Someone decided that it is someone else's duty to do something", to "Someone is obliged to do something that he would have preferred not to do", or "Someone is concerned with doing something", or else "it is someone's turn to do something", etc. When the complement is an infinitive, the subject of the selected clause is always the person affected by the necessity expressed by the governing verb *toca*, and it surfaces as a clitic attached to *toca*. With these readings, *toca* has all tenses.

The purely deontic reading, very similar to Italian *bisogna*, is expressed by *toca* when it governs an inflected complement clause. In (12) *toca* has only the purely deontic reading:

(12) Toca che lo fasa mi
    "I have to do it"
    "*It's up to me/it is my turn to do it"

We will use this distinctive feature to isolate the syntactic and morphological properties of this variant. The purely deontic reading of *toca2* shows the same morphological restrictions that we have examined in section 2. for the verb *bisogna*: it cannot be inflected in the infinitive, participial and gerund forms. We cannot test if the simple past is possible as in this dialect the simple past does not exist for any verb.

(13) a. *Ga tocà che lo fazese mi*
    'Has touched that it did I'
    'I have had to do it'
b. *Podaria tocare che lo fazese mi  
   'I might have to do it'  

c. *Tocando che lo fas mi,...  
   'Having to do it myself,...'

Moreover, the tenses that are admitted with bisogna are grammatical also with the purely deontic reading of toca2:

(14) a. Tocava che 'ndase mi  
   'I had to go'  

b. Tocarà che vaga mi  
   'I will have to go'  

c. Tocaria che 'ndase mi  
   'It would be necessary for me to go'  

d. Credevo che tocase che te 'ndasi ti  
   'I thought that you had to go'  

As (14) shows, it is possible to use the imperfect, future, conditional and subjunctive forms.

If the hypothesis presented in section 2. is correct, we should expect that toca2 also presents the syntactic properties already discussed for bisogna, namely the impossibility of having a subject DP and the impossibility of realising a clitic on the modal verb. This is indeed the case:

(15) a. *Nisuni toca che vaga  
   'Nobody has to go'  

b. *Me toca che parla doman  
   'I have to speak tomorrow'  

Example (15a) shows that toca cannot have a subject DP. (15b) illustrates that no clitic can be hosted by it.

It is important to point out that the cluster of properties shown by bisogna is not an idiosyncratic fact connected to this verb, but is strictly related to the purely deontic meaning, which we will analyse in section 5. as an effect of the impoverished thematic structure. When toca/tocare, which is a regular transitive verb, assumes the meaning of bisogna thus disactivating its VP as a site of thematic
role assignment, there are effects both in syntax and morphology, and they are exactly the same ones that characterise bisogna. In this perspective, the difference with an impersonal verb such as sembrare "seem" is basically the fact that this verb always has an intended argument, i.e. the experiencer, no matter whether it is lexically filled or left unexpressed.

3.2. Two more deontic modals

In this section we will examine two more cases of deontic modals which are partially similar to bisogna and toca.

The first verb is standard Italian andare "to go", which is a regular main verb of the unaccusative class and as such can be used in all inflected forms.

As an auxiliary it has two distinct readings: one is purely passive, the other is passive plus deontic. The purely passive reading is only possible with a subclass of verbs which entails the "loss" of the object (it includes verbs such as perdere "lose", bruciare "burn", distruggere, "destroy" etc.). A sentence like the following is ambiguous, admitting both readings of the auxiliary andare

(16) La sterpaglia andava bruciata
'The brushwood went (imperfect) burnt'
"The brushwood had to be burnt"
"The brushwood was burnt"

The passive-deontic reading shows some morphological restrictions which parallel those found with bisogna and toca: 6 The simple past, participial, infinitive and gerund forms cannot be used with the passive-deontic reading: they are possible only with the pure passive one. Moreover, as for bisogna and toca2, the passive plus deontic reading is possible with the future, conditional, and subjunctive forms.

As the morphological restrictions parallel those found with bisogna and toca2, we should also expect that the same syntactic restrictions be present: the modal andare, like bisogna, should not tolerate a subject DP in its SpecAgrS position. However,

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6. Also the pure passive reading shows some restrictions: for instance, no agent can be realised in these structures (see Salvi 1988 for evidence in this sense).
(16) can have the deontic reading and the subject position is occupied by the DP la sterpaglia.

The syntactic restriction regarding the subject is also present with andare, but it is limited to first and second persons: only the third person singular and plural can be realised in the subject position of the deontic andare: 7 This seems to be the effect of restrictions that require a very detailed analysis of the AgrS projection and of its sub-components.

(17) a. ??Io vado bocciato
       'I go failed'
       "I have to be failed"

b. ??Tu vai bocciato
   'You have to be failed'

c. Questo studente va bocciato
   'This student has to be failed'

d. ??Noi andiamo bocciati
   'We have to be failed'

e. ??Voi andate bocciati
   'You have to be failed'

f. Questi studenti vanno bocciati
   'These students have to be failed'

The fact that the restriction on the subject is more limited with andare than with bisogna and toca2 is parallel to another difference between these verbs: bisogna and toca select a complete CP as their complement, while andare selects a passive past participle:

(18) a. Bisogna [che vada io]
        'It-is-necessary that go I'
        "I have to go"

7. If the modal is inflected in the conditional form, these sentences are only marginal:

(i)   ??Tu andresti bocciato
       'You should-go (conditional) failed'
b. Toca [che vaga mi]  
'It-touches that go I'  
"I have to go"

c. La sterpaglia va [bruciata]  
'The brushwood goes burnt'  
"The brushwood is / has to be burnt"

It may be hypothesized that these two facts are connected, and that the possibility of realizing a third person subject is related to the presence of the selected passive past participle. We will discuss a possible account for this relation in section 5.

Note also that a verb like andare is different from English modals: it can host a subject but only a third person one. Moreover, it selects a past participle and not a complete CP, and in some sense it is more similar to the English modals that select a bare infinitive, but the meaning that we obtain can only be a passive one.

This hypothesis is confirmed by data coming from other Italian varieties, where the verb volere "want" is used in a deontic sense and selects again a past participle. The surface subject is the object of the past participle, which becomes the subject of the passive: 8

(19) El vole magnà  
'It wants eaten'  
"It wants eating, it is necessary to eat it"

The deontic reading of volere cannot be obtained when the verbal form is the infinitive, gerund or past participle (the simple past is not possible in this variety). 9

The possible forms are the present, the imperfect, and the future indicative, the present conditional and the simple subjunctive. The parallel regarding the morphological restrictions (cf. Benincà and Poletto (1993) (32)) with the other deontic modals is striking.

8. The variety used for the examples is Basso Polesano, a Southern Venetan dialect.

9. A southern variety spoken in Puglia presents the same phenomenon and has the simple past which is excluded in this construction.
With respect to the syntactic restrictions regarding the subject, *vuole* behaves as *andare*: the deontic reading of *vuole* can only be used with a third person subject:

(20) a. *Mi voio petenà
   'I want combed'
   "I need to be combed"

b. *Ti te voi petenà
   'You want combed'

c. El vole petenà
   'He wants combed'

d. *A volemo petenà
   'We want combed'

e. *A vulì petenà
   'You want combed'

f. I vole petenà
   'They want combed'

At this point we have two types of deontic modals: *bisogna* and *toca2*, which do not admit any subject, and *andare* and *vuole*, which only admit third person subjects. *Bisogna* 'it is necessary' and *toca2* 'touch' select a full CP while *andare* 'go' and *vuole* 'want' select a passive past participle. Moreover, all deontic modals examined so far show the same morphological gaps in the verbal paradigm.

Thus, the evidence presented above leads us to conclude that:

- some morphological and syntactic restrictions are connected with the deontic reading of a modal verb

- the syntactic restriction on the subject depends on the type of selected structure: if a complete CP is selected no subject is permitted, if a past participle is selected only third person subjects are possible.

4. The diachronic perspective

4.1. Introduction

An argument in favour of the idea that the morphological and semantic properties are tied together comes from the history of Italian. In fourteenth century
Italian and, in the literary style, up until nineteenth century, bisogna has a different grammar form the modern Italian bisogna. It appears that many of the restrictions indicated for modern Italian are absent.

4.2. 'Bisogna' through the History of Italian: the Data

4.2.1. Boccaccio's 'Decameron'

In Boccaccio's Decameron (second half of the XIV century) the thematic structure of bisogna is the following: an experiencer theta role is realized with a dative and a theme takes a nominative. The verb agrees with the theme-subject (recall that this is never the case in modern Italian).

(21) a. E qui vi da una vecchia procacciato quello che le bisognava,...(II, 9, 42)
   'And here from an old woman taken what that to-her was-necessary...'
  b. Saper far ciò che a ciò bisognava, ... (II, 10, 17)
   'Can (Inf.) do (Inf.) what that to this was-necessary'
  c. Oltre a questo non vi bisognerebbe d'aver pensiero... (III, 1, 16)
   'Above this not to-you would-be-necessary to worry... '
  d. Per ciò che egli ci bisogna... (III, 1, 16)
   'For what that he (Nominative) to-us is-necessary'
  e. e quando la gelosia gli bisognava del tutto...
   'and when the jealousy to-him was really necessary... '
  f. mi bisognano fiorini dugento d'oro
   'to-me are-necessary florins two hundred of gold'
  g. e per ciò che tu ci bisognavi per dir certe orazioni (VII, 3, 31)
   'and for what that you to-us were-necessary to say some prayers'

As predicted by our hypothesis, non finite forms are possible (we could not find an infinitive form, but the occurrences of bisogna are very limited in this text):

(22) a. ...in più lunghi digiuni che loro non sarien bisognati
   (past participle) (II, 6, 41)
   'in longer fasten than to-them had not been-necessary'
b. ...bisognandogli una grande quantità di denari... (gerund) (I, 3, 6)
   '...being-necessary to-him a large amount of money'

(21) and (22) are consistent with the modern bisogna examined in section 2. and show that the connection between the forms and the thematic structure postulated in section 2. is correct: Old Italian bisogna has two arguments in its theta grid and therefore it can be inflected for all tenses.

Also present in the corpus are some examples of impersonal bisogna (parallel to the modern usage) which does not show any overt argument:

(23) a. e perciò non bisogna che io vi dimostri,...(III, 5, 11)
   'and therefore is not necessary that I to-you show...'
   b. che egli, se bisognasse, gli spezzerebbe delle legne (III, 1, 13)
   'that he, if were-necessary, to-him would break some wood'

In the Decameron there are very few examples of this type. All of them are coherent with the modern bisogna. The most frequent verb of necessity is dovere. Also tocca (cf. section 3) is not much used and it only has the construction tocca+NP or tocca+di infinitive meaning "it is someone's turn to".

No case of tocca+bare infinitive has been found. This means that also the verb tocca was different both from the modern Italian and from the Venetan counterparts.

4.2.2. Machiavelli

Il Principe by Machiavelli (1513) shows the same type of bisogna found in the Decameron, as it has two theta roles, an experiencer and a theme.

(24) a. e quando pure li bisognassi procedere contro al sangue di alcuno
   (p.82)
   'and when to-him were-necessary to go against the blood of anyone'
   b. et a tenere indietro li Veneziani, bisognava la unione di tutti gli altri
   (p. 55)
   'and in order to keep back the Venetians, was-necessary the union of all the others'
There are also some examples of impersonal *bisogna* with no overt arguments. However, the impersonal has all the forms that are not possible in modern Italian:

(25) a. se fussino venuti tempi che fusi bisognato procedere con respetti...
      (p. 124)

     'if were come the time that had been-necessary to go on with respect...'

b. cioè se uno principe ha tanto stato che possa, bisognando, per sè uno
    destino reggersi,...
    (p. 51)

     'that is, if a prince has so much state that he can, being-necessary, for
     himself a destiny rule...'

The examples in (25) seem to contradict our hypothesis that whenever *bisogna*
lacks a theta grid it looses non-finite inflection.

However, these cases can be interpreted as having an implicit experiencer
argument, as the following examples suggest:

(26) a. Chi vuole operar bene, bisogna allontanarsi da tutte le cure
      (Vasari, III, 507)

     'Who wants to act good, is-necessary to go away from all the cures...'

b. Chi voleva entrare in essa, bisognava per forza inchinarsi con il capo
    (Giulio Cesare Croce, 95)

     'Who wanted to get in it, was-necessary to bend his head'

Here there must be a PRO which binds the reference of the anaphoric pronoun *si*
attached to the infinitival verb. This PRO, which is coreferent with the wh-pronoun
*chi* is controlled by the experiencer of *bisogna*. Therefore this experiencer must be
present in the Syntax.

The modern counterpart of this example is the following, where an inflected
sentence is obligatory:

(27) Chi voleva entrare in essa, bisognava che si inchinasse con il capo

     'Who wanted to get in it, was-necessary that he bend his head'

*Chi voleva entrare in essa bisognava inchinarsi con il capo

    (modern Italian)
Hence, even the impersonal forms can be considered as different from the modern version of *bisogna*, as in Old Italian there is always at least one argument which may or may not be overtly realized.

Hence these cases do not constitute a counterexample to our hypothesis. On the contrary, they confirm our idea that thematic roles and functional projections are tightly linked.

### 4.2.3. Case Alternations

Another possible structure which is realized in Old Italian but has disappeared in modern Italian is the following, where the experiencer is not realized with a dative but with a nominative and the theme is in the genitive case:

(28) \[\ldots\text{coloro che ne bisognano}\]  
\[\text{((Fra' Bartolomeo Amm.) ant. volg. 207)}\]  
'...those that (wh- subject) need of-it'

This possibility is present, though less frequent, throughout the history of Italian up to the XIX century:

(29) \[\text{Quasi tutte le giovani si fanno pi\'e belle in viso e non bisognano d\'altri ornamenti}\]  
\[\text{(Foscolo, IV 342)}\]  
'Almost all young(fem) themselves make more beautiful in the face and not need of other ornaments'

We thus have two possible case realizations of the two arguments of *bisogna*:

(30) a. experiencer --> dative  
theme --> nominative  
b. experiencer --> nominative  
theme --> genitive
The existence of two possible case realizations gives us a hint about the functional and argumental structure of *bisogna* in Old Italian, as we will see in section 4.3

### 4.2.4. Galileo Galilei

We have examined the *Dialogo sui massimi sistemi* (1632) by Galilei, whose language seems to be less artificial that those of literary works.

Most examples of *bisogna* show the same pattern that we find in the modern language: the verb has no subject or object DP, it can take an inflected or infinitive sentence, and it is not inflected for participle, gerund and infinitive:

(31) a. bisogna dunque che voi dicate che... (p. 114)
   'is-necessary that you say that...'
   b. bisognerebbe detrarne quello che avesse fatto l'artiglieria (p. 140)
   'Would-be-necessary to deduce what that the artillery had done'

Only 8 examples out of 250 show the older structure with two arguments, an experiencer and a dative, which is common in the *Decameron*:

(32) a. che non vi bisogna chiamar principio interno ne' esterno per... (p. 317)
   'that not to-you is-necessary to invoke neither an internal nor external principle to...'
   b. vi bisogneranno l'emendazioni di minuti... (p. 370)
   'to-you will-be-necessary the correction of minutes...'

In each case the dative experiencer is realized as a clitic pronoun.\(^\text{10}\) Note that this version of *bisogna* shows up in a present perfect, which does not occur when it is used without arguments:

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\(^{10}\) The fact that the experiencer is always realized as a clitic pronoun strongly recalls some facts regarding *tocca*. If the experiencer is realized as a tonic pronoun, it can only mean "it is someone's turn" and the infinitive sentence seems to be dislocated (as the intonational contour indicates). On the contrary, when the experiencer is realized as a clitic, the following infinitive sentence does not have any special intonation and the meaning is "someone has to do something which he does not like":

(33) Mi è bisogno tardo la
'To-me has been-necessary to linger there'

No gerund has been found. There are two examples with an infinitive, both of them embedded under the verb *concludere*:

(34) a. vengono calcolando ... e concludendo bisognare in dottrina del Copernico ammettere che...
'They are calculating and concluding be-necessary in the doctrine of Copernico to admit that...'

b. vo meco medesimo concludendo bisognare che quelli che restano ....
'I am myself concluding be-necessary that those that stay...'

The verb *concludere* takes an inflected clause as its complement in modern Italian.\(^{11}\) It is interesting to observe that when *bisogna* is used without arguments

(i) Tocca a me, farlo
'Touches to me, to do it'
'It's my turn to do it'

(ii) Mi tocca farlo
'To-me touches to do it'
'I have to do it (but I do not want to)'

This suggests that there are two different structures involved in the realization of the experiencer theta role. As the reading in (ii) is available only with a clitic, it could be hypothesized that the experiencer is realized as a sort of benefactive only when *toca* is a deontic auxiliary, but not when it has the reading in (i). If this is true, we could think that also the eight examples found in Galilei's work do not have the same structure than those found in Boccaccio's *Decameron*.

\(^{11}\) It seems plausible to think that in Old Italian the infinitive could show some of the properties connected with finite forms in modern Italian, especially because it could license an overt subject (cf. the Aux to C construction, which is still possible at a high stylistic level).
it never shows these forms in a sample of 242 sentences. It thus seems that the correlation between the presence of arguments and the activation of some functional projections that we have hypothesized for modern Italian holds in this case too.

A brief remark on tocca: in this stage it maintains the meaning "it is someone's turn" but it can also mean "it falls to/on someone, to happen to someone":

(35) a. secondo il numero che gli è toccato  
'according to the number that fell to him'

b. adunque non vi è toccato mai a veder la Terra  
'then not to-you has ever happened to see the earth'

It is construed with a DP or with an infinitive preceded by a. No bare infinitive has been found.

4.2.5. Collodi

As a third stage we have examined Collodi's *Pinocchio* (1883), a tale written for children using the everyday language; the author intended to use a standard colloquial language based on spoken Florentine. This work presents the same distribution that we find in contemporary Italian, as bisogna is only used without arguments and only in the forms possible in modern Italian:

(36) a. Bisogna sapere che...
'Is-necessary to know that...'

b. Bisognava pensarcì prima
'Was-necessary to think about it before'

This shows that in the second half of the XIX century bisogna has already developed into its modern form. On the other hand, the use of the verb tocca is similar to that present in Galileo's language:

(37) Non sai la fortuna che mi è toccata?  
'Not (you) know the luck that fell to me'
However, *tocca* has already acquired the modern deontic reading, even though it is construed with a prepositional infinitive:

\[(38) \quad \ldots \text{per forza mi toccherà a studiare} \quad (p.220)\]

'or necessarily to-me will touch (prep.) study (inf.) v
'or I will necessarily have to study'

No bare infinitive has been found.

4.3. Diachrony and Synchrony come together

The three stages that we have exemplified show that *bisogna* has changed over the course of time. In Old Italian *bisogna* is a verb with two arguments: an experiencer and a theme. These two arguments can be realized with two possible case configurations:

a) the experiencer is realized with a dative and the theme with a nominative; or alternatively,

b) the experiencer takes the nominative and the theme the genitive. 12

In the first stage the impersonal *bisogna* is also present, even though in a limited number of occurrences. In Boccaccio’s *Decameron* the impersonal *bisogna* only takes the modern forms, while in Macchiavelli it also occurs in the forms that contemporary Italian does not allow (past participle, infinitive and gerund). However, there are reasons to believe that also in these cases *bisogna* is not a real impersonal, having a phonetically empty experiencer which can control a PRO in the embedded infinitive (as we have hypothesized above commenting cases as (26)).

The second stage, represented by Galileo Galilei’s work, shows a majority of examples of the impersonal *bisogna*, which behaves as in the modern language. A small group of examples has a behaviour which partly overlaps with the older usage.

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12. Recall that a similar pattern has been found in the case of auxiliary alternation between *BE* and *HAVE* (cf. the recent paper by Kayne (1993)). If the explanation adopted by Kayne for auxiliaries can be exploited in order to account for the development of *bisogna*, then the pattern FP [DP] is not to be confined to aspectual auxiliaries.
It takes a dative experiencer (always realized as a clitic) and a nominative theme: past participles are found with this structure.

The third stage, (Collodi's *Pinocchio*) shows no trace of the older construction with two arguments and behaves as the modern *bisogna* with respect to the forms possible.

Thus, the development of *bisogna* constitutes an argument in favour of our hypothesis that functional and argumental structure go together: when there are arguments, all forms are possible, when no argument appears to be selected by *bisogna*, only modal forms are found.

5. *Deontic modals as functional heads*

5.1. *The problem*

Let us sum up what we have seen so far: some modal auxiliaries have a particular reading that we have defined as "deontic reading" of pure necessity, where no thematic role is assigned. They show some particular morphosyntactic properties: some verbal forms are impossible (simple past, infinitive, gerund and past participle) and there are also restrictions on the occurrence of a subject; furthermore, deontic modal auxiliaries cannot host object clitics. We have formulated the hypothesis that there exists a relation between the deontic reading and the morphosyntactic properties observed. Both synchronic and diachronic observations confirm our hypothesis: some verbs in modern Italian varieties only show the morphosyntactic restrictions when they have the deontic reading. Moreover, the diachronic development of one of these verbs (*bisogna*) shows that the morphosyntactic restrictions appear only when the deontic reading is present.

We will now discuss a possible analysis of the relation we have hypothesized.

We have four different properties to explain:

a) the connection between the thematic grid and the morphological gaps in the verbal paradigm. This property is shared by all modal verbs that can select the particular deontic reading of pure necessity.
b) the reason why the morphological gaps in the paradigm exclude some verbal forms and admit others. In particular we would like to find out what the possible or impossible forms have in common that renders them respectively grammatical and ungrammatical.

c) the relation between the possibility of having a subject and the structure selected by the modal auxiliary. If the modal auxiliary selects a CP, no subject is possible (cf. bisogna and toca2); if it selects a passive past participle, only a third person subject is possible (cf. andare and vuole).

Both cases differ from English modals that have no restriction on the subject.\textsuperscript{13}

d) the difference between verbs like bisognaltoca2 and sembra “seem” with respect to subject raising. Both verbs take a + or - finite CP as their complement. Why is it the case that with bisogna/toca2 the subject of the embedded verb cannot raise while this is permitted with sembra?

To account for these properties, we will assume an articulated functional structure of the sentence such as has been proposed in Cinque (1993) on the basis of surface relative order of adverbs. Cinque’s work shows that there exist restrictions on the sequence of sentence adverbs, so that some kinds of adverbs must always precede others. Moreover, the sequence appears to be the same in many languages. Cinque’s observations cannot be explained by the structure of the sentence that includes only AgrS, TP, AgrO and that treats adverbs as adjoined to VP. As the sequence of adverbial types is ordered and seems to be universal, he proposes that adverbs are located in specifier positions of semantically related FPs.

He also shows that we need the head positions of these FPs, as the inflected verb can be found in different varieties to the left of different types of adverbs, even though the relative order of adverbial classes never changes. The ordered series of adverbs that he observed is the following (using Italian items):

\textsuperscript{13} However English has very poor person morphology and the difference noted here could be obscured by the fact that first and second person do not agree with the verb.
francamente (frankly) > fortunatamente (luckily) > sicuramente (surely) > adesso (now) > necessariamente (necessarily) > meramente (purely)

The structure of the sentence assumed by Cinque (1993) is very complex, and we will give here only the portion that is necessary to our purpose: 14

(40) \[\text{Epist.ModP} \]
    \[\text{Spec} \quad \text{Mod'} \]
    \[\text{fortunatamente} \]
    \[\text{Mod}^0 \quad \text{MoodP} \]
    \[\text{Spec} \quad \text{Mood'} \]
    \[\text{sicuramente} \]
    \[\text{Mood} \quad \text{TP} \]
    \[\text{Spec} \quad \text{T'} \]
    \[\text{adesso} \]
    \[\text{T}^0 \quad \text{RootModP} \]
    \[\text{Spec} \quad \text{Mod'} \]
    \[\text{necessariamente} \]
    \[\text{Mod}^0 \]

Cinque (1993) presents evidence that there are three distinct modal phrases in the structure of the sentence. Two of them are located above TP and one is located lower than TP. The highest one hosts epistemic modality and its specifier position hosts adverbial elements like fortunatamente (luckily); this phrase does not concern us here directly. The second one is a MoodP that hosts a [+/--irrealis] feature

14. Cinque does not discuss AgrPs in his analysis, as they have different properties.
(connected in Romance to grammatical mood as subjunctive and conditional). Its specifier hosts adverbs like sicuramente. 15

The third modal phrase is a "root modality" projection, whose specifier hosts adverbs like necessariamente. 16 Following Cinque's proposal, we will assume that a F° head can be marked as + or - strong in a given language, depending on the meaning of the sentence: for instance an aspectual head that defines the +/-perfective distinction will be marked as [+strong] if the tense of the sentence is a perfective one and as [-strong] if it is not perfective.

A verbal form that is marked as [+strong] for a certain feature in the lexicon must raise to check its feature on the corresponding functional head. Hence, a given verbal form that has strong features can only be selected in the lexicon if the corresponding functional head is also strong. This relation between +and - strong features of functional heads, verbal forms and meaning is crucial for our analysis of deontic modals.

5.2. The analysis

The central idea we want to exploit is that the deontic interpretation corresponds to the absence of a theta-grid. All modal auxiliaries that can have the deontic reading of "pure necessity" must lack a theta-grid.

Consequently, to this, modal auxiliaries are functional elements directly inserted into the head of a functional projection corresponding to their semantics. In other words, we propose that the deontic reading is provided by a purely functional element, such as modal morphemes. 17

15. Cinque notes that the order fortunatamente sicuramente is possible while sicuramente fortunatamente is not.

16. Note again that this type of adverb must necessarily follow the others seen above so that we get fortunatamente sicuramente necessariamente but not necessariamente sicuramente or necessariamente fortunatamente.

17. One could object that bisogna is an independent word, which does not need any morphological support: we are now familiar with functional elements that are independent words in one language while they are morphological elements in others. In this regard, we can recall that in a language such
Cinque’s proposal gives us the more articulated structure that we need in order to derive the morphosyntactic properties of deontic auxiliaries from their semantics: modal auxiliaries are directly inserted into the Head of RootModP (cf.40).

If deontic modals are inserted under Rootmod°, what is the status of functional projections that occur lower than it in the structure of the sentence?

We can envisage two possibilities:

a) the lower FPs could be present but all marked as [-strong];
b) or they could be totally absent.

There is some evidence for the presence of a functional structure (but not the VP) lower than the root modality projection but higher than the embedded CP. It is provided by the fact that it is possible, also with bisogna and toca2, to have adverbs such as mica, più, già that are hosted, following Cinque 1993, in the specifier positions of functional projections lower than the root modality projection but clearly higher than VP:

(41) a. Bisogna già accendere il termosifone
    'It is already necessary to turn on the heater'
b. Non bisogna più parlarne
    'It is not necessary anymore to speak of it'

as Classical Latin there is a morphological suffix -ndum which, added to the verb root, gives it deontic meaning:

(i) a. lege-re
    'read (infinitive)'
b. lege-ndum
    'to be read'
c. legendum est
    'it is necessary to read'

For reasons of this kind, we chose to treat these verbs as pure functional elements. A possible alternative which deserves to be more extensively analysed and is for the momento equivalent to consider bisogna as generated under V° but only capable of moving directly to RootMod°, bypassing the intermediate head positions or, more precisely, passing through them vacuously.
c. Toca zà impissare el termo
   'It is already necessary to turn on the heater'

This could mean that the structure is present, but the head positions are unavailable to a functional element such as a deontic modal auxiliary.

Whether the FPs lower than the root modality head are only inactive or not present at all is irrelevant for our theory as in both cases they cannot be marked with [+strong] features.

On the contrary we must assume that the VP of the modal auxiliary is not projected, as a consequence of the fact that deontic modal auxiliaries do not have a theta-grid.

Independent support for this assumption comes from the status of the CP embedded under modal auxiliaries such as bisogna or toca2. The embedded CP does not behave as a true thematic argument of the modal auxiliary. Some cases that can be revealing for our topic are analysed in this sense by Stowell (1981). He concludes that the different syntactic properties of the sentential complements of verbs such as murmur or shout, and near-synonyms such as claim, come from the fact that the latter but not the former thematically mark their sentential complement. It is possible to perform a simple test based on the observation that a noun morphologically related to the verb can have the same clause as its complement only if the clause is a thematic complement of the verb (see Stowell, 1981, 6.3). We can apply this test to our verb bisogna and see that the related noun bisogno - like the nouns shout or murmur in English - cannot have a sentential complement: 18

(42) a. *[Bill's shout that I should get out of the way] surprised me
   (Stowell (1981):(51))
   b. 'Bill's claim that I should get out of the way surprised me'
   c. *Il bisogno che tu parta è grande
   'The need that you leave is strong'
   d. La necessità che tu parta è grande

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18. The test is not applicable to toca1, 2, for which there is not in the language a related noun which have the deontic meaning (but only the transitive meaning).
The fact that the embedded CP does not behave as a thematic argument of the modal auxiliary confirms the hypothesis that a verb like bisogna or toca2 does not have a VP.\textsuperscript{19}

Our proposal tries to transpose an old idea about English modals (cf. Lightfoot (1979) and Roberts (1985)) in terms of a more precise theory of syntactic encoding of semantic features and exploits its potential to account for the subtle aspects of the syntactic and morphological behaviour of modals.

It is clear however, that our hypothesis must be different from that regarding English modals, as they seem to have a monoclausal structure, while Italian deontic modals can select at least two distinct syntactic portions: bisogna and toca2 select a complete CP while andare and vuole select a passive past participle.\textsuperscript{20}

We will now try to explain the observed properties of deontic modals on the basis of the hypothesis illustrated above.

\textbf{5.2.1. Morphological gaps in the paradigm}

Our hypothesis derives the ungrammaticality of some verbal forms from two distinct factors. Recall that the impossible forms are a) simple past b) past participle c) gerund d) infinitive.

We have proposed that deontic modals are directly inserted under the root modality head, leaving the lower FPs inert. From this it follows that verbal forms having a [+strong] specification for functional heads that are marked as [-strong]

\textsuperscript{19} The new syntactic theory presented in Chomsky (1992) and (1994) gives us a new possibility to capture the connection between the morphological gaps and the absence of a thematic grid. Chomsky (1994) proposal about syntactic structure only admits that a set (a set of sets) of features are projected and then merged with others. Thus, it is not possible to have a totally empty V* category, there must be at least a phonologically empty verbal head in order to project its features to the maximal node.

\textsuperscript{20} Our analysis still needs a refinement in order to account for intermediate cases where the absence of some FPs seems connected with the absence of some thematic role. An auxiliary like andare in its purely passive reading for instance, cannot have an agent expressed and at the same time cannot be inflected in the simple present form.
cannot be realized, as the features of the verbal form do not match the features of the corresponding functional head. Verbal forms, such as the past participle or the simple past, which have strong aspectual features, cannot thus be checked. Hence, our theory predicts that such forms are excluded for modal auxiliaries.

However, these two forms are not the only ones that are not available: the infinitive and the gerund are also impossible, but they are not marked with any strong feature on heads that are lower than the root modality head.

There are two ways to consider the problem: either look at the impossible forms and try to find out what they have in common, and then why they are excluded, or look at the possible forms and try to discover why they are permitted.

It is possible to find a common feature for the possible forms: they can be all marked with a [+irrealis] feature. The subjunctive and the conditional can have both an irrealis value, and the same is true for the future and the imperfect (see Bertinetto (1993)). Even the present tense form can be interpreted as irrealis (see Bertinetto (1993)). All these forms can thus mark the head of MoodP as [+strong] in the structure seen above, but this is not the case for the impossible forms, which can never mark Mood° as [+strong]. Hence, we can formulate the hypothesis that deontic modal auxiliaries can only be inserted under the root modality head if the higher Mood° head is marked [+strong], but not if Mood° has the default specification, as is the case for the impossible forms.

In other words, the root modality head can contain the deontic modal only if the higher Mood head is marked with strong features. Thus, all forms that cannot be specified as [+irrealis] or that must check a strong feature on weak functional heads are not grammatical with deontic modal auxiliaries.

Note that our analysis of impossible forms with modal auxiliaries contains two distinct explanations: some forms are excluded because they must check strong features on FPs that cannot be marked as [+strong] and thus remain with unchecked features, and other forms are excluded because they cannot be marked as [+irrealis] and deontic modal auxiliaries are only compatible with a strong Mood head.

Note also that it is only with modal auxiliaries that the set of missing forms remains constant. Other types of auxiliaries, which do not need a Mood head marked with the [+irrealis] feature, tolerate the infinitive and gerund, but can never be inflected for the past participle. The passive auxiliary *venire* "come" for instance can be inflected for the infinitive and the gerund but not for the past participle form:
(43)  a. Venire arrestati non è un’esperienza piacevole
   'To be arrested is not a pleasant experience'
b. Venendo arrestato tutti i giovedì, ha assunto un avvocato
   'Being arrested every Thursday, he has hired a lawyer'
c. *E venuto arrestato ieri
   ' (He) has been arrested yesterday'

This is predicted by our hypothesis that different verbal forms are excluded on the basis of different factors. It is not a problem that some tenses are excluded on the basis of their unchecked features and others because they do not have the “correct” value. On the contrary, we need this partition among impossible forms, since with other auxiliaries the impossible forms constitute only a subset of those seen with modal auxiliaries. This hypothesis also explains why a single argument is sufficient to “restore” the morphology that a modal auxiliary with no thematic grid lacks. If a verb has a thematic grid, (even though it contains only one argument), it must project a VP and is inserted under V°. Consequently all the FPs can be marked with [+strong] features and all verbal forms can be checked in the appropriate position.

5.2.2. Restrictions on the presence of a subject and object clitics

Let us now turn to the other two questions: why is it that the possibility of having a subject depends on the type of selected structure?

We will begin with the analysis of bisogna ‘it is necessary’ and toca2 ‘touch’ neither of which can have a subject.

As deontic modal auxiliaries do not have a theta-grid, they cannot have a thematic subject.

However, one might hypothesize that they could have a raised subject. This question is connected to the other one, which regards the difference between bisogna and a raising verb.

From a purely descriptive point of view, it seems that the difference between bisogna and a raising verb lies in the presence of a thematic structure. A verb like sembrare always has an (explicit or implicit) experiencer theta-role. If this is really the discriminating factor that distinguishes between a raising verb and a non-raising one, we can treat raising as a non-primitive property. One could hypothesize that the
raising property depends on the presence of a VP. We will not go into the detail of this topic but will restate our observation in the form of a descriptive generalization:

(44) A raising verb must have a thematic grid

As modal auxiliaries do not assign any thematic role, they do not have a VP. Hence, they cannot be raising verbs. The difference between bisogna and raising verbs can thus be derived from our assumption that deontic modals lack a VP.

The only possibility that remains open to bisogna is to have an expletive subject. Recall however the data illustrated in section 2.: bisogna cannot control a PRO, it lacks an Agreement morpheme in Sardinian and it lacks expletive subject clitics in the northern Italian varieties. It thus seems that the AgrS projection of bisogna and toca2 is not available at all. In order to explain these facts, we will assume that the lack of a VP implies the lack of all AgrPs related to the arguments of the verb. This also explains why bisogna and toca2 cannot host object clitics: as object clitics are also related to Agreement projections, they cannot occur.

The other two modal verbs that we have examined, namely vuole and andare tolerate a subject. However, their embedded structure is not a complete CP, as is the case for bisogna and toca2, but a passive past participle (probably a VoiceP, following Cinque's theory). We can hypothesize that verbs like vuole ‘want’ and andare ‘go’ are inserted under the root modality head but embed a [+strong] VoiceP (following Cinque (1993) the passive is the strong value for the Voice head) and not a complete CP as bisogna and toca2.

As the structure with verbs like vuole and andare is monoclausal, the AgrPs can be activated if they are parasitic on the VP of the embedded verb. Thus, the object of the embedded past participle can occur as the subject of the modal auxiliary.

A more difficult question is the one regarding the features of the subject: why are only third person subjects permitted, while first or second person subjects are not possible?

In order to answer this question, we need a more articulated theory of the Agreement projection(s), which we do not have at present. A possible line of investigation could exploit Kayne's modular analysis of auxiliary verbs (cf. Kayne (1993)). He assumes the presence of an AgrS projection in the syntactic space of the past participle. This AgrS is clearly sensitive to person features, as it triggers syntactic differences according to the person feature.
We could advance the hypothesis that this AgrSP must be located higher than VoiceP but lower than the root modality head. In a highly speculative vein, it could be the case that the lower AgrSP cannot be activated as it is contained in the inactive portion of the sentence. This suggestion is clearly not a satisfactory answer to the facts that we have observed, but we hope that it can contribute to lead future research to explore the connections that exist between the structure of VP and functional projections.

6. Conclusion

Let us now sum up the analysis we have presented here. We have examined synchronic and diachronic instances of the process that changes a lexical item into a functional element. We have found out that the loss of a thematic grid is a necessary requirement for this transformation. Some deontic modal verbs that lack a thematic grid are characterized as functional heads by virtue of this property. They are directly inserted in RootMod⁰, where the higher functional head of Mood⁰ is marked as [+irrealis]. The functional structure lower than Rootmod⁰ is not activated.

While verbs like bisogna and toca2 do not have access to any active VP, va and vuole can be parasitic on the VP of their participle complement and thus admit a third person subject.

It seems evident that English modals, with their morphological poverty and syntactic restrictions, are such as to permit the same type of analysis that we propose here. They could also be considered as inserted into the functional modal head corresponding to their semantic interpretation (as epistemic or as deontic). English modals, however, look more similar to the Italian va and vuole than to bisogna and toca2 as the embedded FP is not a complete CP but a lower portion of the functional structure.

French falloir is also very similar to toca, and it could possibly be shown that the two behave in the same way if we were to succeed in isolating a faut1 and faut2 as we did with toca. In order to do this, however, very delicate operations involving subtle semantic interpretations are required, and these can only be performed by a native speaker. An interesting question regards the reason why most Italian varieties have developed a class of functional modal heads. We do not have an idea of other properties that may be related to this change in the history of Italian, but it is clear
that this cannot be related to the loss of verbal agreement morphology as seems to be the case for English.

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References

ASIS, Atlante Sintattico dell'Italia Settentrionale, unpublished material, CNR, Centro di Studio per la Dialettologia Italiana, University of Padua.
Chomsky, N. (1994) "Bare phrase structure", ms., MIT.
Cinque, G. (1993), "La struttura funzionale della frase romanza", Class Lectures, University of Venice.

Probus, 3, 1-27.

Linguistica 47.

Li, Y. (1990) "X\textsuperscript{o} and Verb Incorporation", Linguistic Inquiry 21, 3.


E. Fava (ed.) Proceedings of the XVII Incontro di Grammatica generativa, 
Rosenberg and Sellier.

Poletto, C. (1993), La sintassi del soggetto nei dialetti italiani settentrionali, PhD 
Thesis, University of Padua.

Auxiliaries" in Natural Language and Linguistic Theory 3, 1.

Italiana di Consultazione, Il Mulino, Bologna, 85-98.

Mass.

examples", in M. Harris and P. Ramat (eds.) Historical Development of 
Auxiliaries, Berlin, Mouton-De Gruyter.