

Paola Benincà and Cecilia Poletto, University of Padua

THE DIACHRONIC DEVELOPMENT OF A MODAL VERB OF NECESSITY

1. Introduction*

In Benincà & Poletto (1994) we have presented evidence, drawn from modal auxiliaries of necessity in some Italian varieties, that the loss of forms in a verbal paradigm is connected to the loss of certain semantic properties of the verb. The idea we have put forth is that verbs' syntax and morphology are determined in some of their aspects by their thematic grid.

In this paper, we will show that, the loss of a verb's thematic grid is accompanied by a change in its syntax and morphology. Thus, the diachronic change described in this paper as a process of grammaticalization provides further confirmation for an analysis originally based on synchronic data.

The morphosyntactic limitations that we will observe for modal auxiliaries shed 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 observe supports a syntactic implementation of the interaction between tense and mood in a very restrictive theory.

This paper is organized as follows. In section 2. we abstract from Benincà & Poletto (1994) a description of the properties of modern Italian *bisogna* ('must/is necessary'), which has the "most reduced meaning" among Italian verbs of necessity. We then list its possible and impossible forms and the constraints which govern its syntactic behaviour. In section 3. we give an overview of other modal auxiliaries: Venetan *toca* 'touch', standard Italian *va* 'go' and Polesano *vuole* 'want'; they all share with *bisogna* the observed constraints only if a particular reading is selected. These verbs can be used as regular main verbs, but they can also be used as modal auxiliaries indicating a pure state of necessity where no theta-role is assigned (we will define this reading as "deontic reading"). When they assume the meaning of "pure necessity" of Italian *bisogna*, or better, when they lose a theta grid as *bisogna* does, they also undergo the same impoverishment of their paradigm and acquire the same syntactic constraints.

In section 4. we present our analysis of the synchronic data and discuss the hypothesis that modal auxiliaries lacking a thematic grid are directly inserted under Mod°.

In section 5. we examine the diachronic development of *bisogna*, showing how it has developed from a regular transitive verb into a pure modal head. Old Italian *bisogna* does not show any of the morphosyntactic restrictions that we observe in modern Italian: it can be inflected for the whole paradigm, it can host clitics and it has two arguments (an experiencer and a theme). It seems then that Old Italian *bisogna* is still a full verb that projects a VP with its arguments, while modern Italian *bisogna* is a purely functional element that is inserted directly into a modal head Mod°. Therefore, the diachronic data strongly support our claim that grammaticalization goes hand in hand with the impoverishment of the thematic grid.

2. Surface properties of *bisogna*

2.1 *Bisogna* has a defective paradigm

The verb *bisogna* only means a pure state of necessity; its meaning does not involve any cause of the necessity itself nor a particular person or object individually concerned with it. This semantic characteristic will be clear when contrasted with one of the readings of the modal auxiliary *toca*. *Bisogna*, as the examples in (1) show, can be followed either by a CP with a subjunctive complement clause, or by 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

Its morphological paradigm is defective: 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 follows it:

- (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...
d. *Bisognerebbe farlo/che lo facesse*
It-would-be-necessary (conditional)...
e. *?Credo che bisogni farlo/che lo faccia*¹
I think that it-be-necessary (present subjunctive)...
f. *Penso che bisognasse farlo*
I think that it-was-necessary (imperfect subjunctive)...

The possible forms of *bisogna* are then the present, imperfect and future indicative, the present and imperfect subjunctive and the present conditional². All other forms are impossible, as the following list illustrates:

- (3) a. **Potrebbe bisognare farlo /che lo faccia*
It could be-necessary (infinitive)...
b. **Bisognando farlo, lo fece*
Being-it-necessary (gerund)....
c. **E' (era, etc.)/ ha...bisognato farlo*
It is (was, etc.)/has been-necessary (past participle and compound tenses)
d. **Bisognò farlo*²
It was necessary to do it

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 'generic' tense, (cf. Giorgi & Pianesi (1991) for a syntactic characterisation of this observation).

b) On the contrary they can 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, as they have to be checked in a position higher than the functional head of RootMod, an hypothesis that we will discuss in section 4.

2.2 *Bisogna* lacks a subject

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

- (4) a. Andrò a Roma senza vedere il papa
(I) will go to Rome without seeing the pope
- b. Nevica senza necessariamente fare molto freddo.
It snows without necessarily it being very cold .
- c. ?Sembra che si tratti di un delitto senza esser chiaro chi sia il colpevole.
It seems that it is a murder without it being clear who the culprit is.
- d. *Bisogna che lo leggiamo senza esser necessario che lo facciamo subito.
It is necessary that we read it without it being necessary that we do so immediately.
- e. *Bisogna leggerlo senza esser necessario farlo subito.
It is necessary to read it without it being necessary to do so immediately.
- f. ?C'è bisogno che lo leggiamo senza esser necessario che lo facciamo subito.
There is need that we read it without it being necessary that we do so immediately

The contrast between (4c) and (4d, 4e) shows that there is a difference between the non argumental subject of a verb like *sembrare* 'seem' and the subject of *bisogna*, as the subject of *sembrare* can marginally control a PRO while the subject of *bisogna* cannot. We suggest that this stems from the fact that *bisogna* completely lacks a subject position, while this is not the case with the impersonal verb *sembrare*.

Further evidence in this sense comes from the behaviour of northern Italian dialects. In these varieties subject clitics are heads that appear when the syntactic projection of AgrS weakens, losing its pro-drop properties. Subject clitics appear in order to restore the pro drop capacity of AgrS. Within the domain of northern Italian dialects there is a considerable variation regarding which type of subject clitic (argumental, quasi-argumental or expletive) is required. Expletive subject clitics imply the presence of argumental subject clitics in a given dialect (see Poletto (1993)). Even in those varieties that show an obligatory subject clitic with expletives, there is a single verb that can occur without a subject clitic, and this verb has precisely the semantic properties of *bisogna*, (see Benincà & Poletto (1994: 5)). We will interpret this observation as indicating the impossibility of any type of subject in the SpecAgrS position of the deontic modal auxiliary.

Furthermore, in Italian as in the dialects, a verb with the semantic properties of *bisogna* cannot host a raised subject coming from the following clause. The sentences in (5) are to compare with the behaviour of the impersonal *sembra* "it seems" given in (6):

- (5) a. *Mario bisogna leggere
M. is-necessary to read
- b. *Bisogna partire Mario
M. is-necessary to leave
- (6) a. Mario sembra leggere
M. seems to read
- b. Sembra conoscerlo Mario
It-seems to know him M.

The contrast between (5) and (6) shows that *bisogna* does not have a subject position available to the raised subject. We will come back to this in section 4.

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 (7a)) or to the embedded predicate via restructuring (7b). This is true even for 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 (8):

- (7) a. *Gli bisogna mangiare
Him is-necessary to eat
He needs to eat
b. *Lo bisogna incontrare
Him is-necessary to meet
It is necessary to meet him
- (8) a. Lo sembra fare volentieri
It he-seems do willingly
He seems to do it willingly
b. Gli sembravate parlare amichevolmente
To-him you-seemed to speak friendly
You seemed to speak to him friendly
c. Gli è necessario partire
To-him is necessary to leave
He needs to leave

Let us thus summarize the special properties that we have observed for *bisogna*:

- (9) a. *Bisogna* can be inflected only for those forms which can express modality
b. Neither an overt nor a null subject is available
c. *Bisogna* is not a raising verb
d. No clitics can cooccur *bisogna*

In the following section we will present arguments that are developed in more detail in Benincà & Poletto (1994)³.

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 transitive 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; it has a DP object, which can be an object clitic and it can have a benefactive dative clitic too.

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 some differences, a dative experiencer (or possibly a benefactive clitic). Let us call *tocal* the various uses, and *toca2* the reading that corresponds to *bisogna*. The argument of *tocal* is expressed by a dative element, and, with this reading, *toca* can only be followed by an infinitival clause:

- (10) a. Me toca partire
To-me touches to-leave
"I have to leave"
- b. Ghe toca Mario partire
To-him touches Mario to go
"It is Mario's turn/duty to leave"

When the complement is an infinitive, the subject of the embedded clause is always the person affected by the necessity expressed by the governing verb *tocal*.

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". With these readings, *toca* has all tenses. It is interesting to observe that the form of the dative element is related to the choice of the reading of *tocal*. In particular, if the dative is realized by a clitic element the reading can only be "someone is obliged to do something that he would have preferred not to do", while a dative DP only admits one of the two remaining readings (note that in (10b) the DP is doubled by a clitic, but this is a general fact in Venetan). This observation will become relevant later on in order to correctly interpret Galileo's data and understand the diachronic change of *bisogna*.

The purely deontic reading of *toca*, very similar to Italian *bisogna*, is expressed by *toca* when it governs an inflected complement clause. We will use this distinctive feature to isolate the syntactic and morphological properties of this variant. In (11) *toca* has only the purely deontic reading:

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

Toca2, corresponding to the purely deontic reading, 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.

- (12) a. *Ga tocà che lo fazese mi
Has touched that it did I
"I have had to do it"
- b. *Podaria toccare che lo fazese mi
I might have to do it
- c. *Tocando che lo fasa mi,...
Having to do it myself,...

The tenses that are admitted with *bisogna*, the imperfect, future, conditional and subjunctive, are grammatical also with the purely deontic *toca2*:

- (13) 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 tocasse che te 'ndasi ti
I thought that you had to go

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 auxiliary. This is indeed the case:

- (14) a. *Nisuni toca che vaga
 Nobody has to go
 b. *Me toca che parla doman
 I have to speak tomorrow

Example (14a) shows that *toca* cannot have a subject DP, (14b) illustrates that no clitic can be hosted by it.

The parallelism of *bisogna* and *toca2* shows 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: we will analyse these properties in section 4. 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 gives rise to 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", *distuggere*, "destroy" etc.). A sentence like the following is ambiguous, admitting both readings of the auxiliary *andare*:

- (15) La sterpaglia andava bruciata tutti gli anni
 The brushwood went (imperfect) burnt every year
 "The brushwood was burnt every year"
 "The brushwood had to be burnt"

The passive-deontic reading shows some morphological restrictions which parallel those found with *bisogna* and *toca*; 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 auxiliary *andare*, like *bisogna*, should not tolerate a subject DP in its SpecAgrS position. However, (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*.⁵ This seems to be the effect of restrictions that require a very detailed analysis of the AgrS projection and of its sub-components.

- (16) 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* are followed by a complete CP as their complement, while *andare* is followed by a passive past participle:

- (17) a. *Bisogna* [che vada io]
It-is-necessary that go I
"I have to go"
- 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 passive past participle (see also note 14).

This preliminary hypothesis is confirmed by data coming from other Italian varieties, where the verb *volere* "want" is used in a deontic sense and is followed again by a past participle. The surface subject is the object of the past participle, which becomes the subject of the passive:⁶

- (18) *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).⁷ 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 & Poletto (1993) (32)) with the other deontic modals is striking.

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:

- (19) 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’ are followed by a full CP while *andare* ‘go’ and *vuole* ‘want’ are followed by 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 auxiliary

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

4. Deontic modals as functional heads

4.1 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. In this section we will discuss our analysis of the relation we have hypothesized on a synchronic basis. The observations based on the diachronic development of the verb *bisogna* that we will present in section 5. will further support the relation we have hypothesized between the morphosyntactic restrictions and the thematic structure of the verb.

We have five 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 auxiliaries that can have the particular deontic reading of pure necessity.

b) the fact that only some verbal forms (past participle, gerund and infinitive) are excluded and not others. In particular we would like to find out what the possible or impossible forms have in common that renders them grammatical and ungrammatical.

c) the impossibility for *bisogna/toca2* to host clitics.

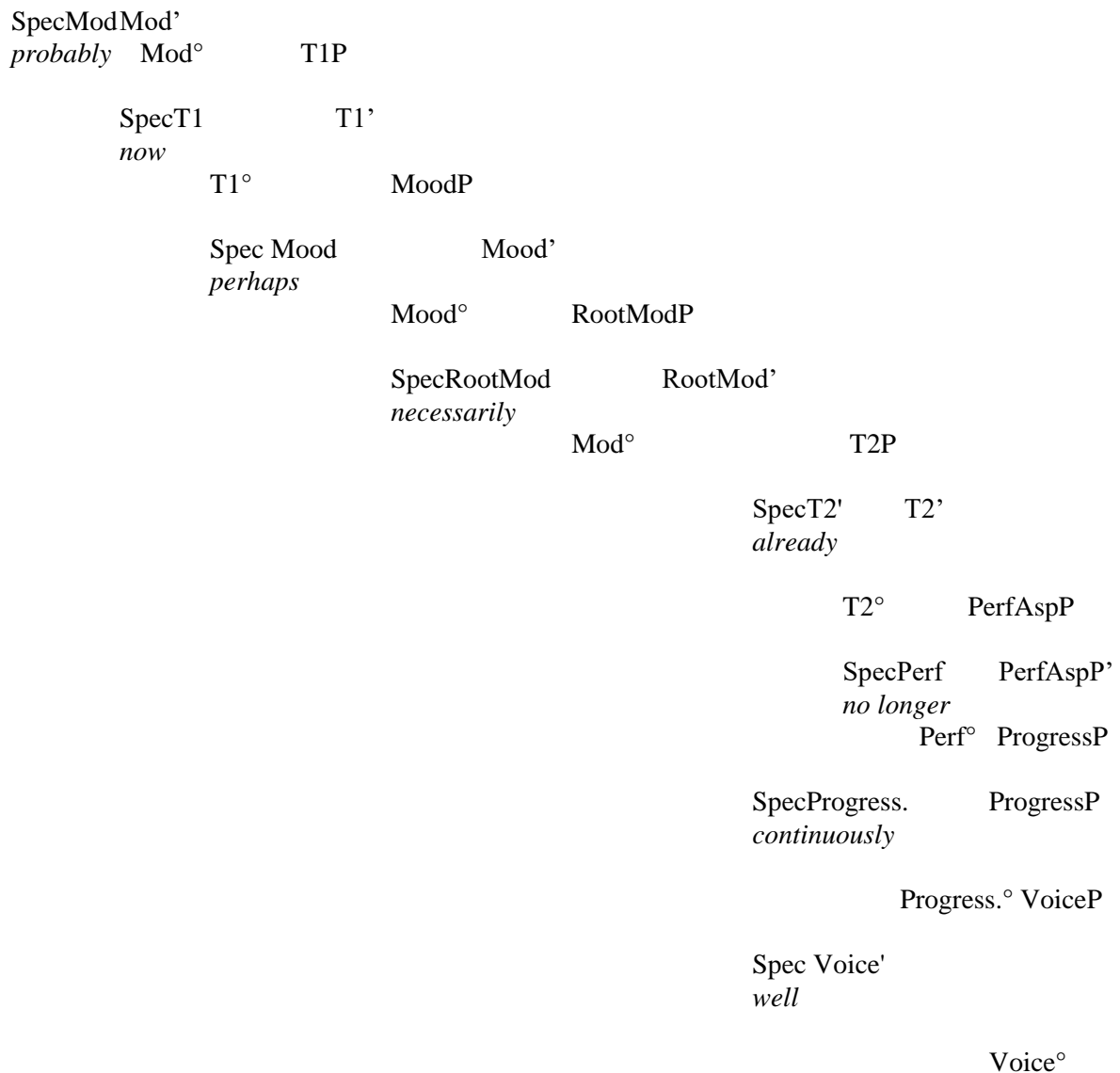
d) the relation between the possibility of having a subject and the structure embedded under the modal auxiliary. If the modal auxiliary embeds a CP, no subject is possible (cf. *bisogna* and *toca2*); if it embeds a passive past participle, only a third person subject is possible (cf. *andare* and *vuole*).

e) the difference between verbs like *bisogna/toca2* 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*?

We will frame our account in terms of an articulated functional structure of the sentence such as has been proposed in Cinque (1995) on the basis of the surface relative order of adverbs and functional heads. Of the sentence structure discussed by Cinque (1995) we will give here only what is relevant to our topic. In (21) we have indicated the adverbs corresponding to each relevant functional head⁸

(21)

Epist.ModP



VP

Cinque (1995) presents evidence that there are three distinct modal phrases in the structure of the sentence. One of them is located above TP1 and two are located below TP1. The highest one hosts epistemic modality and its specifier position hosts adverbial elements like *probably*; this phrase does not concern us here directly. The second one is a MoodP that hosts a [+/-irrealis] feature (connected in Romance to grammatical mood such as subjunctive and conditional). Its specifier hosts adverbs like *perhaps*. The third modal phrase is a "root modality" projection, whose specifier hosts subject oriented adverbs like *necessarily*. Following Cinque's proposal, we will assume that a F° head has marked or default values. For instance, the marked value of the perfect/imperfect aspect head is 'perfect', the marked value of the progressive/generic aspect head is 'progressive'. Following Giorgi & Pianesi (1991), we take T1 to mark the relation between Reference Time and Speech Time (where 'coincidence' between the two is the default value and 'non coincidence' the marked one); T2 instead marks the relation between the Event time and Reference time (coincidence/non coincidence are again respectively default and marked value).

A verbal form raises to check its features in the appropriate head, and can only move upward. When a verbal form (auxiliary, modal,...) is inserted directly in a higher functional head rather than in VP, it can only check features corresponding to functional heads above it.

4.2 The analysis

The central idea we want to exploit is that a modal auxiliary with the deontic reading of "pure necessity" lacks a theta-grid.

Consequently to this, we can conceive of it as a functional element directly inserted into the head of a functional projection corresponding to its semantics, namely the head of RootModP (cf.40). In other words, we propose that the deontic reading is provided by a purely functional element.⁹

Cinque's proposal gives us the more articulated structure that we need in order to connect the morphosyntactic properties of deontic auxiliaries to their semantics.

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 unmarked;
- b) or they could be totally absent.

In any case, if the deontic auxiliary is directly inserted in RootMod°, all the projections below it are unavailable.

There is some evidence for the presence of functional structure (but not necessarily the VP) below 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 1995, in the specifier positions of functional projections lower than the root modality projection but clearly higher than VP:

- (22)
- 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
 - c. *Toca zà impissare el termo*
It is already necessary to turn on the heater

This could mean that the lower structure is present, but the corresponding head positions cannot be checked by the deontic modal auxiliary which is 'base generated' in a higher head.

On the contrary we 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* related to the verbs *to shout* and *to murmur* in English- cannot have a sentential complement:¹⁰

- (23)
- 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

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 as a site of theta role assignment^{11 12}.

4.2.1 Morphological gaps in the paradigm

Summarizing, we have proposed that a deontic modal auxiliary like *bisogna* is directly inserted under RootModP; that the structure below this projection is present, since adverbs related to the lower portion of the clause can be very naturally used with *bisogna*, but all FPs must have their default values. This means that morphological forms which are associated with marked values of a lower head and thus require checking cannot be formed.

Verbal forms such as the active or passive past participle, which have a marked value for [voice], T2 or [perfect], and the simple past, which has a marked Aspectual feature, cannot thus be checked, because these FPs are lower than the point in the structure where the deontic modal auxiliary is inserted. Although we do not have clear evidence on the precise position of the F heads hosting gerunds and infinitives, we conjecture that they belong to a portion of the structure situated below the RootMod head (for the gerund, for ex., this is rendered plausible by the fact that *-ndo* suffix is associated with the marked value of the [progressive/generic] FP).

Concerning the forms which are possible, we observe that they can all have a marked [+irrealis] value of Mood, which is higher than RootModP. The subjunctive and conditional can have both an irrealis value, and the same is true for the future and the imperfect. Even the present tense form can be interpreted as irrealis, and can work as a substitute of the present subjunctive precisely with *bisogna*¹³.

These forms can then check this [+irrealis] feature on a projection higher than RootMod where a *bisogna* type deontic modal auxiliary is inserted.

4.2.2 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 embedded structure?

We will begin with the analysis of *bisogna* and *toca2* 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:

(25) 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.: there is no subject of *bisogna* that can control a PRO, and *bisogna* 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 occur¹⁴.

5. The diachronic perspective

5.1 Introduction

In this section we will analyze the syntax of *bisogna* as it developed through the history of Italian. The diachronic facts considered here will constitute a further argument in favour of the

idea that the morphological and semantic properties of deontic auxiliaries go hand in hand. In 14th century Italian and, in the literary style, up until 19th century, the distribution of *bisogna* differs in an interesting way from that of modern *bisogna*: all the restrictions which hold in modern Italian are absent.

5.2 *Bisogna* through the History of Italian: the Data ¹⁵

5.2.1 Boccaccio's *Decameron*

It is readily apparent that in Boccaccio's *Decameron* (second half of the 14th century) the thematic structure of *bisogna* is different from the modern one: an experiencer theta role is realized with a dative and a theme with a nominative argument. Moreover, the verb agrees with the theme-subject (recall that this is never the case in modern Italian).

- (26) a. E quivi 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):

- (27) 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

(26) and (27) are consistent with the analysis developed for modern *bisogna* in section 4. 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 can be inflected for all tenses: our analysis predicts that this two phenomena are expected to appear together.

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

- (28) 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 do something".

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.

5.2.2 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.

- (29) 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:

- (30) a. ...se fussino venuti tempi che fussi bisognato procedere con rispetti... (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 (30) seem to contradict our hypothesis that whenever *bisogna* lacks a theta grid it loses non-finite inflection, as they can be found in the present perfect (a verbal form which is excluded in modern Italian).

However, one could hypothesize that impersonal *bisogna* is only apparently similar to its modern counterpart, but still has a thematic grid in Old Italian. We will present here a test based on coreference showing that the subject position of *bisogna* is still present in Old Italian. Note the contrast between Old Italian in (31) and modern Italian in (32):

- (31) a. Chi vuole operar bene bisogna allontanarsi da tutte le cure (Vasari, III, 507)
Who wants to act well is-necessary to go away from any care...
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.
- (32)a. *Chi voleva entrare in essa bisognava inchinarsi con il capo (modern Italian)
Who wanted to get in it, was-necessary to bend his head.
b. Chi voleva entrare in essa, bisognava che si inchinasse con il capo
Who wanted to get in it, was-necessary that he bent his head
c. Chi voleva entrare in essa, doveva inchinarsi con il capo
Who wanted to get in it, had to bend his head

In (31) the anaphoric pronoun *si*, cliticized to the infinitival verb, is bound by a PRO in subject position of the infinitival sentence, which is controlled by the free relative clause. This means that the free relative clause must be interpreted as an argument of *bisogna* in order to bind the reference of the embedded PRO. This argument is thematically an experiencer, presumably realized as a nominative subject. Hence, even the impersonal *bisogna* in Old Italian has at least one argument in its thematic grid, represented by a free relative clause in our examples.

This structure is not possible in modern Italian. The ungrammaticality of (32b) can be derived assuming that modern Italian *bisogna* has no subject position which can bind the reference of PRO (which in turn binds the anaphor). An infinitival sentence embedded under *bisogna* can only have an arbitrary PRO and the anaphoric pronoun *si* cannot be coreferent with the free relative clause. Therefore, the contrast between (31) and (32b) concerning the binding of a PRO and of an anaphor shows that in Old Italian there is a subject position which can be occupied by the free relative

clause; this position is not available in modern Italian. (32a) is possible, with the free relative clause left-dislocated from the subject position of the embedded tensed clause. (32c) is possible with another deontic modal auxiliary, *dovere*, which has a subject position.

Hence, even the impersonal forms are different from the modern version of *bisogna*, as in Old Italian there is always at least one argument while this is not the case in modern Italian. Therefore, 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.

5.2.3 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:

- (33) ...coloro che ne bisognano (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:

- (34) Quasi tutte le giovani si fanno più belle in viso e non bisognano d'altri ornamenti
 Foscolo IV 342
 Almost all young(fem) themselves make more beautiful in the face and not need
 plur.) of other ornaments

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

- (35) 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 5.3

5.2.4. Galileo Galilei

We have examined the *Dialogo sui massimi sistemi* (1632) by Galilei, whose language seems to be less artificial than that 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 never inflected for participle, gerund and infinitive:

- (36) a. bisogna dunque che voi diciate 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 260 show the older structure with two arguments, an experiencer and a dative:

- (37) 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...

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

- (38) Mi è bisognato tardar lì (p. 335)
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*:

- (39) a. vengono calcolando ... e concludendo bisognare in dottrina del Copernico
ammettere che... (p. 427)
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(p. 425)
I am myself concluding be-necessary that those that stay...

The verb *concludere* takes an inflected clause as its complement in modern Italian¹⁶. It is interesting to observe that when *bisogna* is used without arguments it never shows these forms in a sample of 252 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.

Another interesting observation regards the number of occurrences of *bisogna*, which is very limited in Boccaccio's and Machiavelli's texts, while it increases dramatically in Galileo's *Dialogo*. We will come back on this in section 5.3.

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, it happens to someone":

- (40) a. secondo il numero che gli è toccato (p. 91)
according to the number that fell to him
- b. adunque non vi è toccato mai a veder la Terra (p.110)
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.

5.2.5 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:

- (42) a. Bisogna sapere che... (p. 236)
Is-necessary to know that...
- b. Bisognava pensarci prima (p. 295)
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:

- (43) Non sai la fortuna che mi è toccata? (p.287)
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:

- (44) ...o per forza mi toccherà a studiare (p.220)
or necessarily to-me will touch (prep.) study (inf.)
or I will necessarily have to study

No bare infinitive has been found.

5.3. Diachrony and Synchrony come together

The three diachronic 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.¹⁷

In the first stage impersonal *bisogna* is present, but in a limited number of occurrences. In Boccaccio's *Decameron* we have very few examples of impersonal *bisogna*, which is only attested in the forms which are also possible in modern Italian. In Macchiavelli's text, on the other hand, impersonal *bisogna* occurs also in the forms that contemporary Italian does not allow (past participle, infinitive and gerund). However, there are reasons to believe that even in this period impersonal *bisogna* is not identical to the modern one, having a subject position which can control a PRO in the embedded infinitive (as we have seen above commenting cases such as (31)). This suggests that the status of the embedded sentence under impersonal *bisogna* (cf. examples like (28a)) is the same as that of the sentence selected by lexical *bisogna*, i.e. it has a complete thematic grid (cf. (26c)). We conclude that, at this stage, *bisogna* always has a thematic grid and therefore projects a VP.

The second stage, represented by Galileo Galilei's work, shows a majority of examples where *bisogna* has no argument. As it behaves as in the modern language (it lacks the same verbal forms, it lacks a subject and cannot host clitics), we assume that at this point the change from a lexical into a purely functional element has already taken place. As noted above, the frequency of use of *bisogna* is much higher in Galileo's text than the other two texts examined (the whole *Decameron* contains only 44 examples and Machiavelli's *Principe* 15, while Galilei has 260 occurrences): it is tempting to interpret this fact as connected to the development of *bisogna* as a modal auxiliary. In fact, functional elements tend to occur in a given corpus with much higher frequency than lexical elements.

Only eight examples in Galilei's text show properties which partly overlap with the older usage. In these cases, *bisogna* takes a dative experiencer, which is always realized as a clitic, and in one case it appears in the past participle. Note that "modern" *bisogna* occurs in 252 examples in Galilei's text and no past participle, infinitive or gerund have been found in this set, while a past participle occurs precisely when a dative experiencer is present: this constitutes evidence in favour of our proposal regarding the connection between the theta grid and the morphosyntactic restrictions. The fact that the experiencer is always realized as a clitic pronoun strongly recalls the behaviour of modern Venetan *toca* noted in section 3.1.: only when the experiencer is realized as a clitic, the following infinitival sentence has the meaning "someone has to do something which he does not like" (see example (10)). This suggests that there are two different structures involved in the realization of the experiencer theta role. As the reading just mentioned is available only with a clitic, it could be hypothesized that the experiencer is realized as a sort of benefactive only when the verb is a deontic modal auxiliary. If this is true, we could think that even the eight examples found in Galilei's work do not have the same structure than those found in Boccaccio's *Decameron*. It could be hypothesized that the structure with the dative clitic represents an intermediate stage of evolution from the deontic modal verb with a rich thematic grid to the purely functional modal auxiliary which has lost all its arguments. Dative clitics also realize a benefactive, which cannot be expressed by a tonic pronoun or by a DP. In these structures the clitic can be analyzed in two ways: it can realize the experiencer - and as such be connected with a position inside a VP - or it can be a sort of benefactive, which is not necessarily an argument of the verb. If the clitic is interpreted as a true experiencer, *bisogna* will necessarily have a VP layer, if the clitic is

interpreted as a benefactive, the VP is not necessarily projected.¹⁸ This ambiguity might have favoured the passage from the lexical to the functional element.

In the third stage, Collodi's *Pinocchio*, there is no trace of the older construction with two arguments and behaves as the modern *bisogna* with respect to the possible forms: both the thematic grid and some verbal forms have disappeared.

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.

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 that the loss of a thematic grid appears to be a necessary requirement for this evolution.

We have supposed that the morphological lacunae observed for deontic auxiliaries with the semantic properties of *bisogna* are not historical accidents, but reflect the syntactic consequences of the semantic poverty of the verb.

Modern *bisogna* has no thematic grid and, as such, has no VP. It is directly inserted into the head of RootMod, a functional projection consistent with its semantics, and the lower portion of the syntactic structure is present but the modal auxiliary cannot move through it. Therefore, morphological forms which have to be checked in FPs lower than the RootModP are not possible. The agreement projections are also blocked: for this reason clitics and a nominative subject cannot appear. The observation of older records of Italian provides support for the idea that the semantic and syntactic properties of the verb are strictly connected to its morphology. When the modal verb *bisogna* expresses not simply a deontic modality but a necessity which affects a theme and is represented by a lexical element, these arguments appear as surface arguments of the modal; with this structure, the verb can be inflected for the forms that are impossible in the modern language. Apparent cases of impersonal *bisogna* in Old Italian have been shown to be different from the purely functional deontic modal present in modern Italian, as they still preserve a thematic grid, and, as such, do not show the other morphosyntactic restrictions typical of the modern functional modal auxiliary.

An interesting question regards the reason why most Italian varieties have developed a class of functional modal heads. We do not have a clear idea of which properties may be related to this change in the history of Italian, but it is sure that this cannot be connected to the loss of verbal agreement morphology as seems to be the case for English modals.

Footnotes

*Although the research for this paper was carried out jointly, Paola Benincà is responsible for sections 1, 2, 3.1; 5.1 to 5.2.4 and Cecilia Poletto is responsible for sections 3.2, 3.3, 4; 5.2.5 to 6.

We would like to thank Ans van Kemenade, Gennaro Chierchia, Guglielmo Cinque, Diana Cresti, Charlotte Galves, Richard Kayne, Maria Pia Lo Duca, Kathleen Parker, Gertjan Postma, Paolo Salvi, Laura Vanelli, Nigel Vincent, Raffaella Zanuttini for comments and discussion,

1. 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*.

2. 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.

3. Note that the lack of non finite forms strongly recalls the development of English modals (cf. Lightfoot (1979) and Roberts (1985)). 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.

4. 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).

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

- (i) ?Tu andresti bocciato
You should-go (conditional) failed

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

7. A southern variety spoken in Puglia presents the same phenomenon and has the simple past which is excluded in this construction.

8. Cinque does not discuss AgrPs in his analysis, as they have different properties.

9. We are familiar with functional elements that are independent words in one language while they are morphemes in others. In this regard, we can recall that in 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 moment 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.

10. 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)

11. The new syntactic theory presented in Chomsky (1995) 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.

12. 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* 'go' 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.

13. Notice the contrast regarding the acceptability of the present indicative with two different deontic modal auxiliaries, the defective *bisogna* and the non defective *dovere* (see, for other, independent evidence, Bertinetto (1993)):

- i) Temo che si *deve/debba andare
(I) fear that we *have (indicative)/have (subjunctive) to go
- ii) Temo che bisogna/?bisogni andare
(I) fear that it is necessary/it be necessary to go

14. The other two modal verbs that we have examined, namely *vuole* 'want' and *andare* 'go' tolerate a subject. However, their embedded clause is not a complete CP, as is the case of *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 marked VoiceP (following Cinque (1995) the passive is the marked 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 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 associated with of the past participle. This AgrS is clearly sensitive to person features, as it triggers syntactic differences related to person specifications.

We could advance the hypothesis that this AgrSP must be located higher than VoiceP but lower than the root modality head. In the spirit of the hypothesis we are developing, it could also be hypothesized 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 lead to future research exploring the connections that exist between the structure of VP and functional projections.

15. There is not an established division of the history of the Italian language: we will then use Old Italian for the language represented by texts going up to the 14th C., Modern Italian for the language from the 19th C. onwards, and we will refer to the language of the intermediate periods by the names of the single authors.

16. 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)

17. Recall that a similar pattern was found in the case of auxiliary alternation between BE and HAVE (cf. 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.

18. However, it might be the case that the modal auxiliary is not yet inserted in the Rootmod head but perhaps in a lower functional projection.

References

Primary

ASIS, Atlante Sintattico dell'Italia Settentrionale, unpublished material. CNR, Centro di Studio per la Dialettologia Italiana, University of Padua.

Benincà, P. and C. Poletto 1994. "Bisogna and its Companions: the Verbs of Necessity". in G. Cinque et al. eds., *Paths towards Universal Grammar*. Washington D.C: Georgetown University Press. 35-58

Bertinetto, P.1993. "Il verbo". in L. Renzi and G. Salvi eds. *Grande Grammatica di Consultazione*. Bologna: Il Mulino.

Chomsky, N. 1995. *The Minimalist Program*. Cambridge: MIT Press.

Cinque, G. 1995. "Adverbs and the Universal Hierarchy of Functional Projections." *Glow Newsletter* 14-15.

Giorgi, A. and F. Pianesi 1991. "Towards a Syntax of Temporal Representation", *Probus* 3: 1-27.

Kayne, R. 1993. "Towards a Modular Theory of Auxiliary Selection" *Studia Linguistica* 47: 3-31.

Lightfoot, D. 1979. *Principles of Diachronic Syntax*. Cambridge: Cambridge University Press.

Poletto, C. 1993. *La sintassi del soggetto nei dialetti italiani settentrionali*. Padova: Unipress.

Roberts, I. 1985 "Agreement parameters and the Development of English Modal Auxiliaries" *Natural Language and Linguistic Theory* 3: 21-58.

Salvi, G. 1988. "La costruzione passiva", in L. Renzi ed. *Grande Grammatica Italiana di Consultazione*. Bologna: Il Mulino.

Stowell, T. 1981. *Origins of Phrase Structure*. PhD Thesis. MIT. Cambridge. Mass.

Vincent, N. 1987. "The interaction of periphrasis and inflection:some Romance examples" in M. Harris and P. Ramat eds. *Historical Development of Auxiliaries*. Berlin, Mouton-De Gruyter.

Editions

Battaglia Salvatore Grande Dizionario della Lingua Italiana Torino, Unione Tipografico-Editrice Torinese 1961

Boccaccio, Giovanni *Decameron* Torino, Einaudi 1980 (about 1370)

Collodi Carlo “Fiabe e racconti. I racconti delle fate, le avventure di Pinocchio, storie allegre” Roma Newton 1992. (1883)

Vocabolario dell’Accademia della Crusca Firenze Tipografia Galileiana 1863

Galilei, Galileo “Dialogo intorno ai massimi sistemi” Torino, Einaudi, 1970 (1632)

Machiavelli, Nicolò “Il principe” Torino Unione Tipografico-Editrice Torinese 1796 (1513)

Tommaso Nicolò & Bernardo Bellini Dizionario della Lingua Italiana Torino Unione Tipografico-Editrice Torinese 1929.