3 *C elements*

3.0 Introduction

In Chapter 2 we discussed three well-known cases which involve reanalysis of a verb to an auxiliary element, an affix, or a particle. All three cases share reanalysis of V to a T element. In the Romance case, though, *habeo* further reduced to a suffix, while in Greek *thelo* became a particle arguably in the C system, thus following the V > T > C reanalysis path. In this chapter, we turn to the grammaticalization of C elements. In the first three sections (3.1–3.3) we will consider the development of the subjunctive particle *na* in Greek, of Southern Italian *mu* and of the infinitival marker *to* in English. In section 3.4, we look at the accounts of the development of *that*-complementizers in Germanic (cf. Ferraresi 1991, 1997, Kiparsky 1995, Longobardi 1991) and in connection to this we also briefly discuss the Greek complementizer *pou*. Finally, in section 3.5 we consider the development of complementizers out of lexical verbs, and in particular out of a serial verb construction. Our analysis heavily relies on the data discussed in Klamer (2000). In this case we also show that lexical to functional reanalysis is upwards.

Section 3.1 starts with the particle *na* in Greek, as its discussion is crucial for the analysis of the elements *mu* and *to*. The development of *na* is seen in the light of the changes that took place in the history of Greek and were discussed in the previous chapter in relation to *tha*. There we showed that in diachronic terms *tha* is derived from *thelo* + *na*. Synchronically, *tha* and *na* are in complementary distribution and share a number of properties; furthermore, *na* is also in complementary distribution with the complementizers *oti* (that) and *an* (if). The Southern Italian particle *mu* is, on the other hand, not in complementary distribution with other complementizers (in particular *chi*, the 'that' complementizer). In all other respects, however, it is very similar to *na*, as we will see in section 3.2. There we will describe the development of *mu* from the Latin adverb *modo* ('in this way') and the complementizer *ut*. The development of English *to* cannot be seen independently of that of modals, as it seems that both

elements partly relate to the loss of the subjunctive morphology in the history of English (cf. Los 1999). In this respect, the 'modals-*to*' and '*tha-na*' developments in English and Greek respectively show a number of similarities and support our analysis of grammaticalization. On the basis of the striking number of similarities with *mu* and *na*, we argue that *to* is also a C element (section 3.3). Reanalysis of *na, mu* and *to* represents an instance of grammaticalization which is not actually associated with loss of movement steps. Instead certain lexical and functional elements change their selectional properties, in such a way that certain features (e.g. mood features) formerly associated with a lower head become associated with a higher position. In this sense, it may still be possible to claim that grammaticalization is always upward. Furthermore, as we will see, the loss of inflectional morphology, in these cases subjunctive and infinitival morphology, plays an important role in these changes, as it does in the changes we discussed in the previous chapter.

The development of complementizers like *that* (section 3.4) represents another case of grammaticalization where a demonstrative (or pronominal) element is categorially reanalysed as a complementizer. We will argue that this reanalysis is also an instance of structural simplification, further supporting our analysis from the development of the Greek complementizer *pou*.

Finally, the development of a complementizer out of a report verb or verb of saying is addressed in section 3.5. This option was already mentioned briefly in the previous chapter in relation to *tha* out of the verb *thelo*. In the present chapter we draw on more data and show how this kind of reanalysis is also consistent with our approach to grammaticalization.

3.1 From complementizer to particle: the case of Greek **na**

3.1.1 The status of ***na*** *in Modern Greek*

In the present section we will discuss the grammaticalization of the subjunctive particle *na* in Modern Greek (MG) from the Classical Greek (CG) complementizer *hína*. Reanalysis of *hína* involves morphophonological reduction (*(h)ína* > *iná* > *na*), and arguably a change in categorial features, assuming that it was reanalysed from a complementizer to a modal particle. There have been different approaches regarding the status of *na* in MG. According to some analyses *na* is a C element, just like *oti* (that) and *an* (if) (Agouraki 1991, Tsoulas 1993). For others, *na* is a mood particle (Veloudis & Philippaki-Warburton 1983), realizing a MoodP below C (Philippaki-Warburton 1992, 1998, Tsimpli 1990, Rivero 1994, among others). Depending on which of these two positions we adopt, we get different implications for the development of *na*. More precisely,

if *na* is a C element, then grammaticalization has not affected its categorial status. If, on the other hand, *na* is a Mood head (a modal particle), then grammaticalization involves a change from C > Mood. Moreover, if Mood occurs in a position lower than C, we have an instance of 'downwards' grammaticalization, which is not consistent with the claims made in Chapter 2. In order to account for its development, we first need to clarify the synchronic properties of *na*.

Let us then start by outlining an analysis of *na* in MG. First, note that the particle *na* shares a number of properties with *tha*, with which it is in complementary distribution. In particular, both particles form a complex with the verb, from which they can only be separated by clitics, as in (1):

(1) a. thelo [na to aghoraso]
want-1sg prt it buy-1sg
'I want to buy it.'
b. tha to aghoraso.
prt it buy-1sg
'I will buy it.'
c. *na tha to aghoraso.

They also select a verb which can take any inflection along the +/−past, +/−perfective dimension (the –past, +perfective V is often described as a 'dependent' form, in the sense that it cannot occur without the presence of a modal particle or certain complementizers; see Holton *et al*. (1997)). The examples below illustrate this with *na* (the relevant examples with *tha* are given in (26) in Chapter 2):

(2) a. na *egrapse* to grama. [egrapse = +past, +perfective]
prt wrote-3sg the letter
'Is it possible/could it be the case that he wrote the letter?'
'I wish he had written the letter.'
b. na *egrafe* to grama. [egrafe = +past, −perfective]
prt wrote-3sg the letter
'Is it possible/could it be the case that he was writing the letter?'
'I wish he would write the letter.'
c. na *grapsei* to grama. [grapsei = −past, +perfective]
prt write-3sg the letter
'He should/must write the letter.'
'Is it possible that he writes the letter?'
d. na *grafei* to grama [grafei = −past, −perfective]
prt write-3sg the letter
'He should/must write the letter.'
'Is it possible that he's writing the letter?'

The sentences in (2) can stand as matrix clauses in which case they are subject to a restricted interpretation. For example, (2a–b) can be interpreted as modal questions, expressing the speaker's doubt, wonder, surprise, etc., or as wishes. The same holds for (2c–d), with the additional possibility that they can also express a command (see Rouchota 1994 for the pragmatics of matrix *na*-clauses).

Despite their similarities, *na* and *tha* also differ in some clear ways. The first difference has to do with the choice and position of the negator used: *tha* is preceded by the negator *dhen*, while *na* precedes negator *min*:

(3) a. *dhen tha* to aghorasis.
not prt it buy-2sg
'You will not buy it.'
b. (*na*) *min* to aghorasis.
prt not it buy-2sg
'You shouldn't buy it.'

So in the case of *na*, negation may also intervene between the particle and V. Notice incidentally that if (3b) is taken as a matrix clause, *na* is optional.

Second, and crucial to the discussion that follows, *na*, unlike *tha*, can directly introduce a complement clause, as shown in (1a) above. This goes along with the fact that while *tha* is compatible with typical complementizers like *oti* (that) and *an* (if), *na* isn't, as the contrast between (4a) and (4b) illustrates:

(4) a. Apofasisa [*oti tha* to aghoraso].
decided-1sg that prt it buy-1sg
'I decided that I will buy it.'
b. Apofasisa [(**oti*) *na* to aghoraso]
decided-1sg prt it buy-1sg
'I decided to buy it.'

The pair in (4) is revealing in one further respect: as the English translations show, *na*-clauses distribute (to a large extent) like infinitives. Roughly speaking, *na*-complements occur with volitionals, aspectuals, causatives, implicatives, experiencer predicates and perception verbs; under certain conditions *na*-clauses also occur with epistemics (cf. Veloudis 1985, Roussou 1999), and verbs of saying in which case the *na*-complement corresponds to an embedded imperative. At the same time, when *na* introduces a matrix clause, it translates with a modal in English (cf. (2)). In this respect *na*-clauses in MG seem to subsume the function of infinitives (mainly in the embedded contexts) and Romance subjunctives or English modals (mainly in root contexts).

As already mentioned, *na* has received different treatments in the literature. If the crucial factor is its complementary distribution with *oti* and the fact that like

oti it precedes negation, then the conclusion has to be that *na* is in C (Agouraki 1991, Tsoulas 1993), as shown in (5a). If, on the other hand, one focusses on the similarities with *tha*, then *na* will have to be analysed in the same way. To this end, Rivero (1994) argues that both *tha* and *na* are in Mood(P) (see also Drachman 1994), as in (5b). Finally, there is a third option, namely to treat *na* distinct from both *oti* and *tha*. This is the stand taken by Philippaki-Warburton (1992, 1998) who argues that *na* is in Mood, while *tha* is the head of a FutureP (above TP), as in (5c). Notice also that in this analysis NegP is also below MoodP:

(5) a. [$_{CP}$ *na* [$_{NegP}$ *dhen/min* [$_{TP}$ T . . .]]]
b. [$_{CP}$ C [$_{NegP}$ *dhen/min* [$_{MP}$ *na/tha* [$_{TP}$ T . . .]]]]
c. [$_{CP}$ C [$_{MoodP}$ *na* [$_{NegP}$ *dhen/min* [$_{TP}$ *tha* . . .]]]]

Each of the above analyses captures a different insight regarding the particles under consideration, namely that *na* and *oti* have some properties in common (5a), or that *na* and *tha* have something in common (5b), or finally that *na* is distinct from both *oti* and *tha* (5c).

Where the above analyses seem to fail with respect to *na*, however, is that they analyse it either as a modal particle or as a complementizer. Instead the distribution and properties of *na* seem to suggest that it has features of both. If this is correct, then we expect *na* to be in a position where it can realize both types of features. In other words, *na* has modal properties like *tha* (irrealis), as well as complementizer properties like *oti/an*, given that it directly introduces complement clauses. It is perhaps the combination of these two properties that also allows *na* to occur in root clauses, yielding an interpretation that corresponds to certain clause-types (i.e. non-declarative). This double property of *na* seems to suggest that *na* can realize features of both M and C. Based on this, Roussou (2000) argues that the above similarities and differences can be expressed once we adopt an articulated C structure. Given that *na* and *tha* are actually particles and furthermore precede inflectional elements such as clitics, the idea is that the M position which they seem to occupy is actually situated in the C system, and can be identified with Rizzi's (1997) Fin (Finiteness) head. The typical complementizers *oti/an* occupy a higher C head, which is analysed as a clause-typing operator, similar to Rizzi's Force. The complementary distribution of *na* and *tha* is accounted for on the basis that they both occupy M. However, *na*, unlike *tha*, further raises to C, hence its incompatibility with *oti/an*. The relevant structure is given in (6):

(6) a. [$_{CP}$ *oti* [$_{MP}$ *tha* [$_{TP}$ T . . .]]]
b. [$_{CP}$ *na* [$_{MP}$ t_{na} [$_{TP}$ T . . .]]]

The structures in (6) do not include negation. Given that the choice of the negator in MG is sensitive to mood/modality, it is argued that NegP is also part of the C system, and more precisely that it is situated between C and M (see also Chapter 4, section 4.2). However, if negator *min* is present, movement of *na* from M to C should be blocked under Minimality. According to Roussou (2000), when *min* is present, *na* is directly merged in C. The features of M in this case are lexicalized by *min* (in movement terms, *min* is merged in M and moves to Neg). Thus the structure in (6) is revised as in (7):

(7) a. $[_{CP}$ *oti* $[_{NegP}$ *dhen* $[_{MP}$ *tha* $[_{TP}$ T . . .]]]]
b. $[_{CP}$ *na* $[_{NegP}$ *min* $[_{MP}t_{min}$ $[_{TP}$ T . . .]]]]

On the basis of this analysis, the elements *na* and *tha* share the M feature (modal particles), while *na* and *oti/an* are clause-typing elements (typical complementizers). Similarly negation *dhen* has the Neg feature, while *min*, apart from Neg, can also bear the M feature.[1]

The structure in (7) needs to be slightly modified to accommodate the co-occurrence of *na* with the complementizer *pou* in relative clauses (with an indefinite head, embedded under an intensional V), as in (8) below (on the properties and development of *pou* see section 3.4 below):

(8) Thelo ena spiti [*pou* *na* (*min*) exi kipo].
want-1sg a house that prt (not) have-3sg garden
'I want a house that has (doesn't have) a garden.'

If *na* is in the highest C, then the question is what position *pou* occupies in the structure in (7). Roussou (2000), based on further evidence from the distribution of topics and foci, argues that the Force head of Rizzi (1997) splits into two heads: the clause-typing one (as identified above), which is essentially an Operator (Op) head (after Manzini & Savoia 1999), and an even higher C head that has the properties of a subordinator (in the sense that it functions as a clause-linking element).[2] The Op position here stands for the head where the properties of propositional operators are represented. The revised structure is given in (9):

1. Notice that in the absence of *na*, as in (3b), negation can raise to C and lexicalize clause-typing features as well (cf. also Manzini & Savoia 1999 on negation in the Albanian dialect of Arbëresh). In this respect it differs from negator *dhen*. This is further supported by the fact that *min* occurs in prohibitions of the following type: *mi!* (= don't), while this is not possible with *dhen* (on the distribution and readings of *mi(n)* in MG see Janda & Joseph 1999).
2. There are various proposals regarding the elaboration of the C structure. For more recent proposals see Bennis (2000), Rizzi (2001), Haegeman (2002), among others. For MG see also Alexiadou (1997).

(9) [$_{CP}$ *pou* [$_{OpP}$ *na* [$_{NegP}$ *min* [$_{MP}$ t_{min} [$_{TP}$ T . . .]]]]]

The structure in (9) has three C heads, each of them bearing a distinct feature specification, which can be lexicalized in different ways by different lexical items. The schema in (9) accommodates the fact that *na* can co-occur with a complementizer, provided the latter lexicalizes features associated with the highest C head, that is, it is a subordinator. Other elements with which *na* forms a complex are: *jia* (for) in purpose clauses, and *xoris* (without). In terms of the present discussion, we will assume that these are also in the highest C.

Before we consider the history of *na*, it is worth clarifying the development of *tha* in the context of the structure given in (9). In the previous chapter, we discussed *tha* and argued that it occupies a functional head high up in the clause structure. In this chapter we identified this position as a head in the C domain, namely M. What we observe, then, is that the reanalysis of *thelo* to *tha* involves two steps: first, as an auxiliary in the I domain, and next as a particle in the C domain. The first step of grammaticalization involves reanalysis from lexical to functional, the second from functional to functional. Both steps are consistent with our claim that grammaticalization is upwards.

Bearing the above analysis in mind, we can next turn to the development of *na*. Notice that according to the structure in (7), *na* is a C element, which can realize two positions in the left periphery (M and the Operator heads). If *hina*, the ancestor of *na*, was a C element, then reanalysis of *hina* to *na* did not involve a change in categorial status. The question is in what sense the development of *na* can be taken as an instance of grammaticalization.

3.1.2 The development of ***na***

The standard assumption is that the particle *na* developed out of the complementizer *hina* > *ina*, which in CG introduced purpose clauses, as the examples below illustrate (from Goodwin 1894:290–292):

(10) a. Eipo: ti de:ta kall', hina orgise:i pleon? (S. OT 364)
say-1sg what indeed more, that be-angry-3sg more
'Shall I speak still further, so that you may be more angry?'
b. . . . hina e:san me:den hoi deinoi logoi. (E.frag. 442)
that were nothing the eloquence words
'. . . so that words of eloquence might be as nothing'.

The verb in the *hina*-clause could be in the subjunctive, as in (10a), or the optative (also called the 'secondary' subjunctive) in case the matrix T were +past. Past tense indicative was also possible, as in (10b), but in this case the *hina*-clause expressed a purpose that depended on some unfulfilled condition,

that is, it yielded a counterfactual interpretation. According to Liddell and Scott (1968:830) *hina* was also used as a place (or circumstantial) adverb, as in (11):

(11) a. ouk hora:is hina ei kakou
not see-2sg in-what are calamity
'You don't/can't see in what a calamity you are.'
b. hina ge:s
what land
'whatever land/wherever'

In (11) *hina* translates as a relative pronoun. On the basis of (10) and (11) we could say that *hina* was used both as a complementizer and a pronominal, that is, a D element. This is quite reminiscent of the English *that* which is ambiguous between a complementizer and a demonstrative element. As we will see in section 3.4, at a more abstract level these two uses of *that* could be unified. Regarding *hina*, we will have to assume that at some point in its history it lost the ability to function as D, remaining as a C element only. It is hard to say when this happened, and it is not strictly relevant to our present discussion given that we will focus on the development of the complementizer *hina* to the modal particle *na*.

Purpose in CG could also be expressed by an infinitive, as in (12) (from Joseph 1983:40):

(12) deka to:n neo:n proupempsan es ton megan limena *pleusai*. (Thuc. 6.50)
ten of-the ships sent-ahead-3pl in the great harbour sail-inf
'they sent ahead ten of the ships to sail into the great harbour'

So to some extent the distribution of *hina*-clauses and infinitivals overlapped, at least with respect to purposives. On the other hand, while *hina*-clauses were mainly adjuncts, infinitives were the main expression of complementation in CG, a picture which changed dramatically in the *Koine* (third century BC – fourth century AD), leading progressively to the system of finite complementation of MG. The restructuring of the complementation system from non-finite to finite in the history of Greek is to a great extent due to certain morphophonological changes as well as to the weakening of the infinitive which acquired a more nominal status (cf. Joseph 1990). Some of these changes were already introduced in the previous chapter (section 2.3) with respect to the formation of the future.

The first relevant change involves the loss of morphological mood. CG, as opposed to MG, distinguished between four morphological moods (as well as having infinitives and participles, the so-called non-finite moods): the indicative,

the subjunctive, the optative and the imperative (cf. Goodwin 1897).[3] A number of phonological changes (e.g. loss of the distinction between long and short vowels, restructuring of diphthongs to monophthongs) that took place in Post-Classical Greek (Hellenistic period onwards) affected verbal morphology: for example, the future indicative and the aorist subjunctive became almost homophonous (cf. Chapter 2, section 2.3); the present indicative and the subjunctive paradigms were also affected in the same way, thus becoming almost homophonous (cf. Browning 1983, Chapter 2 for references).[4] Although the morphological distinction between the indicative and the subjunctive was lost in the present tense, it remained in the aorist, given that the two moods were distinguished formally by a different set of agreement affixes. Syntactically, the two moods were distinguished through the choice of different negators (*ou* for the indicative, *me:* > *mi(n)* for the subjunctive). Another important change involved the loss of the optative, which was in any case mainly found in embedded contexts in CG, and was mainly replaced by the subjunctive. Following this change, *hina*-clauses in the period of the *Koine* were primarily associated with the subjunctive. It is this distribution of *hina*+subjunctive that formed the background to the reanalysis of *hina* as the subjunctive (i.e. modal) particle. Apart from the changes in the mood system, the other crucial change involved the replacement of infinitivals by a finite clause in complement position as already mentioned. This change is viewed as 'gradual' in the sense that the infinitive (or what was originally an infinitive) persisted in a few constructions until the medieval period, as shown in the previous chapter with respect

3. MG has a binary system of morphological mood: indicative vs. imperative. In this respect, any form following *na* is characterized as indicative (cf. Lightfoot 1979, Tsangalidis 2002). Any subjunctive meaning is derived by the combination of the tense/aspectual properties of V along with *na*. The lack of morphological subjunctive in MG is not an uncontroversial issue. One view endorsed by various traditional grammars is that at least the −past, +perfect forms of V (the 'dependent' forms) are morphologically characterized as subjunctive (while −past, −perfect can be ambiguously taken as indicative or subjunctive). However, this account is based on historical reasons, namely the fact that these forms derive from the CG aorist subjunctive (see Tsangalidis 2002 for a review and a discussion of this issue). Tsangalidis and Valetopoulos (1999) show that the reanalysis in the verbal system along the tense/aspectual dimensions was already in place by the eleventh century (Byzantine Greek).
4. The relevant paradigms for the present tense are given below:

   (i) *Indicative*: grapho: – grapheis – graphei – graphomen – graphete – graphousi
   Subjunctive: grapho: – graphe:is – graphe:i – grapho:men – graphe:te – grapho:si

   For a discussion of the loss of the optative mood in relation to (as well as independent of) these changes see Browning (1983), Horrocks (1997).

to *thelo*. The importance of this change was that it gave rise to the restructuring of the complementation system of Greek.

There are a number of morphophonological as well as syntactic differences between CG *hina* and its MG descendant *na*. First, *na* is phonologically reduced; second, it involves a stress shift: *hína* > *iná* > *na*. According to Trypanis (1960) this stress shift must have already taken place by the sixth century AD, as the metric properties of Romanos' *Hymns* suggest. Third, while *hina* was mainly used to introduce purpose ('final') clauses, that is adjuncts, as in (10), *na* has a much wider distribution. In particular, *na* is found not only in adjunct purpose clauses (usually reinforced by the preposition *jia* (for)), but also in complement and matrix clauses. The reanalysis of *na* as a modal particle, then, is accompanied by a wider distribution, which allows it to occur not only in embedded, but in root contexts as well. The presence of *na* in complement clauses is rather straightforwardly linked to the 'gradual' retreat of the infinitive discussed in the previous chapter, which was attested in the *Koine* (for the more general change involving purpose and infinitives see Haspelmath 1989). On the other hand, its presence in matrix clauses is more linked to the 'gradual' retreat of the subjunctive, which is now reinforced by *ina*. There are already examples of matrix *ina*-clauses in the *Koine*, as in (13) below (these sentences mainly have an imperative force) (Mandilaras 1973, §589).

(13) e: de gune: *ina* fove:tai ton andra.
the prt woman prt be-afraid-3sg the man
'The woman should be afraid of the man.' (Eph. 5:33, New Testament)

As noted by Mandilaras, during this period matrix *ina*-clauses almost freely alternate with the morphological subjunctive. Notice crucially that the *na*-option is the only possible one in MG given that the latter has no morphological subjunctive.

Philippaki-Warburton and Spyropoulos (2000) argue that the use of *ina* in matrix clauses points towards the beginning of its grammaticalization as a mood marker. In other words, *ina* is no longer a conjunction. This is further supported by the fact that *ina* can also be associated with deontic modality, as shown in (13). Bybee *et al*. (1994:224) argue that the matrix use of *ina* > *na* developed out of its use in embedded clauses, and in particular through its association with predicates that carry a modal reading, such as *want, order*, etc. Although this is probably true, it is worth pointing out that *hina*, even in its original meaning as a purpose conjunction, must have been associated with some sort of modality. More precisely, in a sentence like the following from MG there is an implicit modal reading:

(14) Irtha [(jia) na se dho].
came-1sg for prt you see-1sg
'I came to see you.'

The purpose clause *jia na* in (14) indicates intentionality on the part of the matrix subject (*I came with the intention to see you*), which in this case happens to be the speaker as well. At the same time purposives denote unrealized events, so in this respect they can be associated with irrealis mood. The same holds for the purpose *to*-infinitive in English (cf. section 3.3). In other words, modality is an intrinsic property of purposives. Moreover, if this property is encoded on C, as the head of the clause, then in the Greek data under consideration it must have become associated with *(h)ina*. On this basis we can capture the fact that *hina* was a good candidate for introducing complement clauses after verbs with (implicit) modal readings, such as *want, order*, etc. (cf. the discussion in Chapter 2, section 2.3).

On the syntactic side, the question that needs to be addressed is how the change in the distribution and the properties of *ina* > *na* discussed above can be formally represented. Philippaki-Warburton and Spyropoulos (2000) argue that the structural change that took place can be summarized as follows:

(15) a. $[_{CP}$ *ina* $[_{IP}$ $I_{[Mood/Tense]}$ $[_{VP}$ V]]] >
b. $[_{CP}$ *ina* $[_{MP}$ M $[_{IP}$ I $[_{VP}$ V]]]] >
c. $[_{CP}$ C $[_{MP}$ *ina* $[_{IP}$ I $[_{VP}$ V]]]]

The structure in (15a) corresponds to the CG period: Mood and Tense are fused into a single head. So according to their analysis, Mood features are morphologically licensed, so they do not project syntactically. The structure in (15b) is an intermediate stage, following the loss of the morphological distinction between the indicative and the subjunctive, which are nevertheless formally distinguished as they occur in different contexts and take different negators. At this stage, the Mood features cannot be licensed morphologically, but only syntactically. This gives rise to the projection of an independent M(ood) head in (15b), which at this stage is occupied by a zero morpheme, while *ina* is still in C. The structure (15c) represents the reanalysis of *ina* as a Mood head. According to their analysis, the restructuring of this system in the *Koine* gave rise to further changes, such as the association of the imperative with the M position as well (but see Rivero & Terzi 1995 for an alternative approach). Moreover, the phonological reduction of *ina* > *na* gave rise to the formation of a single phonological and syntactic unit consisting of the particle and the verb.

For Philippaki-Warburton and Spyropoulos (2000) the relevant changes are as follows: (a) deflection (loss of morphological mood distinctions),

(b) grammaticalization (from complementizer to mood particle), (c) phonological reduction (*ina* > *na*). The deflection was completed during the first two centuries of the *Koine*, thus allowing for the projection of a MoodP, which in turn allowed for the reanalysis of *ina* to a subjunctive particle (change (b)). In their analysis the grammaticalization of *na* is not a distinct process but the reflex of the emergence of a functional category (Mood) in the clause structure. The projection of M in the syntax triggers further changes in the verbal system, which we will not discuss here (but see Philippaki-Warburton & Spyropoulos 2000 for an interesting discussion).

Although the schema in (15) formally expresses the relevant changes regarding *na*, it relies on a number of assumptions that are not directly compatible with our approach to clause structure and grammaticalization. In particular, the idea underlying (15a) and the change represented in (15b) is that features associated with functional heads do not project universally; instead their projection depends on their morphological properties (cf. Thráinsson 1996). This approach is also reminiscent of the one put forward by Giorgi and Pianesi (1997), according to which features associated with functional heads may 'pack' and 'unpack'. The idea we have been following here, on the other hand, is closer to the analysis proposed by Cinque (1999), namely that functional heads project universally, following a fixed order. The second problem presented by (15) is that the grammaticalization of *ina* to a subjunctive particle is associated with downward movement, that is, C > Mood. In our discussion of English modals, and the Romance and Greek future we argued that the path of grammaticalization can be taken to correspond to that of movement, and given that movement is always upwards, categorial reanalysis also has to be upwards. Loss of movement in a downward fashion is of course possible, as in the case of the loss of V-to-I movement in the history of English, but this is not an instance of grammaticalization. This is further supported by the fact that the loss of V-to-I movement affects a whole class of items (main verbs in this case), and is not restricted to a small number of lexical items. In other words, it does not result in categorial reanalysis.

Notice that the structure in (15c) is based on Philippaki-Warburton's (1992, 1998) account of *na* as a Mood head, which is distinct from *tha* as well as from *oti*. Moreover, MP in her analysis is situated below C and above NegP (which is presumably part of the I system) (cf. (5c)). On the other hand, we have assumed that MG *na* shares features with both of these items. In terms of the structure assumed here (cf. (9)), *na* realizes features associated with Op and M (the latter in the absence of negation). Both Op and M are in the C system, and therefore above the I domain. In other words, MG *na* is in the C system. If *hina* was

also in the C system, given that it introduced embedded clauses (purposives first and then complements), then there is no categorial reanalysis: *hina* and its descendant *na* are C heads. If this is correct, then why is the development of *na* considered an instance of grammaticalization? Is it only restricted to phonological reduction and some sort of semantic 'bleaching', or does it also have a structural correlate?

Notice that the development of *na* as the subjunctive particle is related to the loss of the subjunctive morphology, as correctly noted by Philippaki-Warburton and Spyropoulos (2000). In their system, this leads to the emergence of a functional category, namely Mood, and the 'lowering' of *hina* to that position from C. On the other hand, in our system, M (Mood/Modality) is present and is in the C system in any case. As also noted above, the distinction between indicative and subjunctive mood was reflected in the agreement system. In other words, there was no distinct 'mood' affix. Instead, there were two series of agreement affixes, one for the indicative, the other for the subjunctive, and the basic distinction involved a short versus a long vowel respectively in all persons (with the exception of first singular, which was homophonous for both moods, see note 4). What changed upon the loss of the morphological distinction was the position where 'mood' features were spelled out. Mood in CG is associated with verbal inflection, and more precisely with agreement; so we could say that mood features are realized in the I system. From the period of the *Koine* onwards the realization of Mood is almost exclusively associated with some head in the C system. In other words, we have the following change:

(16) $[_{C/M}\ [_{T}\ V{+}affix_{indicative/subjunctive}]] > [_{C/M}\ ina{>}na_{subjunctive}\ [_{T}\ V{+}affix]]$

As (16) shows, the mood features are now lexicalized in a higher head, namely *na*. Moreover, 'subjunctive' mood becomes associated with a specialized morpheme. In this respect the change is upwards: features previously associated with a lower head in the I domain now become part of a lexical item in a higher head in the C domain. We can thus maintain that the development of *na* is an instance of grammaticalization, without assuming that *na* itself has lowered. The grammaticalization of mood (subjunctive) features in C goes along with other changes that have affected the phonological and semantic content of the lexical item that realizes these features, namely purposive *ina* to modal (subjunctive) marker *na*. This way we maintain our basic claim that grammaticalization is upwards. Crucially in this case there is no loss of movement involved. It is perhaps not an accident that this kind of reanalysis is from functional to functional, whereas in the auxiliary cases discussed in the previous chapter the crucial step in the reanalysis is from lexical to functional.

It is important to note that the properties of *na* in MG cannot be seen independently of those of *tha* (as well as the hortative particle *as*). As shown in the previous chapter, the grammaticalization of *tha* takes the presence of *na* as a prerequisite. While synchronically the two particles share a modal feature, they further differ in that *na*, unlike *tha*, also has a clause-typing (Op) feature.

At this point it may seem natural to ask which of these two features (M, Op) was inherent to the CG *hina*, and which one was acquired by *na*. To be more precise the question is whether *hina* in CG was in the lower C head, namely M, from where it moved to Op, or whether it was in Op originally from where it attracted the features of M, upon becoming a modal particle. The two alternatives are given below:

(17) a. $[_{CP/OpP}$ C/Op $[_{MP}$ *hina* $[_{TP} \ldots > [_{CP/OpP}$ *oti/na* $[_{MP}$ t_{na} $[_{TP} \ldots$
b. $[_{CP/OpP}$ *hina* $[_{MP}$ M $[_{TP} \ldots > [_{CP/OpP}$ *oti/na* $[_{MP}$ t_{na} $[_{TP} \ldots$

The output in (17a) and (17b) is the same, while the input differs. Deciding between the two representations in (17) is not an easy task, as it would require a detailed analysis of the complementizer system in CG, which is beyond our present scope. Nevertheless, we could perhaps speculate that *hina* in CG was in M (and perhaps raised to Op as well), by considering its interaction with modal particles. Notice that complementizer *hina* could not co-occur with the modal particle *an* (the marker of potentiality; this *an* is not historically related to the MG *an* (if) which derives from the complementizer *ean* (if) > *an*). This must have been an idiosyncratic property of *hina* and not of purposives in general, as the other typical purposive conjunction, namely *opo:s* could be followed by *an* (cf. Mandilaras 1973, §576, §591). It may be reasonable to assume that *an* occupied the lower C head (M) (based also on its interaction with other particles/conjunctions, cf. Arad & Roussou 1997). If this is correct, then we can account for the complementary distribution between *hina* and *an*, on the basis that they both realized the same position, that is, M.[5]

A second piece of evidence comes from later texts where we find *na* co-occurring with *oti*, as shown in the following example cited in Horrocks (1997:278):

(18) k' elpizo sto eleos tou Theou *oti* *na* eftixisis
and hope-1sg in-the mercy the God that prt succeed-2sg
'and by the mercy of God, I hope that you will succeed.' (Chronicle of Morea, 1389, early 14th century)

5. According to Liddell & Scott (1968:830) only adverbial (pronominal) *hina* can be followed by *an*, final *hina* cannot. This could be accounted for on the basis that *hina* in the former case was a D(P) element which occurred in a higher position (presumably a specifier) in the C domain. In other words, the distinction between C and D can account for this difference in their distribution.

In this example *na* is preceded by *oti*. Moreover, the *na*+V construction yields an irrealis ('future') interpretation. At this period, subjunctive is already grammaticalized in the C system in the form of *na*. What is relevant is the fact that *na* and *oti* are not in complementary distribution, unlike the current situation in MG.

On the basis of the above evidence, we could assume that *hina* and its medieval descendant *na* were in M, in the sense that *hina/na* was primarily specified for the features associated with M, and perhaps raised to Op. The presence of *oti* in examples like the one in (18) blocked raising of *na*, which was then restricted to M. The innovation would be that *na* came into competition with *oti* (presumably through its widespread use in complement clauses).[6] This competition led to the complementary distribution attested in MG. Recall also that in MG *na* is directly merged in Op, that is, it does not spell out M, when negation *min* is present. As argued above, *min* is the element that spells out not only Neg but M as well, thus restricting *na* to Op. What we find in MG is a kind of an intermediate situation where *na* can be either directly merged in Op or raised to that position, depending on whether negation is present or not. In other words, regarding the realization of Op by *na* we have a system where both Merge and Move are possible. Whether the change will lead from Move/Merge to Merge only is very hard, if not impossible, to predict, and in fact not relevant. The availability of both Merge and Move for the same lexical item for the same feature in the grammar of MG is syntactically determined, depending on whether negation is present or not.

To conclude the discussion so far: in this section we have presented an account of *na* in MG, setting the record of its development from the complementizer *hina*. The suggested structure of the left periphery will also be used as the background in the following sections where we discuss *mu* and *to*. We have shown that reanalysis of *na* does not involve any obvious changes in categorial status (unlike those cases discussed in Chapter 2). At the same time it can still be taken as an instance of grammaticalization to the extent that features which were previously associated with a lower functional head (I) have now become part of a lexical item in the C system.

6. Alternatively, one could say that *hina* originally occurred in Op (or even in the highest C). The availability of *oti na* sequences would in this case have to be attributed to *oti* occurring in the highest C (subordinator) during this period. In other words, the earlier structure would be as in (i) below:

   (i) $[_{C}$ *oti* $[_{Op}$ *na* $[_{M}$ $[_{T}$ . . . .]]]] > $[_{C}$ $[_{Op}$ *oti/na* $[_{M}$ t_{na} $[_{T}$ . . .]]]]

   In the absence of any conclusive empirical evidence it is hard to decide between the two alternatives.

3.2 From adverb to particle: Southern Italian **mu**

3.2.1 The properties of ***mu***

In this section, we analyse the development of the *mu* complementizer found in Southern Calabrian and North-East Sicilian dialects of Italian. As we will see, *mu* shares many properties with Greek *na*, and this has been attributed to a Greek substrate (see Rohlfs 1969:104f. and the references given there; for a different view, see Ledgeway 1998 and Trumper 1997:354–355). The process of grammaticalization, even if triggered by contact with Greek, must nevertheless have been slightly different from the grammaticalization of *hina* to *na* discussed in the previous section, if the hypothesis presented below regarding the origin of *mu* is correct.

Before looking at *mu* itself, two general observations regarding complementation patterns in Southern Italian dialects must be made. First, in an area 'from Sicily up to Abruzzo' (Rohlfs 1969:190), there is a double series of complementizers where Standard Italian and other Romance varieties (except Rumanian) only have one. The first, *ca* (< Latin *quia*, the neuter plural of *quis* (Ernout & Thomas 1953:155)), is found in the complements to verbs of saying, thinking, etc.; Ledgeway (1998:20), following Calabrese (1993), points out that the tense of such complements is free, that is, independent of the temporal reference of the main clause. The second, *che* (in various forms in different dialects), introduces clauses with an anaphoric temporal interpretation and an unrealized reading in relation to the superordinate clause. These correspond to infinitives in Standard Italian and most other Romance varieties. The two complementizers are illustrated in (19) (from Rohlfs 1969:190):

(19)			
	Standard Italian:	penso **che** verrà	voglio **che** lui mangi
	Sicilian:	pensu **ca** vèni	vògghiu **chi** mmanciassi
	Sicilian of Messina:	critu **ca** vèni	ògghiu **mi** vèni
	S. Calabria:	pensu **ca** vèni	vogghiu **mu/mi** mangia
	N. Calabria:	criju **ca** vèni	vuogliu **chi** mmangia
	Salento:	crisciu **ca** vène	ogghiu **cu** mmancia
	Naples:	pènsə **ca** vènə	vògliə **chə** mmangə
	N. Puglia:	pènsə **ca** vènə	vògghiə **chə** mmangə
	Abruzzo:	pènsə **ca** venə	vòjjə **che** mmangə
		'I think he'll come'	'I want that he come/eat'

The second point is that, in approximately the same area, infinitives are highly restricted in distribution, occurring only in complements to obligatory restructuring verbs and here with obligatory control, and in these varieties, obligatory

clitic-climbing:

(20) a. ‘o vulimmo vedé
him want-1pl to-see
‘We want to see him.’
b. ‘o jamm’ a chiamma
him go-1pl to call
‘We’re going to call him.’ (Neapolitan; Ledgeway 2000:83)

Ledgeway (2000:82f.) analyses such examples as monoclausal; this is consistent with Wurmbrand’s (1998) general characterization of ‘restructuring infinitives’ cross-linguistically.

However, in Southern Calabria (south of the Nicastro-Catanzaro-Crotone line), an area of North-East Sicily around Messina and in Salento south of the Taranto-Ostuni line, infinitives are rare, although not impossible, in all contexts (Rohlfs 1969:102–106); in Salentino *ku*, in Calabria *mu*, in North-East Sicily *mi* and in Catanzaro *ma* are available in place of infinitives in all contexts (cf. also Manzini & Savoia, forthcoming, for a detailed account of these dialects, and Calabrese 1993, Damonte 2002 on Salentino *ku*). (We follow Rohlfs 1969, §789:192–193 in treating *mi* and *ma* as analogical developments on the basis of *chi* and *ca*.) This is the fundamental parallel with Modern Greek (and other Balkan languages), which may support the postulation of substrate influence. The *mu/mi/ma* alternations are phonologically determined and, as noted above, are subject to dialectal variation. Below we simply list the main features of *mu* (and its variants). The very clear similarity with Modern Greek *na*, as described in the previous section, can be easily observed.

First, *mu* appears in all contexts where Standard Italian has an infinitive, as already mentioned (Rohlfs 1969:104) (we gloss *mu/mi* as ‘prt’ for particle in order to be consistent with the glossing given for *tha/na*):

(21) a. *Causative complement*:
Dassati *mu* li cuntu.
Let-2pl prt them count-1sg
‘Let me count them.’
b. *Complement to ‘want’*:
iddu vulía *mi* vegnu
he wanted prt come-1sg
‘He wanted me to come.’
c. *Complement to impersonal*:
basta *mi* vaju
is-enough prt go-1sg
‘It suffices for me to go.’

d. *Complement to object-control verb*:
ti dissi *mu* vèni
you said-1sg prt come-2sg
'I told you to come.'

e. *Complement to noun*:
Non appi coraggiu *mi* l'ammazza.
not have-2sg courage prt him kill
'You don't have the courage to kill him.'

f. *Complement to adjective*:
Era buona *mi* nci lu trova.
was good prt there him finds.
'It was good to find him there.'

g. *Complement to temporal preposition*:
Prima *mi* mangiati dassatimi diri ammenu tri paroli.
Before prt eat-2pl let-me say-1sg at-least three words
'Before you eat let me say at least three words.'

The ability of a *mu*-clause to appear wherever an infinitive appears in Standard Italian implies that these clauses are able to appear in subject-control contexts. In other words, in these varieties there is no disjoint reference requirement holding between the matrix subject and the subject of a complement subjunctive clause (compare Standard Italian **voglio che io mangi*; French **je veux que je mange*, both 'I want that I eat', etc.). This property is unique to the *mu*-dialects and to *ku*-clauses in Salentino (Calabrese 1993, Damonte 2002) (although a well-known property of Greek *na*-clauses, and of Balkan languages in general; see Farkas 1992, Terzi 1992, Dobrovie-Sorin 2001, Krapova 2001, Roussou 2001):

(22) a. volimu *mu* mangiamu
want-1pl prt eat-1pl
'We want to eat.'

b. voliti *mi* veniti?
want-2pl prt come-2sg
'Do you(pl) want to come?'

c. volèra *ma* fazzu
would-like-1sg prt do-1sg
'I would like to do (it).'

d. non sapi *'u* scrivi
not know-3sg prt write-3sg
'S/he doesn't know how to write.'

Second, *mu* is able to form a kind of compound with *chi, per* (for) and *non*:

(23) a. Stativi attenti *nommu* caditi.
Be-2sg careful not-prt fall-2sg
'Be careful not to fall.'

b. Vònnu *pemmi* vindu
want-3pl for-prt sell-1sg
'They want me to sell.'
c. *Chimmu* ti viu riccu contentu.
that-prt you see-1sg rich happy
'May I see you rich and happy.'
d. *Chinnommu* cadi mai malatu!
that-not-prt fall-3sg ever ill
'May s/he never fall ill.'

Significantly, the order is *chi/per* > *non* > *mu*, as these examples illustrate. Here we observe a difference with *na*, which precedes the non-finite negator *min* (see (3b) above), and which is in complementary distribution with *oti* (which is basically equivalent to *chi* in these varieties). Recall that the Greek facts were captured by positing M-to-Op raising (cf. (7b)); so we can simply observe that this raising option in not found in Calabrian.

Third, *mu* follows the interrogative complementizer *si*, as examples like the following (from Ledgeway 1998:30) show:

(24) non sacciu *si mma* vegnu o menu
not know-1sg if prt come-1sg or not
'I don't know whether I should come or not.'

This is a further difference from Modern Greek, where *an* (if) is in complementary distribution with *na*.

Fourth, *mu* consistently follows an overt preverbal subject (since these are null-subject varieties, subjects are allowed not to appear overtly and may appear in the postverbal 'free-inversion' position) (see Ledgeway 1998:24):

(25) a. vogghiu lu diavulu *mu* ti mangia.
want-1sg the devil prt you eat-3sg
'I want the devil to eat you!'
b. *vogghiu *mu* lu diavulu ti mangia.
want-1sg prt the devil you eat-3sg
c. ma jeu *nommu* mi tradu rispundìa
but I not-prt me betray replied-1sg
'but so that I would not betray myself' (Polistena; Scappatura 1992:137, cited in Ledgeway 1998:24)

According to Lombardi (1997:213–214), Rohlfs (1969:193) and Sorrento (1951:370), only pronominal clitics can appear between *mu* and the

verb, *mu* being phonologically part of the clitic cluster.[7] This is shown in (26):

(26) a. Ave ‘a possibilità, doppu tuttu, *mi* staci a la casa
has the possibility after all prt stay-3sg at the house
‘He can, after all, stay at home.’
b. *Ave ‘a possibilità *mi*, doppu tuttu, staci a la casa
has the possibility prt after all stay-3sg at the house
(Lombardi’s (55a), p. 213)

Fifth, the complement verb is always and only present indicative; there is no sequence-of-tense rule (Sorrento 1951:387, Ledgeway 1998:34):

(27) a. passai senza mi ti viju
passed-2sg without prt you see-1sg
‘You passed without me seeing you.’
b. Volia pe *mi* si spusa.
wanted-3sg for prt self marry-3sg
‘S/he wanted to get married.’
c. Non facìa autru ca *mi* ciangi.
not did-3sg other than prt cry-3sg
‘S/he did nothing but cry.’

A relevant point in this context is that the present subjunctive is absent in most Southern Italian varieties (Rohlfs 1969:61–62), and the imperfect subjunctive is apparently absent in the *mu/mi* varieties. In other words, we see that *mu*-clauses pattern like their *na*-counterparts in MG with respect to this property as well (i.e. absence of morphological subjunctive).

Sixth, where the selecting predicate is semantically compatible with both an epistemic and an unrealized meaning, the choice of *mi* versus *ca* clearly illustrates that *mi* carries the irrealis feature (see also the examples in (4) from MG):

(28) a. Dinnu a Maria *mi* si ndi vaci.
Tell-3pl to Maria prt self of-it go
‘They tell Maria to leave.’

7. Adam Ledgeway (personal communication) informs us that this is not true in the dialect of Saveria-Manelli (province of Catanzaro), as shown by the following, where the subject *‘u nidu* intervenes between *mu* and the proclitic + finite verb *se rende*:

(i) è magliu mu ‘u nidu se rende cchiù comitu
it-is better MU the nest self make more comfortable
‘It’s better for the nest to be made more comfortable.’

This variety is transitional between Northern and Southern Calabria, and so here it seems that *mu* appears with the syntax of *che*.

b. Dinnu a Maria *ca* si ndi vannu.
Tell-3pl to Mary that self of-it go.
'They tell Maria that they are leaving.'

The distributional features of *mu* just illustrated, and its dual nature as a complementizer and an irrealis particle, can be captured in terms of the kind of structure put forward for Modern Greek *na*-clauses in (9) above:

(29) $[_{CP}\ [_{OpP}$ *chi/pe* $[_{NegP}$ *no* $[_{MP}$ *mu/mi* $[_{TP} \ldots]]]]]$

Here *mu/mi* marks M as irrealis, that is, it spells out the irrealis feature associated with M, in a way similar to *na* (and *tha*) in MG. While *na* in the absence of negation always raises to Op, *mu* is slightly different, as it can only raise to Op provided no other element is present in that position. In other words, *mu* is not in competition with *chi/si*, while *na* is in competition with *oti/an*. What the two particles have in common is the fact that they spell out M. In the relevant Italian dialects this is done exclusively by *mu/mi*, whereas in MG it could be done by negator *min* as well in which case *na* is directly merged in Op.

We assume that preverbal subjects occupy a topic position higher than MP (recall that MP corresponds to Rizzi's (1997) FinP, and that Rizzi places TopP higher than FinP). A well-known property of null-subject languages is that preverbal subjects do not occur in the canonical subject position (SpecTP), but are topics (cf. Philippaki-Warburton 1987, Alexiadou & Anagnostopoulou 1998 for MG; Manzini & Savoia 2002 for Italian, among others). Like MG *na, mu* appears to mediate both temporal anaphora and control relations between the higher and the lower clause (the two elements are alike in blocking clitic-climbing, presumably because the clauses containing them are formally finite). More precisely, these elements morphophonologically instantiate the features which are responsible for such relations, among them the irrealis feature; in other types of systems infinitival or subjunctive verbal inflection marks such features (cf. the close comparison between *mu*-clauses and the Old Neapolitan inflected infinitive in Ledgeway 1998:41ff., to which we briefly return below).

3.2.2 The development of ***mu***

According to Sorrento (1951:394), *mu* is the regular unstressed form of *mo*, which derives from the Classical Latin adverb *modo* ('as long as', 'just', 'only', 'in this way') in Calabrian. This adverb, which in turn derives from the ablative of *modus* ('manner', 'way'), had various modal uses in Latin, where it co-occurs with the subjunctive, as in the following cases:

(30) a. Haec studia non improbo, modo moderata sint. (Cicero)
these studies not disapprove-1sg modo limited are (subjunc)
'I do not disapprove of these studies, as long as they are limited.'
b. dum illum modo habeam mecum
while him modo have-1sg(subjunc) me-with
'as long as I have him with me' (Ernout & Thomas 1953:391)
c. modo ut sciam
modo that know-1sg(subjunc)
'if only I knew' (Plautus)
d. modo ut tacere possis
modo that be-silent could-2sg(subjunc)
'if only you could be silent' (Terence, *Phorm*. 59)
e. vos modo, inquit, partite
you modo, said-3sg, leave
'You now, he said, leave.'
f. veniat modo
come-3sg modo
'May he come/let him come now'

In (30a, b), *modo* combines with the subjunctive to express the non-factive interpretation associated with the sense of 'as long as'. In (30c, d), in combination with *ut*, the interpretation of the clause introduced by *modo* is counterfactual, as the translation indicates. In (30e), it appears to act as a discourse particle associated with the imperative. In (30f), it has a similar interpretation in association with an optative subjunctive.

We can see from these examples that it is in combination with *ut* that *modo* most clearly has a modal interpretation, which anticipates the present-day Calabrian *mu* as analysed in the previous section. On this point, Sorrento (1951:389) comments as follows: '*Modo*, then, when it was combined with *ut*, reinforced this conjunction and was often found in the position or function of the conjunction' (IGR's translation).

If we take *modo* to be an AdvP, and *ut* to occupy the Mood position, taking TP as its complement (this is in fact the lowest possible position for Latin *ut*), then we plausibly have the following structure as regards these elements of the Latin C system:

(31) $[_{CP}$ *modo* C $[_{NegP}$ $[_{MP}$ *ut* $[_{TP} \ldots]]]]$

(Note that NegP might have been occupied by *ne* ('lest') the negative counterpart of *ut*. Such an analysis would imply that *ne* raises from M to Neg, parallel to Modern Greek *min* as analysed in the previous section. It is possible that *modo* was in SpecOpP, but this does not affect our discussion.) Example (31), we

suggest, is the Classical Latin structure that developed into the present-day Calabrian (29). We return to this point below.

The *mu* particle is usually distinguished from the adverb *mo* (now), which is found in Calabrian and elsewhere:

(32) a. mo vieni.
now come(sg)
'now come'
b. vieni mo.
come now
'come now'

This element appears to correspond exactly to the Latin *modo* of (30e). However, it differs from *mu* in two respects: (i) it is a stressed form (hence *mo* rather than *mu*); (ii) it is not obligatorily preverbal, unlike *mu*, as (32b) illustrates.

It is interesting to note that a similar situation is attested in MG. Apart from the modal particle *na*, we also find deictic *na*, which roughly translates as presentational *there*, as in the following examples:

(33) a. Na o Petros/na tos!
there the Peter/there he
'There is Peter/there is he!'
b. Na o Petros erxete!
there the Peter come-3sg
'There is Peter coming.'

Unlike the modal particle, deictic *na* can be stressed, and can occur on its own (*na!* = *there*) (accompanied by the relevant deictic gesture). It is possible that the two *na* in MG have a different historical origin, as it has been argued that deictic *na* originates from the CG deictic expression *e:ni* > *e:n* (cf. Andriotis [1983] 1990 for references regarding this etymology). Synchronically, Joseph (1981, 1994) has analysed deictic *na* as an element akin to a verbal predicate, distinct from the modal particle *na*. On the other hand, Christidis (1985, 1989) argues that even if the two *na* have a different origin (which is nevertheless dubious), synchronically they appear to be semantically related in the sense that both elements are associated with some sort of deixis. According to his analysis, they differ in that modal *na* has an 'endophoric' deixis, while deictic *na* is 'exophoric'. Endophoric means that the object of deixis is the proposition itself, while exophoric means the object of deixis is located in the outside world. If this is correct, then we could argue that there is only one *na* which surfaces as either deictic or modal depending on the complement it takes. It may then be possible to make a similar claim about presentational *mo* versus modal *mu*

(and its variants) in the Italian dialects under consideration. We will come back to this issue when we discuss infinitival *to* in English and its relation to the locative preposition *to*.

Going back to the properties of *modo*, notice that examples in (30c, d) are main-clause optatives in *modo ut*. As such they correspond exactly to Modern Calabrian examples such as the following with *mu/mi/ma* (cf. also the imprecations in (25)):

(34) a. *mi* vèni nuddu
prt come no one
'May/let no one come'
b. *ma* mòra
prt die-3sg
'May s/he die'

Comparing (30c, d) with (34), we can see how *mu* emerged: the AdvP *modo* was reanalysed as M, with corresponding phonological reduction (recall that *mu* must be unstressed) and semantic bleaching, in that *mu*'s present function seems to be as a marker of irrealis M, whereas *modo* had a somewhat richer range of meaning in Latin, as (30) shows. We thus observe the familiar pattern of phonological reduction, syntactic reanalysis and semantic bleaching.

We can illustrate the proposed changes in the C system from Latin to Calabrian as follows:

(35) [$_{CP}$ *modo* C [$_{NegP}$ *(ne)* [$_{MP}$ *ut* [$_{TP}$ . . .> [$_{CP}$ *chi/pe* [$_{NegP}$ *no* [$_{MP}$ *mu/mi* [$_{TP}$ . . .

(35) shows that the parametric property of M may not in fact have changed: in Latin M^*_{Merge} was realized by *ut*, while in Calabrian it is realized by *mu*. Whether there was an intervening parametric change is impossible to tell, given the paucity of records. If Ledgeway (1998:51) is correct in suggesting that the Old Neapolitan inflected infinitive was functionally equivalent to Calabrian *mu*-clauses, then the inflected infinitive may have represented an instance of M^*_{Move} (that is, M is spelled out by movement) given the following correspondence (adapted from Ledgeway *ibid*.; see also Lombardi 1997, Chapter 3):

(36) a. V-root M Agr
canta- re- mo (Old Neapolitan)
b. M V-root Agr
mu canta (Calabrian)

The obvious way to capture the difference shown here is by positing V movement to Agr in Calabrian (and cf. the above discussion of the null-subject

parameter in this variety) and V movement to M in Old Neapolitan. In other words, Old Neapolitan had M^*_{Move} in this construction, while Calabrian has M^*_{Merge}.

Like the other cases of grammaticalization we have seen, the change from AdvP *modo* to M-marker *mu* involves structural simplification, in that the earlier AdvP occupying the Specifier position of a higher head in the C system was reanalysed as M. In this way, the structure after the change is simpler than the earlier structure, as the new structure has one less structural position. We can also observe a similarity with the reanalysis of *hina* as *na* discussed in the previous section: Latin had a highly productive subjunctive mood, which in fact survives in many modern Romance languages, for example Standard Italian, but which was lost in various Southern Italian dialects, including Calabrian. So we can think of the change affecting *mu* along the lines of (16) above: mood features are diachronically transferred from T to M as a consequence of the loss of inflection. In this sense the change is once again an 'upward' one.[8] We are not in a position to say when this change took place in Calabrian owing to the paucity of the data.[9] What is crucial though is that the grammaticalization of *mu* as a modal marker essentially marks the grammaticalization of mood features in the C system.

3.3 The infinitival marker **to** *in English*

3.3.1 The properties of ***to***

In this section we will compare English *to* synchronically and diachronically with *na* and *mu*. We will point out that *to* shares a striking number of properties

8. Of course, it remains the case that *modo* has diachronically lowered. We can avoid this difficulty by saying that *modo* occupied an adjunct position as a modifier of CP, and was thus outside the C system, as in:

   (i) [modo] [$_{CP}$ ut [. . . . .]]

   The structural simplification would then have clearly involved the loss of this adjunction structure with the result that *modo* became associated with a head in the C system.

9. Calabrese (1993) argues that Salentino *ku* developed the characteristic properties that distinguish it from Standard Italian and much of the rest of Romance, which are very similar to those of *mu/mi* discussed above, under the influence of Byzantine Greek in the fifth–eleventh centuries. He suggests that the changes affecting *ku* could not have happened earlier because Salentino shares the main Romance innovations in complementation with all the other Romance languages: the loss of gerunds, supines, *ut, ne* and the accusative + infinitive construction, and the extension of *quod*-clauses as the principal means of finite complementation. The same can be said of Southern Calabrian, suggesting at least that the development of *mu/mi* is a later innovation, although we cannot comment on the role of Byzantine Greek in this case.

with these other particles, and, partly on the basis of these observations, develop an analysis according to which *to* appears in M. We will show how this analysis captures a number of properties of NE *to* (see also Rosenbaum 1967, who calls *to* a complementizer, and Kayne 2000 who also points in this direction; for empirical justification see Lencho 1992 and the discussion that follows). We then go on to show that the diachronic development of *to*, as described in Los (1999), is also similar in many respects to that of *na* and *mu*: mood features are realized (overtly) in a 'higher' position after the change than before; the loss of subjunctive and infinitival morphology plays an important role, and certain adjuncts develop into complements.

It can immediately be observed that NE *to* shares five important properties with *na* and *mu*: (i) it occurs in control infinitives; (ii) it can combine with the higher complementizers *for* (only in non-standard varieties of NE (see Henry 1995 on Belfast English, for example)) and *whether* (see Kayne 1991 for discussion and analysis of why it does not co-occur with *if*); (iii) it appears in main-clause optatives; (iv) it obligatorily follows an overt subject; (v) under the right kind of predicate, it contrasts with *that*-clauses (and gerunds) regarding the entailment as to whether the event referred to by the embedded clause took place. These properties are illustrated in (37):

(37) a. I want to write.
b. i. I came (for) to work.
ii. I don't know whether to go or not.
c. Oh to be in England!
d. i. We believe John to/*to John be the winner.
ii. For John to/*to John be the winner . . .
e. i. John remembered that he had posted the letter.
ii. John remembered posting the letter.
iii. John remembered to post the letter.

These examples should be compared with (22–24), and (28) in the previous section. Note that in (37e, i–ii) the entailment is that the letter has in fact been posted, while in (37e, iii) the entailment is that at the past time denoted by the main clause, the letter had not been posted.

Furthermore, it is possible to maintain that *to*-infinitives are like MG *na*-clauses and Calabrian *mu*-clauses in being able to co-occur with a negation in the C system. This can be seen if we observe first that *to* can apparently appear on either side of clausal *not*, as is well known, and, second, that *not* cannot contract onto *to*:

(38) a. Not to/to not leave would be a shame.
b. *Ton't leave would be a shame.

Third, only contractible negation triggers *do*-support:

(39) a. John *(does) not eat pizza.
b. To (*do) not eat pizza . . .

We can account for these facts by adopting a structure like the following in the relevant respects:

(40) . . not . . [$_{IP}$ . . T . . [. . n't . . [$_{VP}$ . . V . .]]]

As (40) shows, the contractible negation appears subjacent to T; it may optionally raise to T, hosting auxiliary movement from a lower head and possibly moving further with the auxiliary. This negation is also responsible, in virtue of its position in between T and V, for blocking the V-T relation and thus triggering *do*-support (however exactly this may happen). The non-contractible negation, on the other hand, is merged outside the I system in C and so neither raises nor triggers *do*-support. This analysis makes possible a very simple statement of the condition on *not*-contraction, namely that it takes place only where T has phonological content. In this respect, this analysis is superior to more standard ones, which usually state the condition on contraction in terms of finiteness, as it correctly predicts that contraction is impossible in subjunctives:

(41) We require that you *n't/not eat pizza.

Here T is finite, but phonologically empty, and contraction is not possible.

In terms of the analysis of negation just presented, we are led by the impossibility of *not*-contraction onto *to* to postulate that *to* is not in T. Instead, consistent with the observed similarities with *na* and *mu*, we suggest that *to* occupies M. Given that it can precede non-contractible negation, we must assume that it optionally moves from M to a higher C head (or, as in the case of *na*, that it can be directly merged above M, allowing for negation to spell out M).

Lencho (1992) gives two further arguments to analyse *to* as occupying C (or, in our terms, a position in the C system). First, he observes that *to*-clauses and *that*-clauses behave uniformly regarding deletion, suggesting that the deleted category is IP in both cases:

(42) a. TA's wish that they were paid better, and adjuncts wish that [$_{IP}$ e] too.
b. *TA's wish that they were paid better, and adjuncts wish [$_{CP}$ e] too.
c. TA's need to be paid better, and adjuncts need to [$_{IP}$ e] too.
d. *TA's need to be paid better, and adjuncts need [$_{CP}$ e] too.

Second, he points out that *to*-clauses and *that*-clauses behave uniformly regarding movement, suggesting that the moved category is CP in both cases:

(43) a. His kids watching too much TV, John dislikes.
b. *That kids watch too much TV these days, John worries.
c. *(His kids) to watch too much TV these days, John hates.

These observations support our contention that *to* is in M.

In addition to the considerations raised here, Kayne (2000:297ff.) observes two similarities between *to* and Romance *de/di*. First, none of these elements can be selected by a preposition:

(44) a. *Gianni contava su di vincere.
b. *Jean comptait sur de gagner.
c. *John counted on to win.

Second, none of these elements can be small-clause subjects:

(45) a. *Gianni ritiene di vincere possibile.
b. *Jean considère de gagner possible.
c. *John considers to win possible.

Since *de/di* have always been regarded as C elements in Italian and French (see Rizzi 1997 for a recent discussion), this supports the idea that *to* is also in that system (whatever the explanation for the restrictions in (44) and (45) – see Kayne 2000 for a proposal). These observations further support our contention that *to* is in M. In other words, the infinitival marker *to* is not a T element, or to be more precise it is not an auxiliary-like element *pace* Pullum (1982) (for a recent summary of the arguments for the T status of *to* see also Radford 1997, Chapter 2).

There is one major difference between *to* and *na/mu*. Unlike *na* and *mu, to* is able to be separated from the main verb by various elements, including adverbs of various types and negation:

(46) To **deliberately not readily** admit to this difficulty would be wrong.

This difference can be accounted for in terms of an independently observable difference between English on the one hand and MG and Calabrian on the other: main verbs do not raise in English while they do in MG and Calabrian (recall that the last two languages are null-subject languages, in which we assume that the inflected verb always raises to T).[10]

10. By the reasoning in the text, one might expect that auxiliaries appear closer to *to*, as these elements undergo *have/be* raising. This is not true, however, in that *have* and *be* can follow the entire sequence of adverbs and negation in (46):

(i) To **deliberately not readily** have admitted to this difficulty would have been wrong.

But in this connection it should be borne in mind that we can treat the verb form in the *to*-construction as 'subjunctive', in that it is morphologically identical to the subjunctive, being

English, of course, differs from Modern Greek and Calabrian in not being a null-subject language. Subjects clearly must precede *to*, including expletive subjects, which also follow the higher complementizer *for*:

(47) For there to be life on Mars would be quite a discovery.

Example (47) illustrates an EPP effect, which must hold at a level higher than T. In fact, our analysis implies that non-finite T never has an EPP feature. In this we concur with Manzini and Roussou (2000), Castillo, Drury and Grohmann (1999) and Nosu (2002), all of whom argue, based on different assumptions, that there is no SpecTP position in standard cases of raising and control, and therefore the EPP does not apply in these clauses. This conclusion is clearly just as valid for SpecMP as it is for SpecTP. In *for*-clauses and ECM (Exceptional Case Marking) clauses, on the other hand, an EPP effect can be observed in that expletives are obligatory. This is shown by examples like (47) above and (48):

(48) We believe there to be life on Mars.

As (49) shows, adverbs can intervene between *there* and *to*, which implies that there is no EPP effect in SpecMP here either:

(49) a. For there always to be a problem when John is here is a nuisance.
b. We believe there always to be a problem.

We conclude that *to* is in fact like *na* and *mu*, then, in not being associated with an EPP feature. Since English verb-inflection does not satisfy the EPP in T (i.e. English is not a null-subject language), we conclude that there simply is no EPP effect associated with non-finite T or M in English. Alternatively, we could say that the realization of M by a modal particle blocks the realization of the agreement features of T (or of a separate Agr). This looks like a minimality effect, but it still remains to be elaborated how exactly this is achieved (we leave this open in the present context). If the subject cannot be realized in the I domain, that is, there is no EPP associated with T, then an overt subject could appear in a peripheral position. Indeed an overt subject is possible with *to*-clauses, albeit in a position that precedes *to*, as shown in (49). Crucially though the EPP effect observed in (49) must be associated with a higher head: it is induced by the selecting head – *for* or an ECM verb – in a way that remains

just the bare form of the verb. In subjunctive clauses introduced by *that, have/be* raising is not allowed, as is well known. The same idea will account for the complementary distribution of modals and *to*; modals are not allowed in subjunctive clauses introduced by *that* (perhaps because T is filled by an operator – see Culicover 1976), and so, possibly for the same reason, they are not allowed in 'subjunctive' clauses introduced by *to*.

unclear, but which suggests a connection with Case, especially in the light of the fact that complements to passivized ECM verbs do not show this effect, as has been observed since Rosenbaum (1967).[11]

On the other hand, we retain the standard view that finite T has an EPP feature in English, and that subjects of finite clauses are in SpecTP. It follows that we are taking subjects of finite clauses to be in a lower position than the subjects of ECM and *for*-infinitives. As is well known, just this has been argued for ECM contexts by Lasnik and Saito (1991). In fact, Lasnik and Saito show that the subjects in ECM and *for*-complements (as well as other complements to W-verbs, in the sense of Postal 1974) are in different positions, with the former being structurally higher than the latter, on the basis of contrasts like the following (these are Lasnik & Saito's judgements, which are not actually shared by all native speakers, who find the examples below equally bad):

(50) a. ?*I wanted very much for those men to be fired because of each other's statements.
b. ?I believed those men to be unreliable because of each other's statements.

Following Postal (1974), Lasnik and Saito argue that the subject of the ECM infinitive in (50b) is raised out of the infinitive clause. Owing to this raising operation, the subject *those men* in (50b) is able to c-command the anaphor *each other* in the main-clause adjunct. In (50a), on the other hand, the subject remains inside the infinitival clause, and is thus unable to bind *each other* in the adjunct clause. There is nevertheless one piece of evidence that this subject position in *for*-infinitives is higher than the subject position of finite clauses: adverbs of various kinds can intervene between *that* and the subject in a finite clause, but not between *for* and the subject in a *for*-infinitive. This fact is illustrated by the contrasts in (51):

(51) a. *For tomorrow John to leave would be a shame.
b. We said that tomorrow John would leave.

Adjacency conditions on Case-assignment/checking cannot explain this distinction since (a) it is doubtful that such conditions exist and (b) if head government is not part of the theory, *for* cannot be assigning/checking the Case of *John* in

11. The existence of an EPP effect in ACC-*ing* gerunds, shown in (i), suggests that there may be more going on than this:

(i) There being life on Mars surprised us all.

We leave this question open. For an analysis of ACC-*ing* gerunds, see Roussou and Roberts (2001).

(51a). Moreover, the fact that no adverb can appear to the left of *for* with scope over the *for*-clause shows that *for* is not lower than *that* (cf. McCloskey's (1996) Adjunction Prohibition):

(52) a. *[In general for John to know what's going on] is a surprise.
b. *[In general that John knows what's going on] is a surprise.

From the above arguments, we conclude that NE *to* is considerably more similar to Modern Greek *na* and Calabrian *mu* than has usually been thought, in particular in that it occupies M, the lowest position in the C system. In the next section we turn to the history of this element.

*3.3.2 The history of **to**-infinitives*

In this section we analyse the development of the English *to*-infinitive. We will mainly follow the arguments and conclusions in Los' (1999) important and convincing account, but we will observe a number of important parallels with the diachronic development of *na* and *mu* as discussed earlier in this chapter, in particular as regards one aspect of the change.

The standard account of the development of the English *to*-infinitive treats it as having derived from a purpose clause containing a nominalized verb form which was the complement to the preposition *to*. This is proposed by Callaway (1913), Jespersen (1938), Campbell (1959), and, in a generative framework, Lightfoot (1979) and Jarad (1997). The principal evidence for this comes from (i) the etymology of infinitives as nominal forms, (ii) the dative ending *-ne* found on infinitives, (iii) the fact that OE *to*-infinitives are sometimes found conjoined with PPs and (iv) the more 'nominal' properties of ME infinitives as compared to those of NE, in particular their ability to occur in the complement of prepositions. In these terms, the categorial change directly explains the changes in the nature of both *to* (P > I) and the infinitive form (N > V); see in particular Lightfoot (1979) and Jarad (1997).

However, Los (1999, Chapter 11) criticizes the 'nominal' analysis of OE infinitives on several grounds. First, *to* was the only element that occurred with the infinitive, which casts some doubt on the status of this construction as an instance of a standard PP. Second, no other clearly case-marked forms of infinitives other than the etymological dative are found in OE, and these forms appear only where the infinitive is directly adjacent to *to*. Third, she points out that the coordination argument is not conclusive, in that it is clear that unlike categories can be coordinated (cf. *The minister was tired and in an angry mood after the debate*, etc.). Fourth, she shows that *to*-infinitives in fact only started appearing as complements to prepositions in ME.

Most importantly, she shows that *to*-infinitives appear with overwhelming frequency after the finite verb (in embedded clauses, controlling for the effects of V2), while 'bare' infinitives appear in pre- and postverbal position with more or less equal frequency. Similarly, *to*-PPs appear pre- and postverbally with almost equal frequency. These observations show that *to*-infinitives are not equivalent to *to*-PPs, and that *to*-infinitives are not equivalent to bare infinitives. Los observes that, while bare infinitives have a distribution similar to nominal complements, *to*-infinitives behave more like *that*-clauses. For these reasons, it is more plausible to treat OE *to*-infinitives as clauses than as PPs. Her main claim then is that *to*-infinitives were actually in competition with subjunctive *that*-clauses. The increase of *to*-infinitives in ME is due to the decrease of the subjunctive clauses. To some extent this is reminiscent of the situation in Greek and Calabrian: loss of the subjunctive morphology (along with infinitival morphology) led to the development of modal particles, that is, *na* and *mu* respectively.

Nevertheless, Los follows the traditional idea that *to*-clauses developed out of purpose clauses; she simply dates this development as having taken place much earlier (in prehistoric OE or even earlier in Proto-Germanic). She observes that Gothic and OE both allow three different expressions of purpose: with *to* (Gothic *du*) + nominalization, with *to/du* + infinitive and with the subjunctive introduced by OE *þæt* or Gothic *ei* (we will discuss the last-mentioned element more in the next section) (see also the CG data in (10) and (12)). These parallels are illustrated in (53–55) (Gothic examples cited from Köhler 1867:451):

(53) *du/to*+PP:
a. þata waurkjaiþ . . . du meinai gamunai (Gothic)
this do . . . to my remembrance
'do this as a memorial to me' (1 Cor. 11.24–25)
b. Sylle him aþ & ne nyde hine to gylde (OE)
give him oath and neg force him to repayment
'Let him swear an oath and do not force him to repayment'
(Exod. 22.14; in Los 1999:274)

(54) *that*+subjunctive:
a. ei meina gamunaiþ (Gothic)
that me you-remember(subjunc)
'so that you may remember me' (Köhler 1867:451)
b. nyde man hine þæt he hit gylde (OE)
force one him that he it repay
'he should be forced to repay it' (Exod. 22.10, in Los 1999:275)

(55) a. du gamunan meina (Gothic)
to remember me
b. nyd hi inn to farenne (OE)
urge them in to go
'urge them to go in' (Los 1998:5)

On the basis of these parallels, it seems reasonable to posit a common Germanic origin for the OE and Gothic constructions in a purposive adjunct PP, along the lines of the traditional analysis. By the OE period, however, *to*-infinitives were, like *that* + subjunctive clauses, already CPs (cf. Los 1999:257ff.).

Regarding the position of *to* in OE, Los argues that it was a clitic which attached to V (section 7.4.3). In that respect it had a status similar to that of the subjunctive affix and could be licensed only by covert feature checking (with T). This analysis then suffices to explain the strict adjacency between *to* and the verb in OE. Notice though that there is an alternative approach in the light of the proposals we made in this chapter. Recall that nothing can intervene between *na/mu* in M and the verb (unless the intervening element is a clitic). NE *to* differs, as it allows for intervening adverbs, but still shows no EPP effects. The difference between *na/mu* and NE *to* was attributed to the fact that NE, unlike MG and Southern Italian, shows no V movement. The adjacency then between OE *to* and the verb can be accounted for along the lines of *na/mu*+V, allowing us to claim that *to* at this stage was already in M. If we assume that OE infinitives raised to T, and overt subjects were not possible in SpecTP of infinitives, then if *to* appeared in M it would be systematically adjacent to the infinitive.[12] We thus propose the following reanalysis of adjunct purposives to *to* and *that* + subjunctive complements:

(56) VP [$_{PP}$ *to* [$_{DP}$ V + *enne*]] > [$_{VP}$ V [$_{CP}$ [$_{MP}$ *to* [$_{TP}$ [$_{T}$ V+*enne*]]]]]

Here, placing the PP outside VP and the CP inside VP is intended simply to indicate the change from adjunct to complement. The reanalysis from adjunct to complement took place in the complement to verbs of the relevant type (e.g. verbs of command, as in (53–55)); after the reanalysis, *to*-purposives with the structure on the right-hand side of (56) were still found. This reanalysis should be compared with that in section 3.1 affecting *(h)ina* in Hellenistic

12. This analysis implies that complements which precede *to* must have raised out of the MP containing *to*, and probably out of the entire CP. This is consistent with what is proposed in analyses of OE word order inspired by Kayne's (1994) proposals (see Roberts 1997a, van der Wurff 1997, 1999, Hróarsdottir 1999). The fact that complements can move leftwards out of *to*-clauses but not out of *that*-clauses may support placing *to* and *that* in different positions in the C system (although it is difficult to see how to express this observation).

Greek (see also (31) and (29) in section 3.2 concerning the change of Latin *modo* to Calabrian *mu*).

The reanalysis in (56) captures the non-nominal properties of the OE *to*-infinitive noted by Los: only *to* was reanalysed, so in OE other prepositions did not co-occur with the infinitive, and the *-ne* ending was no longer a true dative inflection. Unlike the traditional analysis described above, we take the weakening of nominal inflections to be the cause of the reanalysis. Presumably at some prehistoric stage the nominalizations in purpose clauses appeared with other prepositions and in other case forms; at some point the paradigm was sufficiently defective for the nominal to be reanalysed as verbal and for the PP to be reanalysed as CP. The central mechanism at work in this reanalysis is the change in category of *to*, which may again be linked to case; once *to* is no longer a case-assigner, or more precisely once the case on the infinitive is no longer part of a productive case paradigm, it can no longer be a preposition, and so must be reanalysed as something else. At that point, it takes on the irrealis meaning component associated with purposives (cf. the discussion of purposives and modality in section 3.1), and is reanalysed as M. This implies that *to* changes meaning from its earlier purposive/directional prepositional content to a 'bleached' meaning as an irrealis marker – again, this has parallels with the changes affecting *na* and *mu* discussed earlier in this chapter.

Finally, the reanalysis in (56) was a structural simplification to the extent that adjuncts are more complex than complements. In X′-theoretic terms, this is true in the sense that the presence of an adjunct implies the presence of an extra segment of a projection, which a complement does not. We will return to the question of assessing the relative complexity of different structures in Chapter 5.[13]

During ME, two developments took place: the *to*-infinitive developed at the expense of *that*-clauses with the subjunctive and it became possible for material to intervene between *to* and the infinitive. Los (1999, Chapter 12) documents in detail how *to*-infinitives took over the distribution of *that*-clauses with the subjunctive in early ME. According to her analysis, in ME *to* shows signs of degrammaticalization in the sense that it stops being a clitic and becomes a free-standing morpheme. Syntactically, *to* starts moving to T overtly, thus

13. It may appear that the reanalysed structure in (56) is more complex than the earlier [$_{PP}$ P DP] structure, since it contains more nodes. However, this is due to the fact that we specify more of the internal structure of CP than of DP. It is plausible that the internal structure of DP is as complex as that of CP (see the references at the end of this section).

spelling out T. The trigger for this change in the categorial status of *to* has to do with the loss of the subjunctive morphology and the fact that subjunctive is being replaced by periphrastic expressions, namely a modal (e.g. *should* and *would*) which moves to T, followed by a verb. In other words, the trigger is morphological (no clear distinction between the indicative and the subjunctive) exactly as in the other two cases discussed before. In terms of our analysis, we can think of the modal content of the subjunctive inflection being 'transferred' to *to*, that is, changing in structural position from T to M, directly analogous to the change affecting the realization of mood features in Greek discussed in section 3.1 (see (16)). This kind of change is similar to the cases of 'upward' grammaticalization induced by loss of movement which we described in Chapter 2.

Second, as also shown in some detail by Jarad (1997), the obligatory adjacency of *to* and the infinitive disappears in ME. In particular, shifted pronominal objects and adverbs start to intervene linearly between the two elements. The following examples illustrate:

(57) a. he ne heþ mi3te to hit endi
he neg has power to it end
'He does not have the power to end it.'
(*Ayenbite of Inwit*, I, 113.252, cited in Los 1998:7)

b. the prestis ben forfended to enymore takyn monee of the puple
the priests are forbidden to anymore take money from the people
(Wyclif *Selected Works* II, 303; Visser 1960–1973:981, Jarad 1997:150)

This change receives a natural explanation in terms of loss of V-to-T movement. After this, the verb is in a position which follows the landing-site of object shift. It is important to note that this does not imply that the verb does not move at all in infinitives, and indeed Jarad (1997) gives evidence like the following, showing the order *(for)to–pronoun/adv–V* existed alongside the order *V–adv–object* at the same period:

(58) a. thy desire is forto witen overmore the forme of Aristotles lore
your desire is to know too much the form of Aristotle's traditions
(Gower *C.A.* 7.607; Jarad 1997:149)

b. whair I ane galland micht get aganis the nixt yeir forto perfurneis furth the work . . .
where I one gentleman might get in-preparation-for the next year to perform further the work . . .
'where I as one gentleman might get in preparation for the next year; to carry out the work further . . .' (William Dunbar 84; Jarad 1997:150)

Presumably, infinitive-movement is altogether lost when the infinitival ending disappears at the end of the fifteenth century (see Chapter 2 and Roberts 1993a:261).[14]

Finally, as briefly mentioned in Chapter 2, section 1, *for* infinitives develop in ME. Jarad (1997) documents the rise of *for* as a complementizer (see also Lightfoot 1979:187), also from a purpose clause. Jarad also gives evidence that ME had a compound complementizer *forto*, which was subsequently lost. The NE *for NP to VP* construction appears from the sixteenth century (Fischer *et al*. 2000:214f., Lightfoot 1979:186ff., Roberts 1993a:259f.) and appears to have involved the reanalysis of an earlier benefactive *for*-phrase, as schematized in (59) (see also Jespersen 1909–1949 for an early reference):

(59) it is good [$_{PP}$ for me] [$_{CP}$ PRO to go] > it is good [$_{CP}$ for [me to go]]

It is unclear on present assumptions how this reanalysis was related to the loss of infinitive inflection on the verb (see Roberts 1993a:261 for an account based on the idea that *to* is in T), but in any case it may really be the result of the combination of the earlier *for-to* construction and an earlier construction discussed by Fischer *et al*.[15] Fischer *et al*. (2000) show how the reanalysis in (59) was facilitated by an earlier construction where a bare DP appeared as the subject of an infinitival, a development they claim was made possible by the loss of case distinctions, hence a formerly dative DP could be interpreted as a subject:

14. The account given here is compatible with what we said about the development of modals in Chapter 2, section 1. There, following Roberts (1993a), we proposed that the trigger for the reanalysis of the formerly biclausal structure containing a premodal and its infinitival complement as monoclausal was the loss of infinitival morphology in the lower clause, as this was the crucial cue for the presence of the lower TP. Implicit in that analysis was the idea that, as long as infinitives had morphology, they raised to T. However, we are not required to say this. The presence of an infinitive ending on V, even if V does not move to T, can be taken as an indicator of the presence of that T. Presumably the relation between non-finite T and the non-finite feature associated with the infinitive ending in this case is mediated by Agree in the sense of Chomsky (2000, 2001). Thus, the reasoning in Chapter 2 can be maintained unaffected even if infinitives no longer move to T by the fifteenth century: the presence of non-finite inflection was a cue for the presence of non-finite T and therefore of a biclausal structure with modals, independently of whether that V moved to T. Once the infinitive morphology is lost, there is no cue for the biclausal structure and the reanalysis discussed in Chapter 2 takes place.
15. Other changes brought about by the loss of infinitive inflection on the verb may be the loss of *let* causatives (*he let burn the city* – see Roberts 1993a:286f.), the loss of passive infinitives, the spread of certain kinds of ECM constructions (Fischer *et al*. 2000:220ff.) and the related development of the A'-dependency in *easy-to-please* constructions (Fischer *et al*. 2000:261ff.). Interestingly, the second and third of these properties are found in Modern Greek, but not the fourth, while the status of the first is unclear.

(60) But [a man to lyve pesibly with harde & overthwarte men] . . .
'But for a man to live peacefully with hard and hostile men . . .'
(*Imit.Chr*. 2.3.14; cited in Fischer *et al*. 2000:217)

Here, as in the NE *for NP to VP* construction, the subject of the infinitive is in a position, possibly associated with an EPP feature, which is higher than SpecMP – compare the discussion at the end of the previous section. The following construction indicates that there was a compound *forto* element at some stage of ME, probably in M:

(61) I for to go is necessary. (Lightfoot 1979:187)

For NE, though, the structure is as in (62), as we saw in the previous section:

(62) [$_{CP}$ *for* (NP) [$_{NegP}$ (*not*) [$_{MP}$ *to* [$_{TP}$ . . .

Aside from the development of the *for*-complementizer and the *for NP to VP* construction, and the loss of infinitival movement inside TP (in two stages – see above), this structure is the one that resulted from the pre-OE reanalysis of purposive nominalizations given in (56).

We see then that the development of English *to*-infinitives involved two principal changes: the reanalysis in (56), which was arguably pre-OE, and the replacement of *that* + subjunctive clauses by *to*-infinitives in early ME, which involved a reassignment of certain modal features from T to M. Later, *for*-infinitives of various kinds developed and infinitive movement to T was lost, followed by loss of infinitival morphology (a development which may have had other important consequences, notably in triggering the reanalysis of the modals, as argued in Chapter 2, section 1; see also note 15). We interpret the early ME change as creating a structure identical in relevant respects, and very similar in origin, to the Greek *na* and Calabrian *mu* constructions discussed in the earlier sections of this chapter. Aside from the independent developments involving the loss of V-movement and the introduction of the *for NP to VP* construction, this construction is effectively the same as the Greek/Calabrian construction and resulted from the same kind of grammaticalization.

One last observation before we leave this section. Notice that while *to* is reanalysed as a C element (a modal particle), prepositional *to* survives all along. As argued above, this kind of categorial split seems to be dependent on the properties of the complement. In standard terms 'infinitival' *to* and locative prepositional *to* are not synchronically related (cf. Pullum 1982 and Radford 1997, Chapter 2 for a summary of the arguments). Notice though that, according to the analysis presented so far, the basic difference arises not from the intrinsic

properties of the two kinds of *to*, but from the properties of their respective complements. In other words, we can still maintain that we have a common syntactic category, in the sense that there is a common property shared by both variants, which surfaces either as P or as C/M depending on the syntactic context. According to Christidis (1989) the common semantic property is that of directionality: spatial for P *to*, temporal (irrealis) for modal *to*. A similar observation holds for deictic/presentational *na* (D) and modal (irrealis) *na* (C/M) in MG, and arguably for the *mo* versus *mu* pair (D vs. C/M) in Southern Italian. In other words, the underlying common semantic property and the way grammaticalization works in this respect can be taken as evidence that the syntactic categories P/C/D are closely related, to the extent that they can be treated as different syntactic realizations of the same set of features. In other words, what distinguishes a C from a D category is the nature of its complement (propositions vs. properties/individuals respectively). Indeed the similarities between C and D have been acknowledged in the literature (cf. Horrocks & Stavrou 1987, Szabolsci 1983/4, Siloni 1990, Cinque 1994, among others). The same holds for the similarities between P and the categories D and C: the case of French *de* or Italian *di* point in that direction (cf. Kayne 1993, 2000). These so-called prepositions can surface as C elements when they take a clausal complement, but akin to a D element when they take a nominal complement (cf. Cardinaletti & Starke 1999:184). If this is correct then change of one into the other comes as no surprise. We will see another instance of this change when we consider the complementizer *that* in the following section.

3.4 The English complementizer **that**

3.4.1 ***that****: demonstrative vs. complementizer*

In the previous sections we considered the development of modal particles, such as *na, mu* and *to*. Although each of these elements derives from a different lexical source, they all seem to follow the same steps in their grammaticalization as modal particles. The triggering factor for their reanalysis as modality markers has to do with the loss of infinitival and subjunctive morphology. Under these conditions the elements under discussion are reanalysed as modal particles in the C system. The analysis of *to* and partly *na* as C elements is rather novel in this respect; this is less so for *mu*, although in the present account we have analysed it as an element associated with a Modality head, and not as a typical complementizer. In this connection, the analysis proposed here for *mu* is novel. In the present section we will consider the development of typical

complementizers such as the Germanic *that*-complementizers and further explore the change in categorial status, that is, D > C, which was mentioned in the previous sections. We concentrate on Germanic *that*, as the development of this has been discussed in the recent theoretical literature (see Ferraresi 1997, Kiparsky 1995, Longobardi 1991). However, there is reason to think that the development of *that* is typical of the development of *that*-complementizers in other language families, for example Latin *quod* to Romance *che/que* and of Greek *oti* and *pou*.

The element *that* in NE has a dual status: a demonstrative pronoun, as in (63a), or a complementizer as in (63b):

(63) a. *that* (book)
b. I think [*that* John is a smart guy]

The two instances *that* have been standardly analysed as synchronically distinct lexical items belonging to the category D and C respectively. The claim that this is an instance of two distinct, albeit homophonous, items is based on a number of phonological, morphological, syntactic and semantic differences (cf. Radford 1997, Chapter 2). Phonologically, C *that* is reduced, that is, [ðət], while this is not the case for its D counterpart. Morphologically, demonstrative *that* is in opposition with *this*, and has a plural form. Complementizer *that*, on the other hand, cannot inflect for plural, and forms a paradigm with elements such as *for* and *if* (and *to* according to our analysis in the preceding section). Syntactically, C *that* takes an IP complement (proposition), and can be optional in certain contexts (cf. Stowell 1981, Chapter 5) without dramatically affecting the meaning of the clause. On the other hand, D *that* takes an NP complement (individual/property), and cannot delete without giving rise to ungrammaticality, or affecting the meaning of the DP:

(64) a. I think (that) John is smart.
b. I want *(that) book.

Finally, semantically, it has been argued that C *that* is void of semantic content (cf. Lasnik & Saito 1992), whereas demonstrative *that* has semantic content, being a deictic element.[16] In this sense, the meaning of demonstrative *that* is

16. Notice that demonstrative *that* may not always express distance, as when it is used in pronominal relatives (Lyons 1999:19):

i. She prefers her biscuits to **those** I make.
ii. I want a coat like **that** described in the book.

heavily contextual, while this is not so for C *that* (see also Bresnan (1972) for a discussion of the semantic properties of *that*).

Each of these arguments seems to suggest that D and C *that* are simply homophonous items, although they are historically related, in the sense that the latter was derived from the former. Notice though that each of the above arguments regarding the differences between the two can be challenged. Consider the fact that C *that* is phonologically reduced, which is to be expected, on the basis that functional elements are phonologically reduced. The absence of phonological reduction in the case of D *that* can be accounted for on the basis that being a deictic element, it can receive some sort of stress (cf. also the discussion of the two *na* in MG and *mo* vs. *mu*, in section 3.3 above). This pattern should be seen in parallel to the contrast found between full pronouns and clitics: the former receive full stress, while the latter are unstressed (cf. Cardinaletti & Starke 1999).

Consider next the morphological differences between the two and the absence of a plural form for complementizer *that*. The D *that* lexicalizes a feature associated with demonstratives, presumably a deictic feature, given the contrast between *this* and *that* in terms of close versus distant proximity to the speaker. In addition to this feature it also lexicalizes Number, as the availability of the plural form indicates. Number in nominals is quantification over individuals or properties, and structurally corresponds to a NumP (cf. Ritter 1991, Cinque 1994, among others; see Giusti 1997 for an overview), as shown in (65) (we elaborate on the position of demonstratives in Chapter 4, section 4.1):

(65) $[_{DP}$ *that/those* $[_{NumP}$ $t_{that/those}$ $[_{NP}]]]$

If we want to treat C and D *that* alike, the obvious question is what blocks the plural form in the C system. In other words, why is (66) ungrammatical?

(66) *I don't believe *those* the world is round

One could argue that the plural *those* can be taken to mark an interpretation which yields quantification over propositions ('I don't believe those propositions which assert/state/entail that the world is round'). The structure in (65) can provide an answer to this question: what makes *that* behave differently inside the DP is precisely the presence of a NumP, which is presumably absent in the CP system, at least following standard assumptions. In other words, the morphological differences between the two elements are not due to the intrinsic

absence of a plural form for *that* as C, but to the absence of the relevant functional category NumP in the C domain.[17]

In relation to this, it is interesting to note that embedded propositions correspond to singular terms. Independent evidence for this comes from the availability of nominalized clauses in MG, as in the example below (67) (cf. Roussou 1991):

(67) a. [$_{DP}$ To [$_{CP}$ oti efije]] me stenoxorese.
the-sg that left-3sg me upset-2sg
'(The fact) that she left upset me.'
b. *Ta oti efije
the-pl that left-3sg
c. *to* pedhi vs. *ta* pedhja.
the child vs. the children

In (67a) the *oti*-clause is embedded under the D *to*. Notice that although the determiner *to* has a productive plural form, namely *ta*, as shown in (67c), only the singular form is possible when it is used to introduce a clause. This kind of restriction parallels the one concerning *that* in (66). A similar restriction holds when a pronominal replaces the CP in certain contexts:

(68) a. The earth is round.
b. I don't believe *it*/**them*.

Once again, only a singular pronominal is possible, excluding the plural form which is in principle available. These differences have nothing to do with the morphological properties of the pronoun, but are linked to the intrinsic semantic properties of propositions. This is in accordance with Davidson ([1968] 1997:828–829) who argues: 'sentences in indirect discourse, as it happens, wear their logical form on their sleeves (except for one small point). They consist of an expression referring to a speaker, the two-place predicate "said", and a demonstrative referring to an utterance.' In other words the sentence in (69a) has the logical structure in (69b):

(69) a. Galileo said that the earth was round.
b. Galileo said that: the earth is round.

In Davidson's analysis, the *that* used in (69a) is actually the demonstrative. Although it is possible to argue that *that* in terms of its position in the

17. Notice that the cases of complementizer agreement of the type found in West Flemish, for example (Haegeman 1992), are different from the one mentioned above in that the number agreement which shows on the C is the one associated with the subject.

clause structure has also been grammaticalized as a C element (given the morphophonological properties mentioned above), what is crucial for our purposes is that from a semantic point of view the C *that* can be analysed like D *that*. In the following section we will see how this is important for the development of the complementizer *that*, and other C elements of this kind in other languages.

The above discussion partly gives an answer to the question regarding the final distinctive property between D and C *that*, namely that the former but not the latter has semantic content. The assumption regarding C *that* has been mainly motivated on syntactic grounds, in order to account for the fact that it can delete in certain contexts. In this respect it has been treated very much like expletives (*there/it*), which are also assumed to lack semantic content and therefore require an associate (cf. *There arrived a man*). In more recent analyses though, expletives like *there*, for example, do have feature content (cf. Chomsky 1995, Chapter 4). Because of this, they do not trigger expletive replacement at LF. In fact merger of *there* in SpecTP is an alternative way of satisfying the EPP, and it is perhaps one of the few mechanisms (if not the only one) that allows a DP subject to occur in a postverbal position. The same reasoning can extend to C *that*. In fact, it has become rather apparent in the recent literature that *that* has feature content. For example Rizzi (1997) argues that *that* can bear the following feature specification:

(70) a. *that*: +declarative, (+finite)
b. [$_{\text{ForceP}}$ *that* [$_{\text{FinP}}$ t$_{\textit{that}}$ [$_{\text{TP}}$ . . . .]]]

The +finite specification is optional in the sense that there are cases where *that* has to be merged directly in Force (e.g. when embedded topicalization takes place). Thus the obligatory feature which characterizes C *that* is +declarative. This feature can be taken as deictically referring to the truth of the proposition expressed by the IP complement to C *that* in the same way that the demonstrative deictically refers to the individual expressed by the complement to D *that*. This intuition regarding the nature of declaratives seems to underlie Davidson's account of their logical structure, cited above (we return to the status of the declarative feature in Chapter 5).

In terms of the C structure presented in sections 3.1–3.3, we would say that *that* is specified for clause-typing properties, hence its opposition with elements like *if*, as well as modal properties (realis), hence its opposition with *to*. If there is a subordinating head, as illustrated in (9) above, then *that* can

be specified for this property as well (hence its opposition with *for*), yielding the structure in (71a). This is supported by the fact that there can be no adverbials preceding *that* in embedded clauses, as shown in (52b), repeated below as (71b):

(71) a. [$_{CP}$ *that* [$_{OpP}$ (*that*) [$_{MP}$ (*that*) [$_{TP}$ . . .]]]]
b. [*In general that John knows what's going on] is a surprise.

As (71) shows, *that* in NE can in fact lexicalize all three positions in the C system. Lexicalization of M by *that* is possible to the extent that there is no other material intervening between M and Op. In this respect, it behaves like *na* in MG. Unlike *na*, though, it can clearly lexicalize the highest C position as well, very much like *pou* in MG. According to the above discussion, it does not make any sense to claim that *that* as a complementizer has no semantic content, given that it realizes features in the C domain which are interpretable at LF.

The discussion so far was meant to show that the differences between C and D *that* can be accounted for primarily as a consequence of the fact that they take different complements. This allows us to maintain that in essence we are dealing with one and the same lexical item, which can surface as either D or C depending on the syntactic context.

Notice that if we assume that C and D *that* are completely distinct elements which happen to be homophonous, then we have to assume that grammaticalization of *that* as a C element not only led to categorial change, but also crucially created a new item. If, on the other hand, we take it that these two elements can still be related then the grammaticalization of *that* as a complementizer implies that it has developed a new function in the structure, in the sense that it relates to both N- and V-related categories. It is worth mentioning that this is quite common in various languages. As already mentioned in the previous section (3.3) at some stage in the history of English, *to* not only became associated with DPs but also introduced IPs as well. This holds for *for* as well, which apart from its P function, can also appear in C, and assume a position very similar to that of *that* (see Jarad 1997, Fischer *et al*. 2000:214–220 on the development of *for*). Italian exhibits the same pattern with the element *di*, which can take a nominal complement (in which case it is identified with a preposition), or an IP (in which case it is called a complementizer); the same holds for French *de*, to mention just a few examples (cf. Kayne 1984 and 2000 for recent analyses of these elements). In other words, it is very common that one and the same category can surface as D or C. In this respect the development of complementizers out of demonstratives (or pronominals in general) is not surprising. In the

following section we will consider the development of *that*, and account for its grammaticalization as C.

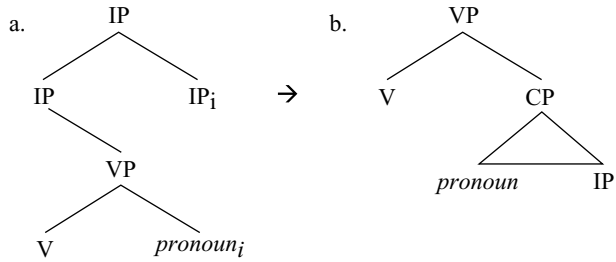
3.4.2 The development of ***that***

Diachronically, it has been argued that the complementizer *that* derives from the demonstrative *that* (see Ferraresi 1991, 1997, Kiparsky 1995, Longobardi 1991). If we take it that demonstrative and complementizer *that* in NE are simply homophonous items, then we need to show how this categorial change took place. On the other hand, if we consider them as variants of a basic abstract category, then we can account for this change in structural terms, as already suggested for infinitival *to* above.

For Kiparsky (1995), the development of Germanic *that*-complementation involves two steps. The first is the innovation of finite embedded CPs (from Indo-European to Germanic; this development also took place in several other branches of Indo-European), along with (or at the expense of) non-finite complements (cf. the discussion on Greek in 3.2). The latter is a consequence of the former in the sense that finite embedded CPs triggered the development of finite complementizers. Kiparsky (1995) relates this structural change to another change, namely the innovation of V2 constructions: the projection of a C position was the prerequisite for V movement higher up in the clause structure.[18]

According to this analysis, the relevant structural change is the one given below (where we label the adjoined constituent IP, although this may not quite be what Kiparsky assumes, and may not be quite accurate to the extent that most of the examples of adjoined clauses Kiparsky gives feature relative clauses, which are presumably DPs):

(72)



18. Interestingly, the Romance languages have developed a *that*-complementizer from the Latin neuter relative pronoun *quod*, and the Romance languages have arguably all gone through a V2 stage (see Roberts 1993a, Vance 1997 on French, Fontana 1993 on Spanish, Ribeiro 1995 on Portuguese, Benincà 1995 on Italo-Romance).

The structure in (72a) involves adjunction of the IP (presumably to IP), which is frequently associated with a coreferential pronominal in the relevant grammatical-function position in the main clause. The change is from adjunct subordinate clauses, usually with a pronominal element present, to complement clauses. The structure in (72a) is very much what we would find in clitic-doubling constructions: a pronominal element fills in the complement position and is related to an argument DP in a peripheral position. On this basis, there is nothing strange about the structure in (72a). In fact, NE allows for a similar construction with some predicates, as in the following examples (albeit with a complementizer present in the adjunct clause):

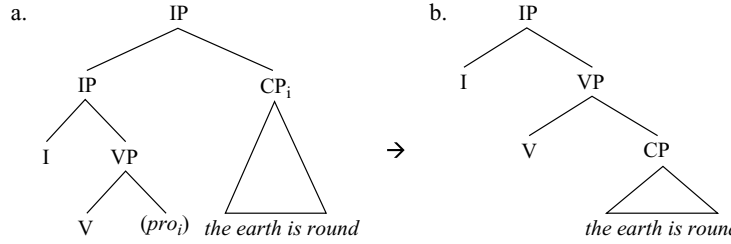
(73) I know/regret it [that John is a liar]

In (73) the pronoun *it* is in complement position, while the *that*-clause is extraposed (note that such clauses are islands: ?**Who do you regret it that John saw?* See Cinque 1991 for an account of these effects, and Pesetsky 1991 and Smith and Tsimpli 1995 for an analysis of these constructions).

The basis of Kiparsky's (1995) analysis is that the development of lexical items that function as complementizers signals a change from *parataxis* to *hypotaxis*, in the traditional sense (i.e. a previously independent clause now becomes dependent on a matrix predicate). Notice incidentally that the structure in (72a) is also in accordance with the Davidsonian approach outlined above, which takes *that* to be outside the embedded clause for purposes of semantic interpretation. The change in (72) can be taken as an instance of structural simplification: a former adjunct clause becomes a complement, thus eliminating the adjunction structure [$_{IP}$ IP CP] in favour of a head-complement structure, for example, [$_{V'}$ V CP]. It is in this respect that we can interpret the change from (72a) to (72b) as an instance of grammaticalization, consistent with the assumptions underlying our view of grammaticalization.

To some extent the adjunct > complement restructuring appears to be on the right lines. However, the change summarized in (72) as it stands cannot quite capture the fact that the pronominal in complement position was reanalysed as a complementizer. In other words, the idea of structural simplification could still go through if a sentence like (74a), with no pronoun or with a phonologically null pronoun (both of which were possible in the original adjunction construction, as Kiparsky shows), was reanalysed as in (74b), that is, with the pronominal completely absent:

(74)



Kiparsky follows Kayne (1982) in assuming that clauses require a nominal head in order to be arguments, and hence the former pronouns became complementizers. In any case, structural simplification on its own is not sufficient to account for the fact that the pronoun has to become part of the new complement. Unless we assume that what actually takes place after structural simplification is reanalysis of the pronoun as a C element, which roughly speaking involves a leftward shift of the constituent boundary, as in (75):

(75) I think that [the earth is round] → I think [that the earth is round]

This kind of shift is not uncommon. For example, as mentioned in section 3.3, *for NP to VP* constructions in English can be ambiguous: the *for NP* can be either part of the VP, or part of the embedded CP (cf. Lightfoot 1979, Jarad 1997, Fischer *et al*. 2000:214–220). In fact, it was this kind of ambiguity that gave rise to the reanalysis of *for* as a C element in certain infinitival contexts (see section 3.3).

In this connection, the following examples from Gothic, pointed out by Ferraresi (1991:30–35) and Longobardi (1978, 1994a) are relevant:

(76) a. bi thamma wairthith **thamma** daga **ei** sunus mans andhuljada (L 17,30)
by this became the-dat day C son of-man revealed-self
'These ways become the day when the Son of Man reveals Himself'
b. witands **thatei** garaihtamma nist witoth satith (T 1,9)
knowing that+C the-just-dat not-is law made
'Knowing (this) that the law is not made for the just'
c. . . . domjandans **thata thatei** ains faur allans gaswalt (k 5,15)
. . . thinking about this that one for all dies
'. . . thinking about this, that one may die for all'

In (76a) the demonstrative *thamma* cannot be in C, as it clearly forms the head of the relative with *daga*, while *ei* occupies C. In (76b), the status of *thatei* is ambiguous: on the one hand, *that* could be in D with *ei* in C; on the other hand, *thatei* could be interpreted as a compound element occupying C (see Ferraresi

1991:31ff. for more discussion). In (76c) *thatei* must be in C, as the head of the relative is *thata*. Note that in terms of a raising analysis of relative clauses (see Vergnaud 1974, Kayne 1994, Bianchi 1999), what is at stake is raising of the head of the relative. More precisely, the examples in (76) have the structures in (77) according to Kayne's (1994:86f.) proposal for relative clauses:

(77) a. . . . [$_{DP}$ thamma [$_{CP}$ [$_{NP}$ daga] [$_{C}$ ei] [$_{IP}$ . . . t_{daga}]]]
b. . . . [$_{DP}$ that [$_{C}$ ei] . . . OR . . . [$_{C}$ thatei] . . .
c. . . . [$_{DP}$ thata [$_{C}$ thatei . . .

Clearly, loss of NP raising to SpecCP (in Kayne's terms) is a major factor in the reanalysis of the determiner which heads the relative clause (and is a demonstrative, as the glosses and translations clearly indicate). Note also that (77c) (and (77b) on the first structural analysis given) corresponds very closely to Davidson's analysis of *that*-clauses.

The older Germanic languages had a type of relative clause featuring a demonstrative and an invariant complementizer (*þe* in OE; *ei* in Gothic; *the* in Old High German). This construction seems also to have played a role in the development of *that*-complementizers, since in this case the natural analysis is to treat the pronoun as raised to SpecCP, and then reanalysed as part of C. Ambiguous examples from Gothic and OE are given in (78):

(78) a. than qimith parakletus **thanei** ik insandja
than will-come P. who+C I will-send
(J 15,26; Longobardi 1994:355)
b. ond **ðætte** tælwyrðes sie, ðæt hie ðæt tælen
and that+C/C blameworthy be, that they that blame
'and that they may blame what is blameworthy' (Campbell 1959:291)

The reanalysis here then may be of the kind shown in (79):

(79) [$_{CP}$ that$_i$ [$_{C}$ Prt] [$_{IP}$ . . . . t_i . . . .]]] > [$_{CP}$ [$_{C}$ that (+Prt)]]

In conclusion, the development of *that*-complementizers from demonstrative pronouns illustrates several features that are typical of grammaticalization as we see this process. First, there is phonological reduction (loss of older particles *ei*, *þe*; reduction of *that* to [ðət]). Second, certain morpheme boundaries, for example between *that* and *ei* and *þæt* and *te* (= *þe*) in (78), disappear – note that this is a further case of simplification of structure. Third, we observe adjuncts becoming complements, the loss of overt movement of NP to SpecCP in relatives and reassignment of grammatical features – all features of syntactic change that we have seen in previous sections and chapters. Finally, *that*

undergoes a semantic change which appears to be a direct consequence of its category change – see the discussion in the previous section.

Before we leave this section, we will mention a related case regarding the grammaticalization of the complementizer *pou* in Greek. The element *pou* has derived out of the CG relative adverbial *hopou* (where) > *opou* > *pou* (cf. Andriotis [1983] 1990:291). As a relative adverb it was restricted to relative clauses, and it progressively replaced the relative pronoun *hos* (in all genders), as the following example shows (from Jannaris 1897, §608):

(80) eis to oros opou aftos eipen
on the mountain where he said-3s
'on the mountain where he said' (J. Moschos 2914 A; 6th–7th century AD)

In MG, on the other hand, the derived form is used as a relative clause marker (very much like *that* in English). As a relative clause marker it is in complementary distribution with the relative pronoun, as shown in (81a–b). Furthermore, *pou* is also used to introduce factive complements (cf. Christidis 1986, Roussou 1994, Varlokosta 1994), as in (81c). The relative adverb *opou* is still found but in this case it is restricted to a locative adverb in free relatives, as in (81d):

(81) a. [To vivlio [*pou* aghorases]] ine endhiaferon.
the book that bought-2sg is interesting
b. [To vivlio [*to opio* aghorases]] ine endhiaferon.
the book the which bought-2sg is interesting
'The book that you bought is interesting.'
c. Lipame [*pou* efijes toso noris].
am-sorry that left-2sg so early
'I'm sorry that you left so early.'
d. Pijeno [*opou* thelo]
go-1sg where want-1sg
'I go wherever I want.'

The presence of *pou* in relative clauses extended from cases like the one in (81a) to all relatives and certain complement clauses.

The development of *pou* is summarized as follows: first it is found as a relative pronoun (presumably in Spec, thus an operator) modifying locative expressions. From locative it becomes a generalized relativizer, reducing to *pou*. It is further used (as an extension of its relativizing function) to introduce complements associated with a certain class of predicates, namely factives, thus being distinguished from *oti*. As Horrocks (1997:208) shows, this development is already ongoing in the Byzantine period. The reanalysis of *opou* > *pou* is similar to that of *that* shown in (79), as can be seen from (82):

(82) $[_{CP}\ opou_i\ [_C\ ]\ [_{IP} \ldots . t_i \ldots .]]] \rightarrow [_{CP}\ [_C\ pou]]$

In this respect the development of *pou* is an instance of grammaticalization, as it involves semantic 'bleaching' (loss of locative), phonological reduction and categorial change (from Adverb, or presumably a D element, to a C) (but see also Roussou & Roberts 2001 on an account of *pou*-complements in MG).

In the present section we have considered the development of typical complementizers, focusing on *that*-elements. We considered and modified Kiparsky's (1995) analysis in order to provide an account of the data. Here, as in the previous cases we have looked at, the typical properties of grammaticalization hold; in particular structural simplification and the loss of movement play a central role.

3.5 From verb to complementizer: serial verb constructions

3.5.1 Introduction

In our account of the reanalysis of lexical verbs as auxiliaries, as in the case of English modals, the Romance and the Greek future in Chapter 2, we argued that in all these cases the lexical verb is reanalysed upwards along the functional structure. With respect to the Greek future, we showed that the verb *thelo* in its reduced form finally becomes a particle (*tha*) in the C system (an M head). In the present chapter, we have also considered the case of the modal particle *na* (which forms a natural class with *tha*) out of the subordinator *hina*, and shown the similarities with the development of Calabrian *mu*, English *to* and, with further complications, *that*-complementizers. All the cases we have considered so far seem to provide empirical support for our claim that the 'path' of grammaticalization can be structurally defined for either lexical items or grammatical features.

We will complete this chapter by considering one more case of grammaticalization of a C element, and in particular the development of complementizers out of serial verbs. Recall that in our discussion of *tha* (Chapter 2, section 2.3) we argued that the biclausal *thelo* + infinitive construction was reanalysed to a monoclausal one, upon the loss of the final *-n* on the infinitive. Owing to this loss, the former infinitival V was reanalysed as a finite one, yielding a serial verb construction, for example *thelo grafo*. This construction occurred in parallel with the biclausal one, which involved a *na*-complement: *thelo na grafo*. The development of *tha* emerged out of the combination of these two structures, thus yielding the reanalysis of a lexical V to a modal particle in C. Another well-known case of V > C reanalysis discussed in the literature is

that of verbs of 'saying' which can resume the function of a complementizer and be used as elements that introduce embedded clauses (see Heine & Reh 1994, Lord 1993 for a detailed discussion and more references). We will argue that this case is also an instance of grammaticalization in that it involves lexical to functional reanalysis in an upward fashion. In particular we will show, following some rather standard assumptions in the literature, that the V > C reanalysis has a serial verb construction as its basis, such that the higher V in the construction moves to, and is subsequently merged in C, leaving the lower V as the only predicate. We will draw our data from Klamer (2000) who considers the grammaticalization of report verbs to complementizers in two Austronesian languages, namely Tukang Besi and Buru.

3.5.2 Quotative constructions and complementizers

Klamer (2000) considers the development of Buru *fen* and Tukang Besi *kua* as complementizers out of the corresponding verbs of saying. The Buru item *fen* (or *fene*) is used as a complementizer, a verb of saying or a quote marker. This distribution is illustrated by the following examples (from Grimes 1991, cited in Klamer 2000:76–77):

(83) a. Nak ana-t fene, 'Ng-ina, nau dah.olo'
3sgPoss child-nom say 1sgVoc-mother 1sgPoss bunch.head
'Her child said: "Mother, the hand (i.e. of bananas) at the top of the stalk is for me" ' (Grimes 1991:531)

b. Da prepa fene ringe mata haik.
3sg say FEN 3sg die perf.
'He$_i$ said that he$_j$ was already dead.' (Grimes 1991:133)

When *fen* is used as a verb of saying, or a quote marker, it is followed by an intonational break, indicated by the comma in (83a), while there is no such break when *fen* is a complementizer, as in (83b). The C *fen* is in complementary distribution with the irrealis complementizer *la* (Klamer 2000:79), as illustrated in the following examples (cf. also the corresponding pairs in MG, Southern Italian and English discussed in the previous sections); Dist = Distal, Irr = Irrealis:

(84) a. Sira erei fen du eptea fi dii.
3pl refuse FEN 3pl sit Loc Dist
'They$_i$ refused, (saying) they$_i$ would stay here.'

b. Sira erei la du eptea fi dii.
3pl refuse Irr 3pl sit Loc Dist
'They refused to stay here.'

Coreference is possible when the embedded subject is a pronominal clitic, as in (84). If the embedded subject is a full pronoun, as in (83b), then there is a disjoint reference effect, or in Klamer's terms a switch-reference effect. The pronominal clitic may also be dropped, in which case the reference of the subject is fixed by the discourse. In Tukang Besi, the item *kua* is also used as a quotative marker or complementizer, with the additional difference that it no longer exhibits any verbal properties. In other words, it is more grammaticalized than its Buru counterpart. The relevant examples are given below (examples from Donohue 1995, cited in Klamer 2000:82; R = realis):

(85) a. To-wuju-'e kua to- 'ita-'e
1p.R-persuade-3Obj KUA 1p.R-see-3Obj
'We persuaded her to let us see her.' (Lit.: 'we persuaded her *kua* we see her')
b. To-dahani kua no-'ita-kita i aba
1p.R-know KUA 3R-see-1p.Obj Obl before
'We know that they saw us before.'

In (85a) *kua* can be interepreted as a quote marker or a complementizer, while in (85b) it can only be a complementizer. As a complementizer *kua*, just like *fen*, is subject to selection by the relevant matrix predicate (e.g. verbs of saying, reporting, mental or physical perception). The pronominal subject in this language takes the form of a prefix, which may be dropped, as in Buru. Unlike Buru though, in Tukang Besi it is the presence of the complementizer *kua* that triggers an obviation effect (disjoint reference, or 'switch-reference'); coreference is possible provided *kua* is absent, as the contrast between (86a) and (86b) shows:

(86) a. No-roda tabeda no-wila.
3sg-remember must 3R-go
'She$_{j}$ remembered that she$_{j/k}$ had to go.'
b. No-roda kua tabeda no-wila.
3sg-remember KUA must 3R-go
'She$_{j}$ remembered that she$_{*j/k}$ had to go.'

Thus both languages have a complementizer which has a verb of saying as its lexical source, and furthermore they both allow for a null subject which is discourse identified. They differ, though, with respect to the element in the clause structure that marks switch-reference (or logophoricity in Klamer's terms): in Buru it is the full pronoun (that is the subject itself), while in Tukang Besi it is the complementizer.

Based on data of this type, Klamer (2000:87) argues that the grammaticalization of C out of a report V in these languages goes along with the following characteristics:

(87) *Properties*
- a. Discourse pro-drop.
- b. Juxtaposition for clause combining is possible.
- c. No morphosyntactic distinction between direct and indirect speech.
- d. C-initial.
- e. The quote clause follows the report verb.
- f. The quote verb is intransitive.

Property (e) is not attested in Tukang Besi, given that *kua* no longer functions as a verbal predicate. Klamer then argues that the first stage in the reanalysis of these verbs of saying to quote markers/complementizers arises in contexts like the one below from Buru, where the matrix subject is not overtly expressed:

(88) Fen, 'Ng-ina nang dah.debu-k.'
FEN 1sgVoc-mother 1sgPoss bunch repeat-k
'(He) said: "Mother, (then) the next hand is for me."'

The content of the matrix subject in this case is contextually recovered (property (87a)). Given further that the report verb is intransitive (87b), the verb appears not to have any argument structure. Thus, on the one hand, the syntax allows for a null argument (subject), on the other hand, semantics requires an argument. According to Klamer this mismatch between syntax and semantics can be repaired in one of the following ways: (a) by introducing an overt pronominal argument, or (b) by losing the unrealized argument. If the latter option is adopted, as is the case here, the intransitive report V can no longer function as a predicate and is ultimately reanalysed to a quote marker.

More precisely, reanalysis follows the steps below (Klamer 2000:92–93):

(89)
- a. $[_S[_\alpha\ [_{NP}$ he$]\ [_{VP}$ REPORTs$]\ [_\beta\ [_{NP}$ I$]\ [_{VP}$ go$]]]] >$
- b. $[_S[_\alpha\ [_X$ REPORTs$]]\ [_\beta\ [_{NP}$ I$]\ [_{VP}$ go$]]] >$
- c. $[_S\ [_X$ REPORT$]\ [_\beta\ [_{NP}$ I$]\ [_{VP}$ go$]]] >$
- d. $[_S\ [_\gamma\ [_{NP}$ he$]\ [_{VP}$ says/thinks/...$]]\ [_X$ REPORT$]\ [_\beta\ [_{NP}$ you$]\ [_{VP}$ go$]]]$

Loss of the external argument gives rise to the reanalysis of the report V to a category-neutral item (REPORT), which is also morphologically impoverished (89b). This reanalysis further gives rise to structural simplification: in the absence of a higher predicate, there is only one predicate/clause present (89c). Semantic bleaching of the original report verb triggers the presence of another verb which now carries the function of report, saying, etc. The category-neutral

item REPORT between the two clauses in (89d) can then be interpreted as a complementizer. In this final stage, the REPORT item shows all the features of grammaticalization: it is morphologically and semantically impoverished, and belongs to a different syntactic category (V > C).

In Klamer's (2000) analysis the crucial point is that the original report verb becomes a category-neutral element, which the syntax can interpret as a complementizer. In other words, the C status is determined by the syntactic structure the REPORT item occurs in. This latter point is consistent with our approach to grammaticalization as presented so far (cf. the preceding sections). However, a number of problems arise with the actual implementation of Klamer's analysis. First, if REPORT is a category-neutral element, then what prevents it from appearing in any possible syntactic position? Second, what is the position in the clause structure that the REPORT item occupies in (89d)? If it is a complementizer, there should be one further step involving the reanalysis of REPORT as part of the lower clause; the new clause is then embedded under the matrix predicate. However, this is not so obvious in the above structure. Finally, why would reanalysis of REPORT force the presence of another report predicate, as in (89d)? This is even more problematic if we consider that the added verb is not necessarily a report verb or a verb of saying, as already mentioned above.

Let us then see how we can formulate this reanalysis in our terms, avoiding the problems raised above. The first step of grammaticalization, that is, loss of argument structure, is a more general property of V reanalysis. This was already discussed with respect to the development of English modals, as well as the Latin *habeo* and Greek *thelo* as auxiliaries. Despite the similarities between those cases and the present one, there are nevertheless some crucial differences. For example, loss of argument structure in the case of English modals does not result in the absence of a subject, given that an overt subject is obligatory in finite clauses. In Greek, on the other hand, the subject may be null, but there is always an agreement affix present on V, even when this is used as an impersonal verb, as was shown for impersonal *thelei* in Chapter 2, section 2.3. In Buru and Tukang Besi, on the other hand, pro-drop leaves a verb which has no agreement marking, in other words a lexical item which does not show any typical properties of a verbal predicate. A similar situation is attested with the form *the* of the verb *thelei* in Greek, which has no agreement morpheme. In our discussion in Chapter 2, we argued that loss of argument structure and the relevant morphology leads to merger of the relevant class of lexical V to I. This is the first step in the reanalysis of V > (I) > C.

In order to illustrate how this works, suppose then a serial verb construction has a structure with two (or more) VPs (cf. Baker 1989, the collection of

papers in Joseph & Zwicky 1990 and Lefebvre 1991, Collins 1993, Déchaine 1993, Cormack & Smith 1994, den Dikken & Sybesma 1998, among others). Assuming that one of the characteristics of serial verbs is that they denote a single event, then we expect them to have a single T head. Under locality, since it is the higher V that is closer to T, it must be the higher and not the lower V that is prone to reanalysis. If the higher V loses its external argument (and is furthermore intransitive, in the sense that it has no DP complement), then there is no evidence for the presence of two predicative Vs. Faced with this set of data, the language learner opts for a structure that has one V. In terms of change, the reanalysis involves structural simplification in the sense that the higher V head/projection is eliminated. The next step involves reanalysis of the morphologically and semantically impoverished item as a C element:[19]

(90) a. $[_{CP}\ C\ [_{TP}\ T\ [_{VP1}\ V_1\ [_{VP2}\ V_2]]]]$ >
b. $[_{CP}\ C\ [_{TP}\ [_{T}\ V_1]\ [_{VP2}\ V_2]]]$ >
c. $[_{CP}\ [_{C}\ V_1]\ [_{TP}\ T\ [_{VP2}\ V_2]]]$

Once the former V is directly merged to C, it becomes an element which subsumes the typical properties of a complementizer, and therefore has no V features (cf. also the discussion on *tha* in Chapter 2, section 2.3). In this respect it can be used to introduce complement clauses under the relevant predicates. This change also signals a change from a paratactic to a subordinating construction.

Under this account, there is no need to assume that a higher predicate is required to carry the function of reporting/saying, thus avoiding the problem raised by Klamer's (2000) analysis. Furthermore, we avoid the problems raised by the postulation of a category-neutral element: the reanalysed V is an element in the C system. Categorial change, then, goes along with the different positions that the reanalysed element assumes in the clause structure. The V >

19. It is not clear whether the languages in question involve V-to-T movement. According to den Dikken & Sybesma (1998) serialization is a property of languages that lack V raising (to both *v* and T). Instead these languages opt for the lexicalization of T by a distinct morpheme. This may be true for the languages discussed here (as well as the relevant African languages, or Chinese), but it may not be an absolute condition on serialization, if we allow for serialization to hold, albeit in a limited fashion, in languages that do show V raising, as is the case with Greek (cf. *thelo grafo*) and Salentino discussed in Chapter 2, section 2.3. Even if Buru and Tukang Besi have no V raising, our analysis still holds as a former V is merged in T, or perhaps directly as a C element. In other words, even if there is no former movement to these positions, the point that remains is that a former V is used to lexicalize features of T/C in an upward fashion.

C reanalysis in the case of serial verbs provides further support to our claim that grammaticalization is upwards.[20]

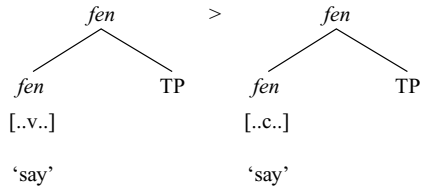
3.5.3 V > C vs. V > P reanalysis

Before we conclude this section, it is worth mentioning briefly the alternative possible reanalysis usually associated with serial verbs. In the discussion above we consider the reanalysis of the higher V in a serial verb construction as a C element, following the 'path' of grammaticalization along the clausal functional structure. Our approach also predicts that it can only be the higher V that is reanalysed along these lines, and not the lower one, on the assumption that the higher V is closer to T/C. Thus if grammaticalization is defined along the path of More/Merge, it follows that a lower V cannot cross a higher one, without inducing a Minimality effect.

It has been noted in the literature that the lower V in a serial V construction can nevertheless be reanalysed as a P (cf. Lord 1993), as in the following examples:

20. Whitman (2001) argues that V > C reanalysis is a simple instance of 'relabelling' which does not affect the surrounding syntactic structure. He argues that bare phrase structure makes this change even more apparent on the basis that there are no categorial labels projecting. In other words, in a serial verb construction where the higher V of saying, e.g. *fen*, is reanalysed as C, the change is as follows (strictly speaking *fen* has a bilabial initial consonant, as pointed out to us by Neil Smith (personal communication). In the examples below we follow Whitman's transcription):

(1)

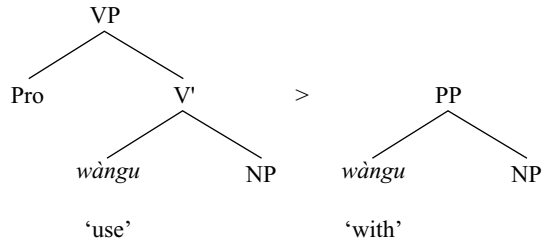


Categorial reanalysis, then, essentially involves a lexical change. Notice, though, that this cannot be the whole story, as there are still some issues that need to be resolved. For example, in the reanalysis in (i) the implicit assumption is that in a serial verb construction the second V is not just a VP but a TP. Notice that if there is a T present associated with the lower V, then it is hard to maintain that there is a single event formed by the two verbs. What is perhaps present is an Agr position, i.e., a position where the arguments of the lower V can be structurally realized. Simple relabelling cannot account for the fact that in some cases categorial changes relate to changes of the complement (cf. infinitival *to* from the locative preposition *to*). As Klamer (2000) argues whether an element is interpreted as C or P depends on the syntactic context it occurs in, i.e. whether it has a proposition (TP) or an entity (DP) as its complement.

(91) a. taku wàngu (Kambera, Klamer 2000:94)
scoop use
'scoop X using/with Y'
b. Me fle agbale le Keta (Ewe, Lord 1976:182)
I buy book be-at Keta
'I buy a book at Keta.'

Klamer (2000) argues that loss of argument structure is at stake in this case as well: when the lower V is a preposition it has no external argument (although in this case it retains its internal argument). Whitman (2001), following different structural assumptions (cf. note 20), also argues that the V > P reanalysis can affect argument structure, as shown in (92) (adapting his (27)):

(92)



In Whitman's analysis, relabelling of the relevant items triggers the elimination of a structural position, associated with the external argument of the verb (hence the lack of an external argument).

Despite the different implementations, both approaches assume that this is an instance of grammaticalization, which is paired with loss of argument structure, and in particular the external argument. It is not clear in these analyses though whether the V > P reanalysis is lexical > functional reanalysis, or whether there is simply categorial change which still yields a lexical category. Part of the problem has to do with the definition of Prepositions as either lexical or functional categories. The distinction between two kinds of prepositions is a rather standard one, and more or less accepted in the literature (cf. the list of references in Déchaine & Tremblay 1998). Bearing this in mind, one could argue that the new item which is analysed as a preposition remains lexical, and therefore can have predicative properties. If this is correct then this change cannot be treated as an instance of grammaticalization, as it does not yield a new grammatical (functional) morpheme. In other words, the preposition derived out of a verb is still interpreted as a predicate with relation properties in the sense of Hale and Kayser (1993), that is, it establishes a relation between two entities, as in the structure below:

(93) $[_{PP}$ YP $[_{P'}$ $[_{P}$ ZP]]]

If, however, the derived P is relational then it can't be the case that this reanalysis involves loss of the external argument. It is then possible to account for these data by assuming that at least in some cases there is no loss of the argument structure, but the reanalysis involves a change of the categorial status of the element involved. The question that remains is what is responsible for this reanalysis. In any case, such a change does not correspond to grammaticalization as conceived here, although it might perhaps be seen as a preliminary change, in that $V > P_{lexical}$ is a step towards $P_{lexical} > P_{functional}$.

3.6 Conclusion

In this chapter, we have looked at several different cases of the development of complementizers and complementizer-like material. Needless to say, we have by no means exhausted the empirical range of the topic,[21] but we believe that the cases we have looked at are representative of the empirical range and at the same time illustrative of what we take to be the main mechanisms of grammaticalization. The first three cases discussed, Greek *na*, Calabrian *mu/mi* and English *to*, all involved the development of a CP-external element into a complementizer, or more precisely an irrealis mood marker occupying the M position in the C system (equivalent to Rizzi's (1997) Fin position). This development, although in itself involving apparent 'downward' reanalysis of the grammaticalized element, is similar to the developments discussed in Chapter 2 in that it was associated with loss of inflectional morphology (subjunctive and infinitival marking on the lexical verb). Moreover, the modal features which were earlier associated with the finite V in the I system later became associated with the M-position of the C system. In this sense, there was an 'upward' grammaticalization. The actual change in the structural position of the reanalysed element is associated with the simplification of structure: XP developing into X, and/or the loss of an adjunction structure.

The development of *that*-complementizers in Germanic and the rather similar Greek *pou* (as well as very possibly Romance *que/che* from Latin *quod*) clearly involves the loss of movement, as this element earlier underwent movement within a relative-clause construction and later becomes an invariant C element. Finally, the development of complementizers from serial verbs involves 'upward' grammaticalization without the loss of movement. This change is similar

21. See, for example, Lightfoot (1991) and Salles (2002) on the development of Brazilian Portuguese *para* from P to C.

to what Whitman (2001) calls relabelling, and clearly involves simplification of structure in that the former serial construction is reanalysed as a non-serial one; therefore, at the very least the structure of the VP is simplified.

This chapter has added one major new type of grammaticalization to what we saw in Chapter 2: upward grammaticalization of features associated with the loss of inflectional morphology encoding those features. We see the same mechanisms at work in this and in the other changes looked at here and in Chapter 2: loss of morphology, loss of movement, simplification of structure and diachronically upward movement. Clearly these mechanisms to some degree overlap, and are not all attested in every case. Moreover, we have not yet commented properly on their theoretical status. We will sort these questions out in Chapter 5. First, however, we must look at grammaticalization within the DP, in order to complete our overview of grammaticalization in the main functional systems.