Recategorizing C

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Abstract

Recent research explicitly addresses the fact that C is a category defined on the basis of its function ('complementation'), encompassing a number of elements whose intrinsic categorial content varies greatly. This paper considers declarative complementizers, of the form attested in Indo-European languages and argues that they are pronouns (proforms more generally), unifying the complementizer function with the pronominal one. In this framework, complement clauses are projections of nominals and exhibit a structure similar to free relatives. The proposal is that the pronoun in its complementizer function heads the constituent merging with the selecting predicate. This approach has implications for the articulated CP structure, reducing the left periphery to positions that are related to V (e.g., modality), whilst allowing for dislocation of constituents for scope purposes.

Keywords: complement clause, relativization, free relatives, left periphery, pronominal

6.1 Introduction

In the present paper we question the standard view that takes C (complementizer) to be a primitive syntactic category. We argue instead that C is a cover term for a variety of lexical items that fulfill the function of introducing a subordinate, and more precisely, a complement clause. In descriptive grammars at least, complement clauses are analyzed as nominals given that they distribute like NPs (DPs) in subject or object positions (e.g., 'subjective' and 'objective' sentences). Complementation in Indo-European languages may also be achieved without the mediation of a complementizer, as the contrast between a finite and non-finite complement clause in English (1) and (2) respectively shows:

(1) I thought [that John had left]
(2) I want [John to leave]

The difference relates to the properties of the inflectional system. Thus (1) is a finite clause embedded under *that*, while (2) is a non-finite (infinitive) marked by the free morpheme *to*, taken to be the equivalent of the infinitival affix in Romance languages.

Bresnan (1972) argued that complementizers are introduced in syntax via a phrase structure rule which expands the sentence (S), i.e., [S' $\rightarrow$ C S]. In her words "those conjunctive particles of English, which I call complementizers are a subject of interest, and perhaps even a syntactic category" (p. 6). The postulation of a C position played a crucial role in phrase structure and further became the target of verb movement, thus accounting for V2 phenomena (den Besten 1983). Thus, C was reinterpreted as a syntactic head not necessarily associated with the 'conjunctive particles' of Bresnan (1972). The expansion of the X'-schema to C and I gave rise to the replacement of S' by CP and S by IP (Chomsky 1986) and paved the way for the study of various phenomena targeting the left periphery of the clause, such as topicalization and focalization as A'-dependencies along with wh-movement (see Brody 1990). The latter have been at the core of research in many cartographic approaches, starting with Rizzi (1997), who argued that C splits into two basic heads, Force and Fin(iteness), with Topic and Focus phrases interpolating between these two, as in (3):

(3) [Force [(Topic) [Focus [(Topic) [Fin [I….

Further research has provided a more elaborate structure of the left periphery, yielding what is known as the 'syntacticization of discourse' (Haegeman & Hill 2013).

Within cartography, reference to a C(P) head is silently abandoned, being replaced by new categories (heads) semantically or pragmatically defined (for a recent view see Rizzi 2015; for an earlier overview see Cinque & Rizzi 2008). Typical complementizers like English *that* or Italian *che* for example become realizations of Fin and/or Force. Chomsky (2008: 143), who takes C to be a core functional head along with T and D, acknowledges this fact and says "C is shorthand for the region that Rizzi (1997) calls the "left periphery," possibly involving feature spread from fewer functional heads (maybe only one)". Still C and its substitutes are treated as syntactic positions which can host a variety of different elements, from complementizers proper to prepositions to particles to verbal elements. While the postulation of C had the advantage of providing a structural expansion for the operations that affect the left periphery of the clause, it has blurred the connection between C as a head with what Bresnan called 'conjunctive particles'. In other words, research so far has given rise to two notions of C: a syntactic head for the left periphery vs a set of lexical items with a subordinating function. The two notions become identified only when we consider the realization of the C position by a complementizer. In all other cases, there is a dissociation between the two.

In this paper we move a step back and view 'shorthand C' from inside out. That is, we look at the properties of the 'conjunctive particles' and derive an account of clausal complementation based on the properties of these elements. The picture that emerges is quite revealing. One important clarification is needed at this point: abandoning the category C in favor of features that project from the lexical items in question (complementizers) does not entail abandoning the left periphery of the clause, as is also evident in the implicit abandonments of the C category of Rizzi (1997, 2015), among others.

We basically consider data which involve declarative complement clauses. These involve an element that bears a resemblance to a pronoun, such as English *that*, Romance *che/que*, etc. (Manzini & Savoia 2003, 2011; Baunaz & Lander 2018, among others). This is illustrated with Italian (4) and its English translation in (5):

(4) So *che* fai questo
know-1SG that do-2SG this
(5) I know *that* you do this

We argue that complementizers are pronouns (section 2) and that (finite) complementation is an instance of relativization, based on the properties of the pronoun (section 3). In short, embedding via a complementizer (a 'conjunctive particle') gives rise to a DP/QP/NP argument. The use of pronouns as complementizers has implications for the articulation of the left periphery (section 4). For purposes of exposition, we keep the term 'complementizer' to refer to the elements that introduce a complement clause, as above. This term is meant functionally and not formally and serves necessary descriptive purposes.[1]

6.2 (Finite) complementizers = pronouns

[1] Here we do not address complementation via 'prepositional complementizers' or 'subjunctive particles' due to space limitations. These structures are considered in Manzini & Savoia (2018), and also Manzini & Roussou (2019). The idea is that prepositional complementizers are just prepositions and that subjunctive particles of the Balkan type are linkers which give rise to a predicative complement.

In the sentences in (4)-(5) above, the complementizers *that* and *che* embed a finite clause. English uses *that* in all types of embedded declaratives as well as in relatives, a situation also found in Italian (6a-b) with *che*.

(6) a. So *che* fai questo
know-1SG that do-2SG this
'I know *that* you do this'
b. Il lavoro *che* fai è noto
the work that do-2SG is known
'The work *that* you do is well-known'

Italian *che* is also a wh-pronoun, as in (7a), whose English equivalent is *what*. On the other hand, *that* is also a demonstrative pronoun, as in (7b).

(7) a. *Che* fai?
what do-1SG?
'What are you doing?'
b. I bought *that* book

The standard assumption is that the pronominal elements in (7) are different entities, since they have different phonological, syntactic and semantic properties (on English *that*, see Radford 2004: 52-57). More precisely, those in (7) are stressed and bind variables: *che* binds a variable in object position, while *that* binds a variable corresponding to the argument of the predicate 'book' (i.e., the set of books) and assigns it a definite/deictic reading. (6) and (7) also differ with respect to the syntactic position they occupy; in (7a) *che* as a wh-phrase (internally) merges with [+Q] C projecting Spec,CP, while complementizer *che* in (6a) is a [-Q] C head itself.[2] On the other hand, *che* in the relative clause in (6b) behaves like the complementizer *che* so it's treated as the manifestation of a [-Q] C, while the clause it embeds has a variable bound by a null A'-operator (Chomsky 1977). From a different angle, the relative clause in (6b) shares with interrogative clauses the presence of *che* as a wh-element.

Greek, on the other hand, has a more refined complementizer system. It distinguishes between three declarative complementizers, namely *oti*, *pos* in (8a), and *pu* in (8b). All of them translate as 'that'. *Oti* and *pos* are in free variation (at least in Standard Greek), while *pu* has a more restricted distribution regulated by factivity (Christidis 1982, Roussou 1994, 2010, Varlokosta 1994). More precisely, *pu* occurs with factive complements, while *oti/pos* occurs with either (a subclass of) factive or with non-factive complements. Furthermore, *pu* introduces (non-) restrictive relative clauses in (8b), just like *che* and *that*.

(8) a. Nomizo *oti/pos* eɣrapse ena vivlio
think-1SG that wrote-3SG a book
'I think *that* she wrote a book'
b. Xerome *pu* eɣrapse ena vivlio
be.glad-1SG that wrote-3SG a book
'I'm glad that she wrote a book'

[2] We leave aside other alternatives to relativization, such as the raising or the matching analysis. Irrespectively of the implementation, they all share the view that *that/che/que* etc. occupy the C head.

b. Aɣorasa to vivlio *pu/*oti/*pos* eɣrapse
bought-1SG the book that wrote-3SG
'I bought the book *that* she wrote'

The distinction between 'factive' and 'non-factive' complementizers is found in other Balkan languages as well (see Baunaz & Ladner 2018 for an overview and further references), where again the 'factive' one is also used in relativization (see Krapova 2009 on Bulgarian *deto*).

As is the case with *that* and *che*, the elements *oti, pos* and *pu* also have pronominal variants. Specifically, *oti* occurs as a free relative pronoun with an inanimate referent in (9a), while *pos* and *pu* occur as wh-pronouns ('how' and 'where') in (9b) and (9c) respectively.

(9) a. Arxioθetisa *oti/*pu/*pos* eɣrapse
filed-1SG what wrote-3SG
'I filed what she wrote'
b. *Pos* arxioθetises to vivlio?
how filed-2SG the book
'How did you file the book?'
c. *Pu* arxioθetises to vivlio?
where filed-2SG the book
'Where did you file the book?'

In (9b-c), *pos* and *pu* are stressed, bind a variable (manner or location) and give rise to a question wh-reading. As such they are wh-phrases, merging with [+Q] C, projecting a Spec,CP, while their complementizer occurrences in (8) are [-Q] C heads. Relative *pu*, like relative *che* and *that*, is analyzed as a complementizer which hosts a null Operator in its Spec, given the classical modification analysis of relatives (Chomsky 1977). The free relative *oti* in (9a) is also stressed and binds a variable inside the relative clause; as such it is construed as a wh-phrase. In traditional descriptive grammars, free relative *oti* and complementizer *oti* are treated as distinct entities; for this reason, the orthographical convention for the free relative pronoun is with a comma, namely *o,ti* (literally 'the what'). Note that all free relative pronouns are based on the interrogative pronoun prefixed by *o*, an uninflected determiner form; for example, *o-pjos* 'who(ever)', *o-pos* 'how(ever)', *o-pu* 'where(ever)', etc. Greek unlike English further has a distinct series of relative pronouns (see Daskalaki 2020).

A third type of variation in the (declarative) complementizer system is found in many Central and Southern Italian varieties which also have two declarative *k*-complementizers (Ledgeway 2003, 2005, Manzini & Savoia 2005, 2011). Unlike in Greek, the split is not across factive vs non-factive. In the *Guglionesi* (Abruzzi) variety for example, *ka* introduces complements to verbs of 'saying' and 'knowing', as in (10a), while *kə* introduces complements to verbs of 'believing' and 'wanting', as in (10b). A similar pattern is found for *ka* and *tʃi* respectively in *Laconi* (Sardinia). In (11) *ka* takes the indicative, while *tʃi* takes the subjunctive.

(10) a. m ɔnnə dəttə *ka* vɛ krɛ
to.me have-3PL said that come-3SG tomorrow
'They told me that he will come tomorrow'
b. vujjə *kə* vi krɛ
want-1SG that come-2SG tomorrow
'I want you to come tomorrow' Guglionesi

(11) a. m anti nau *ka* ennis kraza

to.me have-3PL said that come-2SG tomorrow
'They told me that you come tomorrow'

b. bɔʒɔ *ʧi* ɛɲdʒas kraza
want-1SG that come-2SG tomorrow
'I want you to come tomorrow' Laconi

In accordance with what we have seen so far for English, Greek, and Standard Italian, it comes as no surprise that in the *Guglionesi* variety, *kə* also means 'what', as in (12a), and is also the relativizer, as in (12b). On the other hand, *ka* doesn't have a wh-counterpart (see English *that* or Greek *oti*).

(12) a. *kə* ffi?
what do-2SG
'What are you doing?'

b. ɛ kkullə *kə* vvadə sɛmprə
is that that see-1SG always
'He is the one that I see all the time'

The Manzini & Savoia (2005) corpus shows that 44/55 dialects with two *k*- complementizers exhibit the pattern where the 'subjunctive' complementizer has a wh-counterpart. The remaining 11/55 varieties show no identity of either complementizer with the wh-system. The third logical possibility, namely coincidence with the 'indicative' complementizer is not attested. Additional evidence comes from the Aromanian varieties of South Albania where again the 'subjunctive' complementizer *tsi* coincides with the wh-pronoun 'what' (Manzini & Savoia 2018: Chapter 9).

Although this is by no means an exhaustive survey, it is quite indicative of the variation in the form and properties of complementizers across and within grammars (and so far, we have restricted our attention to declarative complementizers only). In the above cases, the complementizers under consideration resemble pronouns. A common line of research takes this resemblance not to be accidental and argues that complementizers reduce to their pronominal variants. This approach raises various issues that need to be addressed. The first concerns whether the complementizer is a syntactic head. The second one concerns the structure of complement clauses as projections of pronominal elements instead of CPs. The third one concerns the apparent conflicting properties of the same element in +/-Q environments. The answer to these questions also defines the role that complementizers play in embedding, and more precisely in nominalizing a clause.

6.3 Complement clauses and relativization

6.3.1 Background

The data presented above are only a small portion of the variation attested regarding complementizers, their distribution and their resemblance to other pronominal elements within and across grammars. There are two basic paths of inquiry: to assume that any resemblance is simply accidental (at most traced back to a historical change) or to assume that the resemblance points towards unification. Theorizing along the first path assumes that *that* as a complementizer is a different entity from demonstrative *that*, while relativizer *that* is also a complementizer and not a pronoun. This is the standard assumption in most approaches to complementation and relativization. Theorizing along the second path assumes a single lexical entry subsuming all functions or some of them (for example relativizer vs complementizer). This is the line of reasoning we endorse in the present paper, further

arguing for a single entry in all functions. This approach raises questions that need to be answered. For example, if complementizers are pronouns what position do they occupy in the clause structure? What is the syntactic expression of (finite) complementation and what is the relevance between complement and relative clauses?

Let us start with the latter question. Arsenijević (2009) argues that Finite Complement Clauses (FCC) modify a nominal head incorporated in the selecting predicate. The complementizer *that* in English is a predicate that introduces a lambda operator, in the sense of Adger & Ramchand (2002). The clause it embeds becomes a predicate, while the variable it introduces in the left periphery (in ForceP) is saturated by a nominal expression selected by the matrix predicate. For example, in a sentence like *John claimed that Mary is smart*, the verb *claim* is lexically decomposed to *made the claim* with the *that*-clause modifying *claim.* Moulton (2009), building on Kratzer's (2006) account of propositional attitude verbs, argues that *that* is a predicate that modifies the CONTENT argument of the selecting predicate. For example, in a sentence like *John believes that Mary is smart*, the *that*-clause modifies the content of what John believes, which is that Mary is smart. Keeping with the complementation via relativization approach, Kayne (2010: 191-192) argues that "demonstrative *that* and relative *that* and the complementizer *that* of sentential complementation… are best understood as all being synchronically instances of demonstrative *that*. … The absence of complementizer *this* … will turn out to be a special case of the absence of relative pronoun *this* (in a way compatible with both complementizer *that* and relative pronoun *that* being instances of demonstrative *that*)" (for an earlier different view see Kayne 1975). Kayne does not give a precise structure, but the assumption is that there is a single item *that* and that *that*-complements are some sort of relatives. The above analyses mainly consider complement clauses as relative clauses, by reducing complementation to relativization. They do not necessarily attribute a pronominal status to the complementizer (with the possible exception of Kayne 2010) and do not elaborate on the effects such an assumption has on the syntactic category C.

The issue of treating relativizing complementizers as pronouns is separately addressed in more recent research (although this point is sporadically found in older papers, for example van der Auwera (1985) on treating relativizer *that* as pronoun and not a complementizer). Sportiche (2011) argues that *que* in relative clauses is a (weak) pronoun, and the same holds for *qui*, arguing against Kayne's (1976) influential account of it as a complementizer. With respect to *qui* in particular, Sportiche shows that it is a pronoun and not a special form of the complementizer triggered by subject extraction (contra Rizzi 1990). With respect to other Romance languages, Kato & Nunes (2009) make a similar claim about *que* in Brazilian Portuguese, Rinke & Aßmann (2017) about *que* in European Portuguese, and more recently Poletto & Sanfelici (2018) about *che* and its manifestations in Italian varieties. So at least with respect to relative clauses there is convincing evidence that the so-called complementizer is an instance of an (uninflected) pronoun. The above analyses differ in the assumptions they make regarding the structure of relative clauses, by either assuming modification, or raising, or matching. For example, Rinke & Aßmann (2017) support the view of externally headed relatives via modification (mainly as in Chomsky 1977), while Poletto & Sanfelici (2018, 2021) assume a matching analysis (with an external and a matching internal head, as in Cinque 2015). Rinke & Aßmann (2017) further distinguish between a transitive and an intransitive variant of the same pronoun; the transitive variant is a D that takes a null NP complement in restrictive relative clauses, while the intransitive one is a D, equivalent to an *e*-type pronoun, that has no NP complement in prepositional and non-restrictive (appositive) relatives.

The above approaches essentially argue that what looks like a complementizer (a head) is basically a pronoun. The implicit distinction remains between pronouns and

complementizers in complement clauses. On the other hand, if complement clauses are hidden relatives, then we are forced to conclude that the complementizers that introduce them are also pronouns. If that is on the right track, then the structure of complement clauses and the very projection of C need to be viewed from a new perspective. We turn to this issue immediately below.

6.3.2 Complement clauses and free relatives

Manzini & Savoia (2003, 2011) were amongst the first ones to argue that (Romance) complementizers are pronouns. Manzini (2014) suggests that if complementation reduces to relativization, the closest match would be a free relative. An example of a free relative is given in (13a) from English with its headed counterpart in (13b):

(13) a. John ate [what I had cooked _].
b. John ate [the thing (food) [that I had cooked _]

The free relative in (13a) does not modify a head (at least not an overt one) and seems to directly merge as the object of the verb *ate*. The headed relative in (13b) modifies an NP, which merges as the object of the verb *ate*. In either case, there is a gap which corresponds to the internal argument of the verb *cooked*, which is an A'-bound variable. In the free relative, it is bound by the wh-phrase *what*. In the restrictive relative, it is bound by some other operator whose content depends on the assumptions one makes about the structure of relative clauses – so it could be a null Operator, or the head NP, or even pronominal *that*, though *that* is excluded in the free relative in (13a) where its wh-counterpart *what* is present. In Greek, *oti* which introduces complement clauses is also a free relative pronoun, as in (9a); *pu*, which is the main relativizer and a (factive) declarative complementizer, is excluded from free relatives. So, the *o*-series of pronouns (*o*+wh-pronoun) define the free relative pronouns paradigm, excluding the wh-pronouns from this context. The brief comparison between Greek and English suffices to show that variation can go either way with respect to the overlap between pronominal paradigms, depending on their lexical properties.[3]

Before we elaborate on the structure of complement clauses, let us provide some background on the structure of free relatives. There have been two main approaches in generative grammar, which have formed the basis for further elaboration. The first one, formulated by Bresnan & Grimshaw (1978), takes free relatives to be headed by the relative pronoun itself while the gap inside the clause corresponds to a pro-like form ('controlled pro-deletion'). The second one, formulated by Groos & van Riemsdijk (1981), takes free relatives to be headed by a null NP, thus assimilating them to some version of restrictive relative clauses. The two relevant structures, adapted in CP terms, are illustrated in (14a) and (14b) respectively – note that both approaches take the view that the CP adjoins to the NP it modifies.

(14) a. $[_{NP}$ wh $[_{CP}$ …. pro]] (CP = S')
b. $[_{NP} \varnothing [_{CP}$ wh C $[_{IP}$ … ~~wh~~]]]

[3] In Italian, the complementizer, the 'that' relative pronoun, and the 'what' interrogative pronoun coincide on *che*, yet *che* is excluded from free relatives, which are obligatorily introduced by the periphrasis *quello che* 'that which' (see Rugna 2022). This is presumably connected to the fact that in French, *que* 'that, which' cannot introduce embedded questions but must be replaced by *ce que* 'that which' (Sportiche 2011). Otherwise Italian free relatives are introduced by interrogative wh-pronouns, as in English (e.g. *chi* 'who' etc.). Florentine Italian has *icchè* (< *il che* 'the what'; see Greek *oti*) turning up as a free relative pronoun as well as an interrogative wh-pronoun.

Variations of these basic structures, take the wh-phrase to move to the external head position, or take the wh-pronoun to directly merge with C. We will not further elaborate here since our goal is to consider complement clauses and not to offer an account of free relatives.

Bresnan & Grimshaw (1978) discuss free relatives in comparison with embedded interrogatives for which English uses the same pronominal forms. Their analysis provides a structural distinction between the two, since the wh-phrase in free relatives is outside the clause in an NP argument (or XP adjunct) position, but it has moved to Spec,CP in embedded interrogatives. They further argue that free relatives distribute like NPs, APs, or like PPs, AdvPs when adjuncts (what they call 'category matching'), while wh-interrogatives distribute like sentences. In some languages like Greek or German for example, category matching goes along with case matching ('case attraction' in traditional grammars), i.e., the case of the relative pronoun is determined by the grammatical function the free relative clause assumes.

(15) Sinandisa *opjon* me simpaθi
met-1SG who.ACC me like-3SG
'I met whoever/the one that likes me'

In (15) the case of the free relative pronoun is that of the grammatical function the relative clause fulfills. In other words, it surfaces as accusative despite the fact the pronoun is (also) the subject of the relative clause and would be expected to bear nominative case (*opjos*).

Without getting into further details on free relatives,[4] let us focus on the fact that free relatives are either headed by the pronoun itself which merges with the selecting predicate or are disguised restrictive relatives modifying a null NP head. The aim is to see how these analyses can help us better understand complement clauses as (free) relatives. Let us start with the second approach, which takes free relatives to modify a null NP (DP). Translating this to complementation, we get a derivation where the complement clause modifies a null NP in the argument position of the selecting predicate. This is indeed the core of the analyses we have seen so far by Arsenijević (2009), Moulton (2009), and arguably Kayne (2010). However, this approach raises some problems.

The first problem concerns languages where the 'complementizer' in relative clauses is not necessarily the same as the one in complement clauses (and vice versa). English has the same element throughout, namely *that*. But even English has one more declarative complementizer, namely *how* (Legate 2010, Nye 2013, 2018). Nye (2013) shows that *how* relates to factivity (but unlike Greek *pu* it is not selected by factive emotive predicates) (example from Nye 2013: 122):

(16) a. She told me *how* she hadn't seen her husband for 3 months
b. John forgot *how* Mary was never late

If the above sentences were to reduce to a relative clause, we would have to make the *ad hoc* assumption that *how* qualifies as a relativizer in this context only due to the properties of the matrix predicate. Relativization though is not sensitive to verbal selection properties. The same point can be raised for Greek. As we saw, *pu* is the main relativizer in (non-)restrictive relative clauses, but its distribution in complement clauses excludes non-factive predicates. So once again we would have to assume that the null argument of non-factive predicates

[4] See van Riemsdijk (2006) for an overview; Gračanin-Yuksek (2008), who combines the two approaches by assuming that the wh-phrase externally merges but in Spec, CP; Cinque (2020), who extends the matching analysis to free relatives. For the different readings, see Jacobson (1995).

cannot be modified by a *pu*-relative but only by a clause introduced by *oti*. However, *oti* is excluded in (non-)restrictive relatives. The same reasoning can extend to other cases where there are more than one declarative complementizers. The problem can be summarized as follows: if complement clauses modify a (null) NP, why would certain pronominal complementizers only surface when the head NP is null? Why would complementizer choice be sensitive to selection by the verb?

Let us next consider the second approach to free relatives, the one that takes the pronoun to be externally merged. Translating this configuration to complement clauses, we can assume that the complementizer merges outside the clause it embeds, as is the case with the (relative) wh-pronoun. More precisely, the complementizer, being a pronominal, merges as the argument of the selecting predicate, and takes the embedded clause as its complement, roughly as in (17).

(17) I believe [that [this author published a monograph]]

The above structure can account for the selectional restrictions we mentioned above with respect to Greek, English, but also the Central and Southern Italian dialects. Unlike the headed relative clause analysis, where selection cannot be accounted for, since the predicate selects a 'light' noun, in (17), the predicate selects the pronominal complementizer. This is very close to the notion of 'category matching' of Bresnan & Grimshaw (1978). So, the prediction is that the pronoun that functions as a complementizer does not have to be the one found in relativization strategies. Indeed, Greek shows both patterns: *oti* and *pu* are found in relative clauses (free vs restrictive/non-restrictive), but *pos* is not. What the configuration in (17) shares with (14a) is the external merge of the pronoun, either as a free relative or as a 'complementizer'.

There is one relevant aspect addressed in the headed relative clause analysis of complement clauses and that has to do with the role of the complement clause as modifying an argument of the verb. Recall that in Moulton's analysis the complementizer is a predicate that mediates the modification of the CONTENT argument of the propositional attitude verb (as suggested by Kratzer 2006). Moulton (2015) points out that the predicative analysis of the *that*-clause (as in relatives) does not satisfy the semantic requirement of the verb for an individual as its argument. In order to solve this problem, he argues that the *that*-clause moves out of the VP, leaving a copy/trace which is converted to an individual *e* under Fox's (1999) Trace Conversion Rule.

(18) a. John believed that Mary had left
b. [$_{XP}$ [$_{CP}$ that Mary had left] X [$_{v/VP}$ believed [$_{CP}$ ~~that Mary had left~~]

In terms of our approach, since the pronominal complementizer merges as the argument of the selecting predicate, it saturates the CONTENT argument of the latter. We tentatively assume that this suffices to provide the *e* argument of the predicate. In other words, embedding via the pronominal complementizer converts the clause (proposition) to an individual entity.

How does the complementizer function differ from the relative/interrogative pronominal one? Manzini & Savoia (2003, 2011) argue that *che*, as an interrogative pronoun ranges over a set of individuals and binds an individual variable. On the other hand, *che* as a complementizer ranges over situations/possible worlds. Roberts & Roussou (2003) also draw the same distinction between demonstrative and complementizer *that*, arguing though that

this difference is due to grammaticalization from D to C.[5]

(19) a. [*che/oti* x [I do (x)]]
b. [*che/oti* x [x: I do this]]

So, the double behavior of these elements as 'complementizers' vs 'pronouns proper' can be accounted for. In (19a) the wh-phrase forms an A'-dependency, while this is not the case in (19b). It is then expected that there will be a contrast when extraction takes place out of a configuration that involves a wh-dependency as in (19a) as opposed to extraction out of a complement clause. More precisely, the former creates an island while the latter does not. A similar reasoning could extend to English *that*, which does not form an A'-dependency as a demonstrative (e.g., *that book*) or as a complementizer but can do so in *that*-relatives, i.e., *the book that you read*. If it functions as a relative pronoun (see van der Auwera 1985), then it can bind the variable inside the relative clause.[6]

The data we have considered so far show that the repertoire of complementizers draws on different types of pronouns. English makes use of the D-system in complementation, but also permits a wh-pronoun, as is the case with *how*. Greek also draws on the D-system in the case of *oti*, but allows for wh-pronouns as well, as is the case with *pos* and *pu*. Italian draws on the wh-pronoun system in relatives and complement clauses. Italian varieties split between pronouns that have wh-variants, and those that do not. What should be emphasized then is that there is no a priori restriction on the range of pronominal elements that can serve the complementizer function. At the same time, we expect that this variation may affect properties associated with complement clauses. In the next section, we turn to the implication of this account for treating complement clauses as nominals.

6.4 Complement clauses as nominals

The embedding of a clause under a complementizer is consistent with all approaches to clausal complementation. The difference then arises with respect to the nature of the complementizer and related to that, the form of embedding (complementation vs modification). Here we have argued for the view that complementizers are pronouns that merge as arguments of the selecting predicate and embed a clause. There is one additional difference regarding the position of the complementizer. In Bresnan's (1972) rule, the complementizer expands S (IP) to S' (CP). This has remained the basic idea in all approaches to clausal complementation, including cartographic ones with C splitting to Fin and Force. On the other hand, in early transformational grammar, complementizers were introduced transformationally externally to S. Specifically, Rosenbaum's (1967) analysis takes the complementizer to give rise to a configuration where the sentence (S/IP) is dominated by an NP (or DP in current terms). Our approach is closer to this latter view to the extent that we take complementizers to realize argument slots of the matrix predicate.

6.4.1 Complement clauses as DPs

Let us next consider what sort of categorial features complement clauses have. If what precedes is on the right track, complementizers are pronouns, and strictly speaking there is no category C, therefore complement clauses are projections of the pronouns that introduce

[5] Roussou (2020b) takes a different view and argues that there is no categorial reanalysis. Instead the complementizer function signals a scope change which goes along with ranging over situations/worlds.

[6] This option requires further elaboration depending on the analysis one assumes about relative clauses. Thus, in the raising analysis it is the head of the relative clause that moves and creates a gap. We leave this issue open.

them. Specifically, if pronouns are (pro)nominals, they project nominal phrases. To put it differently, they label the syntactic object they form, based on their nominal features. So, a complement clause headed by *that* is a *that*P, headed by *che* is a *che*P, etc. If pronouns are part of the broad Determiner category, the label is that of D (DP); this would clearly be the case for English *that* which belongs to the demonstrative series *th-* (*the, this, those, …*), as well as for German *daß* which also belongs to the *d*-series of pronouns (a general pattern in Germanic languages). If, on the other hand, we put interrogative/relative pronouns in the quantifier series (*modulo* their interrogative/relative function), then the label of the syntactic object they form is a QP (see Manzini & Savoia 2011, Manzini 2014). The relevant structures would be as in (20).

(20) a. [$_{DP}$ that [$_{XP}$ [$_{IP}$ did this]]
b. [$_{QP}$ che [$_{XP}$ [$_{IP}$ fai questo]]]
c. [$_{DP}$ oti [$_{XP}$ [$_{IP}$ ekana afto]]
d. [$_{QP}$ pos [$_{XP}$ [$_{IP}$ ekana afto]]

Nothing really hinges on the exact labeling, which is conventionally given in terms of categorial features, since in either case the complementizer is a pronoun. However, given the lexical differences, it is possible to find variation depending on the properties of these pronouns. For example, Poletto & Sanfelici (2021), who assume a matching relative clause analysis for complement clauses, argue that *che* is the external head (that is, it raises to the external head), while *daß* in German realizes the internal head. Although we follow a different view on complementation, we can in principle attribute at least some crosslinguistic differences to the varying properties of the pronominal complementizers.

Note that a parametric variation along the above lines is not as unorthodox as it may seem. That complementizers may carry different feature specifications is a background assumption in most approaches. Consider the split CP system of Rizzi (1997). As has been argued in the literature, some complementizers realize Fin, others Force, while others may realize either. Merging complementizers in different C heads reflects that not all of them share the same features, although they share the same function. To give a concrete example, the position of the complementizer in relation to topic and focus is taken as a diagnostic for its position in a higher (Force) or lower (Fin) position.

(21) Nomizo (avrio) *oti* (avrio) tha fiji
think-1SG (tomorrow) that (tomorrow) will leave-3SG
'I think (*tomorrow) *that*, tomorrow, John will leave'

As Rizzi (1997) argues *that* is in Force and may optionally realize Fin. For Greek we would have to assume the reverse, since topics can precede *oti* (Roussou 2000). In the standard articulated CP, this distribution is attributed to abstract features borne by the complementizers though with no reference to their morphological make-up.

Whether or not the distinction provided in (20) is viable remains to be tested empirically. The conceptual advantages it definitely has is that it refers to the morphological structure of the lexical items used as complementizers. Furthermore, it retains the properties these elements have as pure pronouns. This brings us to the next issue we need to consider. The complementizers *che* or *pos* (and *pu*) in Greek also have wh-variants (see (7a) and (9b-c)). The question then is how this wh-property is compatible with a non-interrogative, i.e., declarative, context. One solution, which we have already excluded, is to assume two distinct

items. The other solution is to assume that the interrogative wh-reading is not inherent to these pronouns.[7] In other words, these elements are construed as wh-phrases when in the scope of a +Q operator, or in more formal terms if they form an Agree relation with a +Q operator (see Manzini 2010, Roussou 2020a). This allows us to conclude that their status is that of indefinite pronouns which acquire a wh-quantificational reading, and specifically an interrogative reading, via +Q. In other words, wh-pronouns generally introduce a variable and in the context of a +Q operator the sentence containing this variable is read as a question. In fact, this is quite transparent in some Indo-European languages. For example, in Classical Greek the pronouns *tis* 'who' and *ti* 'what' are construed as either indefinites (hence enclitic) or interrogatives (quantificational, preposed) (on Classical Greek wh-clauses, see Faure 2021). The same holds for the Latin pronouns *quis* 'who' and *quod* 'what', but also 'anyone', 'anything' (e.g., in polarity contexts).

As already mentioned in section 2, the Modern Greek interrogative pronouns like *pjos* and *ti* form the basis for the formation of other pronouns, such as the free relative *o-pjos* /'opios/ and *o-ti*, the restrictive relative *o-pios /o*'pios/[8], all prefixed by *o-*, but also the existential quantifiers *ka-pjos* 'someone' and *ka-ti* 'something' with prefixation of *ka-*. These morphological formations hold for all members of the paradigms. This suggests that the *pjos* series serves as the lexical basis of morphological derivation and corresponds to an indefinite. This opens one more structural possibility, namely, to treat them as NPs with a null D head. For Italian (e.g., the complementizer) one would then have the structure in (22a), for Greek the structure in (22b).

(22) a. [$_{DP}$ [$_{NP}$ che [$_{XP}$ [$_{IP}$ fai questo]]]
b. [$_{DP}$ [$_{NP}$ pos [$_{XP}$ [$_{IP}$ ekana afto]]

The structure in (22) assigns a uniform label (D) to all elements that function as complementizers, attributing eventual differences to their internal syntactic structure as realizing D or only N.[9]

A related problem arises with the fact that as pronouns the elements under consideration may be sensitive to features like [+/-human], [manner], or [location]. For example, *how* just like *pos* in Greek are manner adverbials, a reading which they lack when they introduce declarative complements. Similarly, *pu* is a locative in interrogatives, but no such interpretation arises in interrogatives or relatives. The question then is how this reading is absent in the declarative complementizer function. Consider the examples with *pos* below.

(23)	Paratirisa	*pos*	jirizi	o	troxos
	noticed-1SG	how	spin-3SG	the	wheel

[7] This issue arises in all accounts that argue for a single pronoun/complementizer entry. Rinke & Aßman (2017) suggest that European Portuguese interrogative *que* checks a +Focus feature, while relative *que* checks a +Topic feature (the latter as in Bianchi 1999).

[8] The pronoun in (non-)restrictive relatives is obligatorily introduced by the by the agreeing article, e.g., *o o'pios* (masculine), *i o'pia* (feminine), *to o'pio* (neuter).

[9] An anonymous reviewer raises the interesting question what sort of implications this approach has for complement clause with respect to the differences in the distribution between NPs and wh-clauses, as in the following pair of sentences:

(i) I asked the time/ * I inquired the time.

(ii) I asked/inquired what time it was.

The contrast in (i) and (ii) is the classic distinction between c- and s-selection and relates to the distribution of wh-complements. This pattern requires a separate discussion of wh-clauses (addressed in Roussou & Vlachos (2023)).

'I noticed how the wheel spins'

(24) a. paratirisa [*pos* jirizi o troxos ~~pos~~]
b. paratirisa [*pos* [jirizi o troxos]

The sentence in (23) is ambiguous. It can mean either the way the wheel spins, or that the wheel spins. In the former reading it modifies the VP predicate *jirizi* 'spins', in the latter it introduces the proposition *jirizi o troxos* 'the wheel spins'. The same readings (can) arise in the English translation. Structurally, as a manner adverbial *pos* binds a copy (an individual variable) in the VP, as in (24a). Copies point to instances of internal merge, i.e., *pos* merges in the predicate of the embedded clause. On the other hand, as a complementizer it does not bind an individual variable in the VP, but it externally merges with the clause (proposition) it embeds, as in (24b). Note also that manner *pos* is stressed, while complementizer *pos* is not (see Roussou 2022). The generalization is that once a subclass of pronouns acquires the function of a complementizer (propositional operator), they retain their pronominal (wh-) status, but other properties that lexically distinguish them within their paradigm may not hold.[10]

6.4.2 A left periphery without C

The discussion that precedes treats complementizers as pronouns, and the clausal complement they head as embedded under a D/Q (or N) projection. The natural question is whether there is a C position at all. Given the above, the answer is negative. This though does not entail the absence of distinct positions that define the left periphery of the clause, i.e., heads/features that project above IP (TP). The comparative empirical evidence available supports the view the left periphery is active crosslinguistically.

Consider Rizzi's (1997) original proposal that C splits into two main heads: Force, i.e., the higher C, and Fin, i.e., the lower C. The same account allows for the projection Topic and Focus between these two heads, while complementizers proper can realize either C position subject to parametric variation. The cartographic framework has given rise to a very rich left periphery individuating heads according to features, thus recognizing an interrogative head, a modifying head, and other heads. Rizzi & Bocci (2017) give the following structure, for example (their (29)).

(25) [Force [Top∗ [Int [Top∗ [Foc [Top∗ [Mod [Top∗ [Q_{emb} [Fin [IP …]]]]]]]]]]

The representation in (25) is mainly given on the basis of Italian data but extends to other languages as well. Italian *che* realizes Force, as it precedes Topic and Focus. The Mod head

[10] This generalization can be seen in other forms. For example, the Italian relative (wh-) pronoun has both a direct and an oblique form, namely *che* and *cui* respectively. Relative pronoun *che* is also a complementizer, see (6) in the text. However, case marked *cui* is exclusively a relative pronoun, not found as a complementizer even under prepositions, see (i) vs (ii).

(i) La crisi dopo cui mi sono dimesso …
the crisis after which myself have-1s resigned
'The crisis after which I resigned …'

(ii) Dopo che mi sono dimesso ..
after that myself have-1s resigned
'After I resigned …'

On the one hand, we may note that interrogative 'what' is also not case inflected (Rugna 2022); on the other hand, we have yet another manifestation of the generalization in the text. These matters still await a systematic description and analysis.

is postulated for modifiers, that is adverbials which differ from topics (e.g., 'rapidly' in (26)). Finally, Q_{emb} is postulated as the position for wh-elements, which are preceded by topic and focus. Fin is the lower position in the C-field and is argued to be realized by prepositional complementizers, like *di* or *a* in Italian (see fn. 1):

(26) Rapidamente, i libri, li hanno rimessi a posto.
'Rapidly, the books, they put them back in place.'

Note that there is no C labeling, though the implicit idea is that all these positions form part of the C-field. With the exception of Force, and possibly Fin, all other projections involve a dependency between an operator/scope position and a variable inside the IP. To put it differently, they are positions targeted or associated with constituents within the IP.

That therefore leaves us with Force and Fin. If complementizers are pronouns that are external to the embedded clause, they cannot be realizations of Force/Fin. In what precedes, we reviewed *that*-type complementizers which are (mostly) identified with Force. With respect to *di* and *a* in Italian, we assume that they are just prepositions (see Manzini & Savoia 2018, Manzini & Roussou 2019). In other words, their subordinating function is that of introducing an 'oblique' argument. In the traditional CP approaches, C has also been the target of verb movement, as in (full and residual) V2 phenomena. Taking complementizers (pronouns and prepositions that is) out of the left periphery leaves us with the positions that are V-related, that is positions associated with modal or intensional properties of the clause (Manzini & Savoia 2011). Whether these should be called M (for Mood/Modal) or Int (for intensional) rather than Fin and Force is outside the scope of the present discussion. What is relevant though is that they are restricted to being realized by the main verb (as in imperatives), or by other verbal elements (auxiliaries, modals).

To summarize, the analysis of complementizers as pronouns has implications which affect the articulation of the left periphery. This approach has the advantage that it provides a unified analysis of pronouns as complements and furthermore of the left periphery as the projection of properties relating to the verb and its constituents. The next task then is to elaborate on this issue.

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