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Summary: This article explores the emergence and syntax of structures conveying speaker-oriented epistemic judgements involving an epistemic adverb and a complementiser in Catalan. Firstly, we show that in Modern Catalan this construction involves (i) an epistemic adverb located in a head related to the encoding of clausal modality within the left periphery, (ii) a silent truth predicate, and (iii) a clause headed by high *que* as the predicate's complement. Secondly, the emergence of the first 'epistemic adverb + complementiser' structures in Old Catalan is explored. This new analysis opens up questions regarding the evolution of 'epistemic adverb + complementiser' constructions in the Iberian Peninsula and the Romania, as well as the structure of the left periphery.

Keywords: epistemic modality, Catalan, grammaticalisation, modal adverbs, positive polarity ■

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1 Introduction¹

This article explores the emergence and syntax of structures conveying subjective judgements involving an epistemic or evidential adverbs and a complementiser in Catalan, as in (1):

(1) Segur que demà plourà.

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Following Cruschina (2015) and subsequent works, I will refer to these constructions as C-constructions.

C-constructions have been analysed in several Romance languages, including Modern Spanish (Etxepare, 1997; Demonte & Fernández Soriano, 2007, 2013; Villa-García, 2015; Gonzalez Manzano, 2018; Villa-García & Rodríguez González, 2020, among others), Old Spanish (Estellés, 2009; Rodríguez Molina, 2014; Kocher, 2017), Modern Italian and Modern Sicilian (Cruschina, 2015; Cruschina & Remberger, 2017), as well as Modern Romanian (Hill, 2007). In Modern Catalan, López & Morant (2002) or Mata (2007) touch upon them without discussing their syntax in depth and engaging with their diachrony respectively. While the encoding of modality by other means has been studied in Old Catalan (Sentí i Pons, 2010; 2013; 2017; 2019; Antolí Martínez, 2015; 2017, among others) to my knowledge this is the first study of the syntax of C-constructions and their diachrony in Catalan.

In this article I apply the Cartographic Programme (Rizzi, 1997, 2004) and assume Benincà's (2006) skeletton of the left periphery, which distinguishes three different fields specialised for hosting elements with different information structure values, apart from the functional projections Force and Finitude:

(2) Frame Force Topic Focus Finiteness [...

The Frame field anchors the speech act in regards to participants, location, and temporal deixis (Benincà & Poletto, 2004; Haegeman, 2012). Force is associated with illocutionary force and clause typing, followed by the Topic and Focus fields, connected to the encoding of topical and focal informational. At the right edge of the left periphery, Fin links the C and T layers and is connected with verbal finiteness and mood.

The article is organised as follows: in Section 2, I discuss the notion of epistemic modality in relation to Modern Catalan. In Section 3, by examining Modern Catalan data from a cartographic perspective, I establish that in this language, C-constructions do not involve an overtly realised Speech Act layer where the epistemic marker and the complementiser would be located, as proposed for other languages. Instead, the epistemic marker is shown to be located within the left periphery, in a head related to the encoding of clausal modality and relative polarity. I also demonstrate that the *que* occurring in these constructions heads an embedded clause with a fully-fledged left periphery and is located in ForceP, instead of overtly real-

ising one of the lower projections in the left periphery that can host this element. Based on this evidence, and the incompatibility of C-constructions with foci in the upper left periphery, it is concluded that in Modern Catalan, C-constructions occur in biclausal structures: a main clause with a silent truth predicate modified by the epistemic adverb in FocP, which takes an embedded clause headed by *que* as its complement:

(3) [FrameP [ForceP [TopicP [FocusP adverbi [ModP/PolP [ti]]FinP [\(\text{P} \) [TP [\text{truth} \\ \text{predicate}\] [VP [Force que [TopicP [FocusP [FinP [\(\text{P} \)] [TP [\)]...

In Section 4, I identify and describe the contexts in which Old Catalan epistemic-adverbs-to-be occur adjacent to *que*, providing environments in which C-constructions emerged, and I propose a grammaticalisation path for the emergence of C-constructions. The Old Catalan data used in this article has been exclusively extracted from *Corpus Informatitzat del Català Antic* (CICA) (Torruella, Pérez Saldanya & Martines, 2009) and is referenced following CICA's conventions.

Finally, in Section 5, I summarise the findings presented in this article.

2 Epistemic modality in Modern Catalan

Epistemic modality is used with different meanings in the literature. In this article, following Cruschina (2015) and Kocher (2017), I will assume that epistemic modality conveys a speaker's degree of certainty over the probability and possibility of the truth of a proposition (see Palmer, 2001; Aikhenvald, 2004; Cornillie, 2009 for more on the nature of epistemic modality). In the Romance languages, epistemic modality is mainly encoded through verbal categories (mood, person, aspect) and by means of adverbs. In this article, I assume Cinque's (1999) adverbial hierarchy, which proposes that certain adverbs are base-generated in the specifier position of functional heads found across the clausal spine. In this hierarchy, epistemic modality and evidentiality are shown to be encoded in separate functional heads:

(4) [frankly Mood speech act [fortunately Mood evaluative [allegedly Mood evidential [probably Mod epistemic [once T(past) [then T(future) [perhaps Mod irrealis [necessarily Mod necessity [possibly Mod possibility [... Asp ...

In the next section, I present the distributional properties of C-constructions in Modern Catalan.

■ 3 The cartography of C-constructions in Modern Catalan

In this section, I present the distribution of C-constructions in Modern Catalan and contrast it with analyses of C-constructions proposed for other Romance languages and show that they cannot account for the data at hand before proposing an analysis of C-constructions in Modern Catalan.

■ 3.1 The distribution of C-constructions in Modern Catalan

In Modern Catalan, C-constructions present the following distributional features:

- (I) They are a root clause phenomenon;
- (II) C-constructions cannot occur in out-of-the-blue contexts;
- (III) The element preceding que in C-constructions is an adverb;
- (IV) No element can occur between the adverb and the complementiser;
- (V) C-constructions can be preceded and followed by topics, but not foci;
- (VI) Epistemic C-constructions can be preceded, but not followed by evidential C-constructions;
- (VII) Epistemic C-constructions can be preceded and followed by other epistemic C-constructions;
- (VIII) C-constructions allow for extraction across them;
- (IX) Adverbs in C-constructions can act as positive answer particles;
- (X) Negation can be contained in the que clause;
- (XI) C-constructions appear within the scope of non-veridical environments.

In what follows, I illustrate each of these points. Based on the evidence presented, I propose that C-constructions have the syntactic structure shown in (5), whereby (i) the adverb or epistemic marker is generated in the specifier of a projection linked to the expression of epistemic modality, and, subsequently, undergoes movement to FocP in order to receive an emphatic reading, and (ii) the complementiser *que* heads a CP with a fully-fledged left periphery that contains an assertion independent from that of the main clause:

(5) [FrameP [ForceP [TopicP [FocusP Epistemic adverb_i [PolP [t_i] [FinP [ΣP [TP truth predicate-[VP [Force que [TopicP [FocusP [FinP [ΣP [TP [...]

■ I They are a root clause phenomenon:²

Recent studies of C-constructions in Spanish (Kocher, 2017), Italo-Romance (Cruschina, 2015; Cruschina & Remberger, 2017) and Romanian (Hill, 2007) describe this structure as a root clause phenomenon that occurs in main clauses and in embedded clauses with a fully-fledged left periphery, such as the complement clauses of verbs of saying and restrictive relative clauses. The same is true of C-constructions in Modern Catalan: they can occur both in main clauses and embedded clauses that allow root clause phenomena, as in (6), a main clause, and (7), the complement clause of a verb of saying, and (8), a restrictive relative clause.

- (6) **Segur que** demà plourà.
- (7) L'Arnau diu que **segur que** demà plourà.
- (8) (...) S'omplirà d'amics de la casa que **segur que** voldreu escoltar.

 Ajuntament de Barcelona (2020)

■ II C-constructions cannot occur in out-of-the-blue contexts:

It has been widely acknowledged in the literature (Rodríguez-Ramalle, 2003; Hernanz & Rigau, 2006; Hill, 2007; Demonte & Fernández Soriano, 2013; Cruschina & Remberger, 2017; Kocher, 2017; Villa-García & González Rodríguez, 2020) that C-constructions cannot occur in out-of-the-blue contexts. This follows naturally from the fact that only new information provided in these sentences is the speaker's degree of confidence over the probability and possibility of the truth of the proposition embedded under que, which is necessarily part of discourse and the common ground, be it overtly or covertly (Rigau, 2004; Demonte & Fernández Soriano, 2013). This is illustrated in (9) and (10):

- (9) A: Què passa?
 - B: *Segur que les pomes li agraden.
- (10) A: Saps si li agraden les pomes?
 - B: Les pomes **segur que** li agraden, les peres no.

² All features listed here for epistemic markers are valid for epistemic markers that originate from deadjectival adverbs, such as segur, epistemic markers of adverbial origin, such as segurament and segurament. In the interest of space, examples illustrating this parallelism are not provided.

■ III The element preceding *que* in C-constructions is an adverb

Cruschina (2015: 13, 2017) states that epistemic adverbs that have been grammaticalised into epistemic markers reject modification due to their increased functional character. This is not the case in Modern Catalan, where the semantics of the adverb determine its ability to be modified. Epistemic and evidential adverbs express different degrees of speaker commitment towards the truth value of the clause. When they express an absolute degree of confidence towards the truth of the content of the clause headed by *que*, they cannot be modified by degree adverbs, as in (11), while when they express a certain degree of certainty, but not absolute, as in (12), they can:³

- (11) *Molt naturalment que demà plourà.
- (12) Doncs molt probablement que tots tres emeten so gironí.

Puig (2011)

These adverbs have epistemic and evidential semantics and are directly generated in the left periphery. If they were base generated in a lower projection and then fronted, they should be able to appear postverbally (in the VP) with the same semantics. However, this is not the case:

- (13) No camina segurament.
- (14) Segurament que camina.

As we can see in (13), when the adverb occurs postverbally, it acts as a manner adverb that describes the action of the verb instead of expressing speaker attitude, as in (14).

Furthermore, adverbs occurring in C-constructions cannot be morphologically negated or occur within the scope of negation (López & Morant, 2002: 1841), as epistemic markers are endowed with positive polarity value (Ernst, 2009), while manner adverbs with *-ment*, such as *segurament*, can, as shown in (13). We will revisit this idea in point (XI).

³ Other adverbs that accept modification include segur, segurament, certament and probablement, among others.

■ IV No element can occur between the epistemic marker and the complementiser:

No element can ever intervene between the epistemic marker and its complement clause introduced by *que*, making clauses like (15) ungrammatical:

- (15) *Segur demà que plourà.
- V C-constructions can be preceded by topics, but not foci:

C-constructions can be preceded and followed by Clitic Left Dislocated (ClLD) elements, as shown in (16a-b):

- (16) a. [A la festa]_i, **segur que** hi_i anirem.
 - b. Segur que, [a la festa]i, hii anirem

Hanging Topics (HT), however, can only precede the C-constructions, but not follow them. Villalba (2000) describes HTs as a main clause phenomenon that is not even possible in complement clauses of bridge verbs, which have otherwise been reported to exhibit root phenomena:

- (17) a. [La Maria]i, segur que ara parlaran d'[ella]i.
 - b. *Segur que, [la Maria]i, ara parlaran d'[ella]i.

Moving on to foci, it is worth noting that in Modern Catalan only two types of foci can occur in the left periphery: contrastive foci and fronted elements that elicit *verum* focus interpretations.⁴ Fronted elements eliciting *verum* focus can follow but not precede C-constructions,⁵ while contrastive foci are incompatible with them. This is illustrated in (18–19):

- (18) Verum focus
 - A: Vols dir que hi trobarem algú, a la rambla?
 - B: Segur que ALGÚ hi trobarem, a la rambla.

⁴ Note that Vanrell Bosch & Fernández Soriano (2013) report that in some Balearic dialects, information focus can be encoded in the left periphery.

⁵ Speakers provide varying judgements of clauses containing C-constructions and contrastive foci. In my current speaker sample (10 speakers), speakers from Barcelona (4) are the most accepting of contrastive foci co-occurring with C-constructions, while Girona speakers (6) deem them less grammatical. I have decided to rely on my native intuitions for this article, leaving an exhaustive study of variation in the Modern Catalan left periphery for the future.

B_i: *ALGÚ **segur que** hi trobarem, a la rambla.

Adapted from Quer (2002: 156, 25a)

(19) Contrastive focus

A: Vols dir que s'ha comprat un cotxe? Estava convençuda que volia una moto.

B: ??/* Segur que UN COTXE s'ha comprat, i no una moto.

B_i: ??/*UN COTXE **segur que** s'ha comprat i no una moto.

Additionally, *només*, a particle that can focalise TP phrases as well as DPs by preceding them and singling them out of all possibilities present or elicited in a context, can occur within the *que*-clause, but cannot precede the C-construction:

(20) **Segur que** <u>només</u> pots pensar en arribar a casa i estar calentet...

Fourteen Restaurant (2018)

(21) *Només en arribar a casa segur que pots pensar.

In addition, C-constructions are incompatible with *wh*-words that request new information:

- (22) *Quan segur que vindrà?
- (23) *Què segur que vol?
- (24) A: Vol pomes.
 - B: ??Què segur que vol?

When *wh*-words precede the adverb, they yield an ungrammatical sentence, as in (22) and (23), or a marginally acceptable sentence if the *wh*-word refers to a d-linked entity instead of requiring new information, as in (24).

■ VI Epistemic C-constructions can be preceded and followed by other epistemic C-constructions:

Epistemic C-constructions can be followed by other epistemic C-constructions:

(25) (...) **segurament que segur que** vaig equivocat jo, perquè estic una mica nerviós sobre aquesta moció Subirana Álvarez (2012)

In cases like (25), each C-construction constitutes a different illocutionary act that introduces a new assertion where the speaker's attitude towards the content of the proposition contained in the *que* clause is expressed.

With segurament que the speaker asserts that they are more or less certain that they must be wrong, while with segur que the speaker asserts that they are certain to be wrong. The C-construction predicates something of the que clause and is the only element introducing new content to the discourse: the speaker's attitude.⁶

■ VIII C-constructions allow for extraction across them:

Modern Catalan possesses different *que* entries in the lexicon that realise different heads in the left periphery, linked to different syntactic properties (González i Planas, 2014). High *que*, located in ForceP, allows for extraction and bound variable reconstruction across it. Lower instances of *que* (located below ForceP), however, induce island effects for extraction (López, 2009; Villa-García, 2015: 107). C-constructions present a high *que* and therefore, extracted XPs to the left of *que* are acceptable, as in (26). (27) contains a low *que*, for comparison:

(26) Al seu fill_{i/j}, segur que tots_i l' han deixat fora.

Possible readings:

- a. Certainly everyone has left their son outside.
- b. Certainly everyone has left Joan's son outside.
- (27) Al seu fill*i/j, que totsi el deixin fora.

Possible readings:

- a. Let everyone leave Joan's son outside.
- b. Let everyone leave their son outside.
- 6 Epistemic C-constructions can be preceded, but not followed, by evidential C-constructions. Cinque's (1999) adverbial hierarchy distinguishes two functional heads for the categories of evidentiality and epistemic modality. In it, evidential adverbs are identified as being located immediately above epistemic ones. Modern Catalan data confirms this hierarchy: evidential C-constructions can precede epistemic C-constructions, as shown in (i) and (ii), but cannot follow them:
 - (i) Evidentment que segur que hi ha altres factors que venen de més enrere, però [...]. Cortada (2019)
 - (ii) M'encanta el formatge i per descomptat que **segur que** m'agradaria aquesta tarta.

 Bosch Negre (2021)

The nature of this constraint falls outside the scope of this article, as it probably goes beyond the syntactic domain. Given that Cinque (1999) proposes the existence of both a head related to evidentiality and another related epistemicity, but the relative order of evidential and epistemic C-constructions is established across different clauses and each adverb is located in a different left periphery, as shown in Section 3.3. This will be left for future research.

In (26), *que* from the C-constructions does not act as a barrier for reference reconstruction of the possessive *seu*: it can either refer to a 3rd person, that we have called Joan in the example, or it can refer to *tots* 'everyone'. In contrast, in (27) the only possible reconstructible reference for the possessive is a 3rd person, whom we will call Joan, and not *tots* 'everybody'.

Furthermore, high *que* is found in other constructions that echo or reproduce content that has already been introduced in the discourse. Demonte & Soriano (2013: 58–59) propose that *que*, beyond marking a clause's illocutionary force as declarative, in specific contexts, can also signpost it as belonging to the common ground. This would be the case in C-constructions as well as in clauses that directly repeat content that has been introduced in the common ground, referred to as echoic *que* in the literature:

(28) Moment A: —Quan arriba?

Moment B: —Que quan arriba (que no m'has sentit?)

Adapted from Demonte / Fernández Soriano (2013: 55, example 19)

■ IX Epistemic adverbs can act as positive answer particles:

All epistemic markers that can occur within a C-constructions can also act as positive answer particles.⁷ They provide a positive answer to a question while also expressing the speaker's degree of certainty over the probability or possibility of the truthfulness of the question's content:

(29) A: Plourà, demà?

B: Segurament.

(30) A: Ho ha pintat vostè?

B: Cert, però no té cap valor.

diccionaris.cat (2021)

In (29), speaker A asks whether tomorrow it will rain or not, and speaker B replies that they are certain that it will rain. They do so by using the adverb segur on its own, standing in lieu of the whole clause, that is, in lieu of repeating the question's proposition. In (30), an excerpt from a dialogue, speaker B answers speaker A's question using cert. Again, it occurs on its own standing in lieu of a repetition of the proposition contained in the

⁷ Different terminology is used in the literature to refer to answer particles. Rodríguez-Molina (2014) uses the term sentential proform, while Holmberg (2015) uses the term answer particles and Wiltschko (2021) response markers, among other terms.

question. In this case, the adverb is coordinated by the adversative copulative conjunction *però* 'but'. Therefore, (29–30) show that epistemic adverbs can be used to answer to yes/no questions, express agreement with previous statements and stand in place of a full clause.⁸

X Negation can be contained in the *que* clause:

Epistemic adverbs are positive polarity items, and as such, they cannot cooccur with negative polarity items within the same clause. However, negative polarity items, such as the negator *no* and the negative pronoun *ningú* 'no one/anyone' can occur within the *que* clause, showing that the polarity of the *que* clause is independent from that of the main clause, where the epistemic marker is contained. This is shown in (31–34):

(31) Crec que **segur que** no puntua.

carloscatas (2016)

- (32) *No crec que segur que puntua.
- (33) Segur que ningú s'imagina un món sense elefants (...)

Facebook TV3 (2016)

- (34) *Ningú **segur que** s'imagina un món sense elefants (...)
- XI C-constructions appear within the scope of non-veridical environments:

As positive polarity items, the appearance of epistemtic adverbs is linked to non-veridical contexts (Giannakidou, 1998, 1999, 2001, 2011; Giannakidou & Alda, 2021). Non veridical contexts elicit all readings of a proposition, positive and negative. They include non-declarative clauses (interrogative, imperative, exclamative), negative clauses, protases of conditional constructions, and non-veridical implicatures, among others (Giannakidou, 1998). By using a positive polarity item such as an epistemic adverb, the speaker cancels out negative readings of a proposition and selects the positive reading as the correct one:

- (35) "Si això fos un partit de futbol, **segur que** no hem arribat a la mitja part". TV3 (2020)
- (36) "**Segurament que** no votaria independència, però ha de decidir la majoria". Redacció Vilaweb (2011)

⁸ Holmberg (2015) explores and describes the syntax of answer particles, showing that they are full CPs with an elided complement that value polarity features. Other analyses of answer particles include Merchant (2001, 2018) and Wiltschko (2021).

In (35), the licensing context for the appearance of the epistemic adverb followed is the preceding protasis, while in (36), it is the implicit question 'what would you vote in a referendum on Catalonia's independence?'. In most cases, epistemic adverbs are used responding to non-veridical implicatures derived from the discourse to cancel a negative interpretation of the proposition occurring under the scope of the adverb.

Summing up, in Modern Catalan, C-constructions are a root clause phenomenon that can also occur in complement clauses of bridge verbs; epistemic adverbs can be modified depending on their semantics (whether they express absolute certainty over the content of the proposition or only a partial degree of certainty); nothing may intervene between the adverb and the complement clause (they have to be adjacent), CILD topics can precede the epistemic marker and follow the complementiser but HTs may only precede the C-construction. Verum and exclusion focus particles with scope over a constituent are compatible with the C-construction but can only follow the complementiser; epistemic C-constructions can be preceded by evidential C-constructions but not followed by them and can be preceded and followed by other epistemic C-constructions; extraction is allowed across C-constructions embedded in complement and restrictive relative clauses; due to them being positive polarity items, epistemic adverbs can be used as positive answer particles and cannot occur within the scope of negation; and finally, C-constructions occur within the scope of non-veridical contexts be them overt or covertly implied in the discourse. An analysis of C-constructions in Modern Catalan needs to account for all these features. In what follows I sketch existing analyses of C-constructions in other Romance languages and confront them to the Catalan data.

■ 3.2 Analyses of C-constructions in other Romance languages

In the literature we find analyses that describe C-constructions as monoclausal structures. Hill (2007) and Cruschina (2015) propose, for Romanian and Italian respectively, that the epistemic adverb is found in the Speech Act layer (Speas & Tenny, 2003) which takes a CP as its complement, while Kocher (2017) proposes that the epistemic adverb is located in the specifier of ModifierP (Rizzi, 2004) and *que* in its head. Additionally, Poletto & Zanuttini (2013) proposed a biclausal analysis of constructions

involving a polarity item (positive or negative) and *the* in Italian. Here, we review these analyses further.

Cruschina (2015) follows Hill (2007) in assuming that the epistemic adverb (which he refers to as *marker* after arguing that it no longer possesses the distributional attributes of an adverb) is in the Speech Act layer (Speas & Tenny, 2003), above ForceP. This layer hosts several functional projections where discourse-related roles are mapped onto the syntax. Epistemic adverbs are directly merged in a head position within the Speech Act layer to encode the speaker's attitude towards the proposition. *Que*, in turn, is merged in ForceP, heading the clause that acts as a complement of the epistemic marker, as shown in (37):

(37) [AboutnessTopic [SAP [SentienceP epistemic marker [ForceP que [FamiliarTopic [FocP [TP ...]]]] Adapted from Cruschina & Remberger (2017)

This analysis cannot be applied to Modern Catalan for several reasons. Firstly, Modern Catalan C-constructions can be preceded by CILD which are assumed to occur in projections below ForceP (Rizzi, 2004; Benincà, 2006). This should not be possible if the epistemic adverb were in the Speech Act Layer. Secondly, they can occur in embedded contexts (complement, restrictive relative clauses and certain adverbial clauses), which would not be expected under this analysis. Additionally, C-constructions can be followed by other C-constructions, impossible under this analysis given that this would imply the existence of a Speech Act layer under ForceP, which would, in turn, take a CP as its complement.

Kocher (2017) proposes an analysis of C-constructions for Old and Modern Spanish. This author rejects the possibility of the epistemic adverb occurring in the Speech Act layer as the Spanish data also displays left peripheral elements such as HTs and ClLDs preceding C-constructions, and they can also occur in embedded contexts. Instead, Kocher proposes that in Spanish C-constructions, the epistemic adverb is located within the left periphery, base-generated in Mod(ifier)P, a head related to the encoding of sentential modality (Rizzi, 2004), while *que* would be base-generated in FinP before moving to the head of ModP:

(38) [ForceP...[ModP [cierto/claro/...][ModP [ModO que; ... [FinP t; [IP...]]]]]]]

Adapted from Kocher (2017: 101, example 47)

According to Kocher, FinP is associated with marking a clause as part of the common ground. *Que* being merged in this projection would thus explain the impossibility of clauses containing C-constructions presenting content that has not been previously introduced in the discourse.

There are two reasons why this analysis is not suitable for Catalan. Firstly, as shown in (16–17), ClLD topics can both precede and follow the epistemic marker + que cluster, which would not be expected if que were in FinP. Secondly, this configuration does not allow foci occurring below que, but as we have seen in (18–24), this is possible in Catalan. Finally, in Catalan a C-construction can be followed by another C-construction, as illustrated in (25). This is not possible within Kocher's proposal, as she locates que in FinP, which makes it impossible for dislocated material to occur below the que projection.

I will briefly consider a further analysis that was proposed for polar response Italian polarity markers followed by *que* and could potentially be applied to C-constructions: Poletto & Zanuttini (2013).

Poletto & Zanuttini (2013) propose an analysis for the answer particles sì 'yes' and no 'no' + che in Italian which includes a silent copy of the utterance that is being positively or negatively asserted in the che clause in the left periphery:

In their biclausal analysis, the response marker is postulated to be base-generated in the higher clause and connected to the lower clause, introduced by *che*, by a silent operator, thus requiring the polarity of the upper and lower clause to be the same. This cannot accommodate Catalan data, where the epistemic adverb is a positive polarity item that cannot occur within the scope of negation, but negative polarity items can occur within the embedded clause. A further issue that we find in this analysis is the lack of specification of what is the content of the upper clause's TP: is it coindexed with the lower clause, with the copy of the trigger clause in the left periphery, or is it empty? Further specification is required, as answer particles (be them polar, epistemic, or evidential) are necessarily adjacent to *que/che* both in Catalan and Italian, an unlikely adjacency if the presence of a TP projection and all the projections that follow below is assumed. Therefore, this analysis cannot be applied to Catalan data.

■ 3.3 An analysis of C-constructions in Modern Catalan

In this section, I build an analysis of C-constructions in Modern Catalan based on the data presented.

In order to allow for topics to both precede and follow C-constructions it is necessary for *que* to be located in ForceP and for the epistemic adverb to occur in its own left periphery. This is backed up by the fact that *que* in C-constructions allows for extraction across it. Since we know that only high *que* (that is, *que* located in ForceP) permits this, we can establish that *que* in C-constructions occurs in ForceP. If *que* is in ForceP, it is just natural that it can be followed by elements that occupy projections in the left periphery such as CILD topics and contrastive Foci, as well as other C-constructions.

This analysis also requires the adverb to occur in its own, fully-fledged left periphery with a Speech Act layer which can host HTs. In order to account for this and avoid the pitfalls of Poletto & Zanuttini's analysis, which does not explain the adjacency between the adverb and *que* and proposes that a polarity operator binds both clauses (something that cannot hold for Catalan as the polarity in both clauses need not match as shown in point (IX)), I propose the presence of a silent truth predicate, located in TP, taking a CP as its complement:

(40) Simplified interim structure:

[Upper Clause XP Epistemic adverb Truth predicate VP Force que ...

The upper clause constitutes a separate assertion from the one contained in the CP: the assertion contained in the upper clause conveys the degree of commitment of the speaker towards the truth value of the assertion contained in the CP, already present in the common ground (Krifka, 2014: 64). The existence of this predicate is supported by diachronic evidence presented in Section 4, where it is suggested that it is a personal predicate (i.e., 'I consider true'), given the subject-oriented reading of C-constructions, 9 as well as by the evidence supporting the presence of two left

⁹ Cruschina & Remberger (2017) discard the possibility of there being a silent predicate in the construction by establishing that epistemic adverbs have, in fact, further grammaticalised into epistemic markers and cannot modify a silent predicate. Nevertheless, I have shown in example (12) that in Catalan, whether they can be modified is dependent on their semantics.

peripheries: a higher one, preceded by a Frame field capable of hosting HTs, and a lower one, headed by *que* in ForceP.

Where exactly is the epistemic adverb located in the left periphery of the truth predicate? I propose that the adverb is base-generated in a polarity related head in the left periphery and then moves to FocP. Epistemic adverbs are positive polarity items that occur within the scope of non-veridical contexts by choosing a positive reading and discarding negative ones of an utterance that is already present in the discourse and they can also act as positive answer particles. Holmberg (2015: 52–53) describes the syntax of polar answer particles used to answer yes/no questions, such as 'yes' or 'no', as involving the valuation of a polarity feature in a Polarity Phrase (PolP), located above TP. The feature is valued by the base generation of the positive particle, which then moves to FocP to receive an emphatic reading. Then, the complement of FocP, which echoes the content of the direct question or assertion with which the answer agrees or disagrees, is elided, resulting in the particle standing on its own. This is illustrated in (41):

(41) a. Question: [CP do [TP you [±Pol] want tea]]

Paraphrase: 'What is the value of [±Pol] such that "you [±Pol] want tea" is true?

Adapted from Holmberg (2015: 53, fig. 1)

- b. Affirmative answer: 'yes' + PolP elision

 [CP [FocP yesi [Foc] [PolP [DP 1] [Pol [+Pol] [TP want tea]]]]]

 Adapted from Holmberg (2015: 53, fig. 2)
- c. Negative answer: 'no'+ PolP elision

 [CP [FocP noi [Foc' [Foc] [PolP]] [PolP [-Pol] [TP want tea]]]]]

 Pujol i Campeny (2019: 7)

In Pujol i Campeny (2019), I follow Martins (2013) in distinguishing two types of polarity features: relative polarity features, by which the speaker expresses agreement or disagreement in relation to the previous discourse (Farkas & Bruce, 2010), and absolute polarity features, which simply value a clause as positive or negative (Laka, 1990). This is illustrated in (42):

(42) [ForceP [TopP [FocP [PolP Relative polarity [TopP [FinP [ΣP absolute polarity [IP [VP · · ·

Relative polarity features require the existence of previous discourse: they cannot be overtly realised in out-of-the-blue, broad focus contexts because they rely on previous discourse content. Positive polarity elements and answer particles that occur in this projection, like epistemic adverbs occurring in C-constructions, require the content of the proposition in which they appear to be present in the discourse, explicitly or implicitly, as they provide new information: the degree of commitment of the speaker over the proposition's content. As shown in (41b), Holmberg (2015) posits that the answer particle undergoes Pol-to-Foc movement. C-constructions do not yield fully grammatical readings when Foci precede the cluster. This is indicative that, like answer particles, the epistemic adverb raises from its base-generated projection to FocP to receive a contrastive reading, excluding non-positive readings of the utterance. This accounts for three of the distributional features pointed out above: the inability of Foci preceding Cconstructions, as FocP is already occupied by the epistemic adverb, the possibility for C-constructions to be preceded by topics, and the ability of epistemic adverbs to be used as positive answer particles. 10

Therefore, C-constructions present us with a biclausal structure where the epistemic adverb appears within the left periphery of a higher clause, where it is base-generated, and *que* introduces the clause that contains the proposition over which the epistemic adverb has scope and that, in its turn, contains its own PolP and Σ P. This explains why it is possible for the lower clause to present a C-construction, why the lower clause can contain negative polarity items, and why the epistemic adverb cannot be presumed to be generated in the lower clause and moved to the left periphery of the upper clause, as this would co-index the polarity values of both clauses (as proposed in Poletto & Zanuttini [2013]).

The epistemic adverb is base-generated in SpecPolP, a projection that can be assimilated to ModalityP as presented by Kocher (2017) or AssertiveP (Villa-García & González Rodríguez, 2020a), as all these projections have been described as connecting the content of the clause to the wider

¹⁰ It may be that ModP and PolP are in fact the same head: a head connecting the clause with the wider discourse by conveying speaker stance over the proposition's content.

discourse and hosting elements with modal semantics.¹¹ It then moves from its based-generated position to FocP in order to receive a focal reading. Unlike in unmarked declarative clauses, which are accorded a non-emphatic degree of commitment towards the truh value of the proposition conveyed in them merely by being asserted (Krifka, 2014), in C-constructions the degree of speaker's commitment towards the truth of the clause is made explicit. The degree of speaker commitment is the only piece of new information provided in the construction, as the *que* clause's content must be entirely contained in the common ground.

The postulation of a silent predicate is based on diachronic data that I review in the following section.

■ 4 The emergence of C-constructions in Old Catalan

In this section, I explore how manner adverbs underwent grammaticalisation and became epistemic markers, showing how their diachrony supports the analysis proposed in example (44) above.

C-constructions are attested in CICA from the second half of the 13th century, with the adverbs *cert*, *segur* and *segurament*.¹² The context in which these adverbs become associated with the expression of epistemic modality is within the scope of predicates with epistemic semantics. Table 1 shows the frequency in which *cert*, *segur*, and *segurament* modify a predicate with modal semantics¹³ vs. other types of predicates and contexts:¹⁴

¹¹ The description of the precise nature of this projection from a crosslinguistic perspective as well as the most suitable label for it is left for future research.

¹² Whether the adverbial use of these adverbs is derived from Latin deadjectival adverbs marked with -E, such as CERTE, or it is connected to the masculine singular form, CERTUS, falls outside the scope of this article.

¹³ Amongst them we find verbs of belief (*creure* 'to belief'), verbs of thought (*pensar* 'to think'), verbs of perception with an epistemic entry in the lexicon (*reure* 'to see, to realise').

¹⁴ These include adjacency to comparative clauses headed by *que*, adjectival uses of *cert* and *segur* that happen to be adjacent to *que* and *cert* and *segur* modifying predicates with non-epistemic semantics.

	13B	14A	14B	15A	15B	16A	16B	17A	17B	18A
Cert with predicates with modal semantics	24	56	17	48	100	30	51	3	_	1
Cert in other contexts	7	8	3	6	5	1	1	_	_	_
Segur with predicates with modal semantics	3	1	5	6	7	_	1	_	1	_
Segur in other contexts	1	3	3	1	10	2	3	_	_	_
Segurament with predicates with modal semantics	1	1	_					_		
Segurament in other contexts	1		1	2	1					_

Table 1. Frequency of *cert* and *segur* occur adjacent to *que* (data from CICA, 13th B to 18th century A)

Table 1 clearly shows that *cert* and *segur* occur adjacent to *que* modifying predicates with modal semantics considerably more frequently than in any other configuration.¹⁵ Examples (44–46) illustrate the use of these adverbs as modifiers of verbs with modal semantics in Old Catalan:

(44) a. e sabia molt **cert que** en tota la dita terra (...)

Vita Christi, p. 9, l. 23, 15th century B

b. sabent molt **cert** la bondat del dit Tort, (...)

Corts generals de Montsó, p. 694, l. 41, 16th century B

(45) mas de açò viu **segur que** no seré may alegra (...)

Decameró, Part 1, p. 241, l. 6, 15th century A

(46) Cert ensenyes que has pocha conciència envers Déu, (...)

Dotzè Llibre del Crestià, s. 15th century B, l. 130.14

¹⁵ This use is still active in Modern Catalan, as in (i):

⁽i) Sé segur que demà plourà. know-1sG sure that tomorrow rain-3sG.FUT 'I know for sure that it will rain tomorrow'.

In (44) we see how the adverb cert, 16 homograph (and presumably homophonous) with the masculine singular adjective cert, is indeed an adverb and not a predicative adjective of the complement clause of the verb saber 'to know' in (44a) as it does not agree with the object complement of the predicate when it is a feminine singular DP (44b). This example specifically dispels the possibility of C-constructions underlyingly being copular constructions, as agreement between the adverb (in the copular construction adjective) and the que clause would be expected.¹⁷ Instead, the adverb modifies the verb of the upper clause, and as expected for an adverb, is invariable. In both (44a) and 44b) the adverb appears postverbally, in its based-generated position, as it specifies the way in which the speaker knows something: with certainty. The same holds for (45), where segur describes the manner in which the subject understood (one of the lexicon entries of the verb to see in Catalan) the fact that she would never be happy. In (46), cert modifies the verb ensenyar 'to show'. However, in this case it has been fronted to the left periphery from its postverbal (VP) based-generated projection, yielding a verum focus reading of the clause.

Diachronically, Kocher (2017) takes fronted adverbs with *verum* focus readings as the origin of C-constructions in Old Spanish. According to this author, C-constructions piggy bag on *si que* constructions, where the element preceding the *que* clause is the positive answer particle *si*. Si would be base-generated in MoodP in the left periphery, while, once epistemic adverbs enter the construction, they would be base-generated in the ModalityP, as we have seen in Section 3.2. While I agree with Kocher (2017) that fronting with *verum* focus reading is at the origins of C-constructions, in the case of Catalan, C-constructions precede the emergence of *si que*, and while *si* had been grammaticalised as a positive polarity item by the 13th century (Pujol i Campeny, 2019) by undergoing fronting with a *verum* focus reading, the grammaticalisation path differed from that of modal

¹⁶ See Suñer & Di Tullio (2014) for a thorough analysis of the syntax of adjectives seemingly used as adverbs. These authors argue that bare adjectives occur in a DP with a noun cognate of the verb and modified by the adjective that acts as direct object and is eventually incorporated into the predicate, triggering default morphological values to surface (masculine singular). With the noun's incorporation, the adjective remains as the predicate's manner adjunct. This analysis is possibly also valid for Old Catalan but in the interest of space this discussion will be left to future research.

¹⁷ Hummel (2012: 374), in his study of epistemic adverbs, also discards copular constructions as the origin of C-constructions. Instead, he proposes that they are the result of their wider use in the discourse.

adverbs in that it did not involve modal predicates, but any predicate within the scope of a nonveridical operator. Not only is the origin of modal C-constructions different from that of C-constructions in Old Spanish, but also the syntactic structure. Firstly, Old Catalan data does not allow for *que* to be in FinP, as fronted adverbs (triggering *verum* focus) and scene setters can occur below *que*, as in (47) and (48) respectively:

- (47) **Segurament que** AXÍ és veritat, (...)
 - Crònica de Ramon Muntaner, Ch. 80, 14th century B
- (48) Tu às molt que loar a Déu com tal cars t'és saguit, per lo qual ú n'és eixit, et viu;
 - (...) **segur que** si adormit fosses, al primer son te aguera mort aquex fat bacallar barbut que tu às vist (...).

Decameró (1 part), p. 116, l. 6, 15th century A

Secondly, the same elements that can precede C-constructions in Modern Catalan can precede C-constructions in Old Catalan:

- (49) Et con aquesta sentència ajats donada, **segurament que** (...) los altres senyors del món, de crestians, (...) se n'estaran (...).
 - Crònica de Ramon Muntaner, Fol. 44rb, l. 21, 14th century A
- (50) Vostre trobar, **cert que** mereix tal avantatge, que sou principi del llinatge dels suprens mestres (...)

Disputa de viudes i donzelles, l. 691, 16th century B

In (49), an embedded adverbial clause acting as a Scene Setter precedes the C-construction. In (50), we find a left dislocated subject acting as an aboutness topic (Frascarelli & Hinterhölzl, 2007), which shows us that extraction is possible across the C-construction (if we take the subject to be a CILD and not a based-generated HT).

Based on the evidence presented in Table 1 and the observations made above, I propose that the context in which the manner adverbs examined here acquired epistemic semantics was within the scope of predicates endowed with them. If we assume this to be the case, it is just natural that the *que* that occurs in C-constructions is located in ForceP, as it heads the complement clause of a bridge verb with epistemic semantics.

Therefore, we know that from the beginning, C-constructions involve a high que. This is self-explanatory if we postulate the presence of a silent

assertive speaker-oriented predicate in the left periphery of the clause containing the epistemic or evidential adverb.

Cert was already used as an answer particle by the second half of the 13th century:

(51) maravelà·sse molt e dix: **-Cert**, a mi pesa molt com lo Rey Karles ha axí desamparada la terra (...)

Crònica de Desclot, 13th century B

Therefore, *cert* is already associated with the expression of strong speaker commitment¹⁸ towards a proposition by the second half of the 13th century, before it being attested in C-constructions in the written record. Another adverb that became associated with positive polarity during the 13th century was si.¹⁹ Kocher (2017) proposes that in Spanish, C-constructions with epistemic and evidential adverbs emerged after si que is established. However, this is not possible for Catalan, as si que is not attested until the second half of the 16th century. Instead, *cert* and *segur* grammaticalise as epistemic adverbs by being fronted to yield *verum* focus with predicates associated to epistemic semantics, as shown in (52), preproduced here for the reader's convenience:

- (52) a. Cert ensenyes que has pocha conciència envers Déu, (...)
 - b. [ForceP [TopicP [FocusP **cert**_i [ModP/PolP [t_i] [FinP [ΣP [TP ensenyes [VP [AdvP t_i [Force que [TopicP [FocusP [FinP [ΣP [TP [...

Dotzè Llibre del Crestià, 15th century B, l. 130.14

In (52b) we see how *cert* undergoes fronting after being base-generated as a manner adverb describing the predicate *ensenyar* 'to show, make explicit', with evidential and epistemic semantics (one cannot demonstrate some-

¹⁸ Referred to as 'emphatic positive polarity' in Batllori & Hernanz (2013) and Pujol i Campeny (2019).

¹⁹ Si was first used as an emphatic positive polarity particle within the scope of non-veridical operators to then be grammaticalised as an answer particle (Batllori & Hernanz, 2013; Pujol i Campeny, 2019). Like the adverbs in C-constructions, si initially underwent focus fronting to the left periphery before being grammaticalised as an emphatic positive polarity marker and being directly based-generated in ModP/PolP (Pujol i Campeny, 2019). We do not discuss hoc (a further positive answer particle found in Old Catalan) here because it differs significantly from the epistemic adverbs that concern us here, as well as the positive answer particle si in origin (it derives from a neuter demonstrative) and distribution. See Pujol i Campeny (2020) for more on the matter.

thing without having knowledge of it). According to Suñer & Di Tullio (2014: n. 9), fronting to the left periphery of manner adverbs is a necessary step towards their grammaticalisation as answer particles with modal semantics, as the adverb conveys the speaker's attitude towards the assertion. This configuration provides the basis for the emergence of the structure that, according to Cruschina & Remberger (2017: 99), is diachronically necessary for the development of C-constructions:

(53) $[P_{rP} [S_{pec}P_{rP} Adverb] [P_{r'} [P_{r''} [true]] [CP ...]$

The structure in (53) presupposes the existence of a truth predicate that takes the CP as its argument and that is modified by the adverb, focussed. They argue that as soon as a speaker-oriented meaning arises, the adverb moves to the Speech Act Layer, where it modifies the CP headed by *que*. At this point, the adverb grammaticalises into an epistemic adverb, and can no longer be modified, and the biclausal structure outlined in (53) undergoes reanalysis and C-constructions become monoclausal units. While this holds for Italian data that does not allow for topical material to precede C-constructions or for them to occur in embedded contexts, it does not in Catalan, as we have seen in Section 3.2. It can be hypothesised that epistemic adverbs in Catalan have not gone through this last phase of grammaticalisation, as the speaker-oriented reading is not yet associated to a projection above ForceP but derived through the presence of a null truth predicate that is compulsorily indexed with the speaker.²⁰

So far, we have established that (i) manner adverbs occurring in C-constructions acquired modal semantics by occurring within the scope of modal predicates; (ii) that these adverbs were fronted to the left periphery to trigger *verum* focus, where they were grammaticalised as epistemic adverbs; and (iii) that C-constructions have been associated with a diachronic phase where a silent truth predicate would connect the adverb and the *que* clause.

With this in mind, I propose the three steps outlined in (54–57) for the emergence of C-construction in Catalan:

²⁰ A comparative study of C-constructions in Old and Modern Romance will have to confirm this hypothesis, but the contrast between Italian data and the Catalan data presented here suggests that it is in the right track.

(54) Stage 1: Cert/segur as manner adverbs modifying a predicate with modal semantics

[FrameP [ForceP [TopicP [FocusP [ModP/PolP [FinP [\Sigma P [TP Verb with modal semantics [VP [AdvP cert [Force que [TopicP [FocusP [FinP [\Sigma P [Tr] ...]

As we have seen in (44–46), in Stage 1, *cert* and *segur* merely describe the action of a predicate with modal semantics, such as *saber* 'to know' or *ensenyar* 'to show'. In Old and Modern Catalan, manner adverbs occur in postverbal position, within the VP.

(55) Stage 2: *Cert/segur* fronted

[FrameP [ForceP [TopicP [FocusP certi [ModP/PolP [ti] [FinP [ΣP [TP Verb with modal semantics [VP [AdvP ti [Force que [TopicP [FocusP [FinP [ΣP [TP]...]]]]]]

Cert and segur are fronted to the left periphery of the epistemic verb's clause, within the scope of nonveridical operators as is the case with all focus fronting configurations triggering verum focus. Verum focus expresses a high degree of truth commitment of the speaker towards the truth value of the clause, i.e., epistemicity. By virtue of being fronted in order to express epistemicity and by being associated with predicates that express modality (epistemic or evidential), cert and segur acquire modal semantics. Therefore, they shift category within the adverbial part of speech, and, instead of being base-generated within the VP, they are base-generated in a head linked to the expression of modality in the left periphery: ModalityP or PolarityP, depending on the analyses. They are subsequently fronted to FocP in order to put emphasis on the speaker's degree of commitment to the truth value of the complement clause.

(56) Stage 3: Cert/segur as modal adverbs

[FrameP [ForceP [TopicP [FocusP certi [ModP/PolP [ti] [FinP [ΣΡ [TP [Predicate with epistemic semantics]]] [VP [Force que [TopicP [FocusP [FinP [ΣΡ [TP [...]]]]]]]

By the 14th century, the adverb is perceived as carrying the modal semantics of the construction, the predicate can be elided, and we find the first C-constructions at surface level, which contain two assertions: the fact that something is held true, and the content of the CP clause, which asserts content already present in the common ground.

By the 16th century, other adverbs, such as si, start entering the C-construction paradigm, as it is no longer associated with a particular predi-

cate being elided, but with the expression of epistemicity involving an elided truth predicate. Modern Catalan remains at this stage, where we find an upper and lower clause with two fully-fledged left peripheries and two illocutionary acts:

(57) Stage 4: C-Constructions

[FrameP [ForceP [TopicP [FocusP adverbi [ModP/PolP [ti] [FinP [\Delta P [truth predicate]] [VP [Force que [TopicP [FocusP [FinP [\Delta P [TP [...]]]]]]]

In Modern Italian and Romanian, the C-constructions present a monoclausal structure, where adverbs no longer accept modification, and can no longer occur in embedded contexts: they have been grammaticalised as epistemic markers (Cruschina, 2015), and the biclausal structure shown in Stage 4, example (57), is reanalysed as that of (58).

(58) Stage 5: Adverbs in C-constructions grammaticalised as epistemic markers: Italian (Cruschina, 2015; Cruschina & Remberger, 2017) [SAP [SpecSAP adverb [SAO Ø [SA]] [CP ...

In (58) the construction has been reanalysed as a monoclausal structure where the epistemic marker occurs in the SAP above the CP headed by que.

5 Conclusions

In this article, we have explored the syntax of C-constructions and their origin in Catalan. It has been established that in Modern Catalan, unlike in Modern Italian or Modern Romanian, C-constructions present a biclausal structure: the epistemic adverb, indeed an adverb that can or not be modified depending on its semantics, appears in the upper clause, together with a silent truth predicate that takes a CP as its complement. The CP, headed by a high *que* located in Force, contains information that is already present in the common ground, while the adverb in the upper clause conveys new information: the degree to which the speaker commits to the truth value of the complement of the silent truth predicate.

These constructions originate from the use of manner adverbs (in the case of Catalan, cert, segur and segurament) as modifiers of verbs with modal semantics that take a clause headed by que as their complement. Through a process of grammaticalisation connected to a fronting operation linked to verum foci readings, the manner adverbs acquire modal semantics and start

being base-generated in the left periphery in a projection linked to the expression of polarity and modality, which connects a clause with the wider discourse. Further investigation on the nature of this projection, which seems to exist across the Romance languages, is required in order to understand its attributes and functions. By the 14th century, the new epistemic adverbs are perceived as sufficient to convey speaker commitment, and the verb with epistemic semantics that they modify can be elided, creating a linear C-construction. By the 16th century, the adverbs are no longer associated to a specific set of predicates, but to the expression of epistemicity, and therefore, they simply modify a silent truth predicate that takes a CP as its complement, required to justify the adjacency between the adverb and the que clause. It is at this point that other adverbs start entering the paradigm and C-constructions become the productive means of expression of modality that they are in Modern Catalan. It is suggested that Modern Italian and Modern Romanian epistemic adverbs have undergone further upward grammaticalisation (Roberts & Roussou, 2003), becoming epistemic markers, and the C-construction has been reanalysed as a monoclausal structure where the adverb sits in the Speech Act Layer above ForceP. Further comparative work is required to understand better the emergence of C-construction across the Romance languages and their syntax in order to establish whether they have a common origin. Additionally, more research is needed to understand the relative order between evidential C-constructions and epistemic ones.

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