

Verb movement in Florentine: the case of complementizer deletion under a parametric approach



Received: 22-08-23

Accepted: 19-10-23

Published: 15-01-24

How to cite: Isolani, Elena. 2023. Verb movement in Florentine: the case of complementizer deletion under a parametric approach. *Isogloss. Open Journal of Romance Linguistics* 10(1)/1, 1-34.

DOI: <https://doi.org/10.5565/rev/isogloss.369>

Abstract

Complementizer deletion (CD) in Italo-Romance varieties branches off in two different pathways: CD1, present in standard Italian with a bridge selecting verb and an irrealis embedded verb and CD2, available in Florentine and associated with a bridge or non-bridge selecting verb and a realis or irrealis embedded verb, but with an optional clitic element intervening between the main and the embedded verb. The traditional account unifies CD1 and CD2 claiming that they both represent the alternate checker of the overt complementizer: in CD1, the embedded verb moved to Fin° checks the relevant features, in CD2, the intervening element moved to Force° does the same. This article rests on the assumption that the alternative checking hypothesis is operative when the complementizer is omitted but proposes a different analysis for CD2. Some empirical evidence based on the order of the embedded verb and other left-peripheral elements will be provided to show that the embedded verb moves to ForceP . The analysis is framed within the Parametric Comparison Method, a comparative tool aimed at defining the parameters which regulate phenomena that operate in a specific syntactic domain (CP) and their functional implications.

Keywords: complementizer deletion, parameters, complementizer phrase, parametric implication, alternative checking hypothesis.

1. Introduction

Italo-Romance varieties manifest (at least) two types of declarative complementizer deletion, called CD1 and CD2 for the sake of convenience (Cocchi & Poletto 2002, 2007). Whereas the former features a bridge selecting verb and an unrealis embedded verb (1a), the latter is characterized by greater flexibility, being grammatical with both bridge and non-bridge selecting verbs and with both realis and unrealis embedded verbs (1b).

(1) a. Standard Italian

Credo (che) verrà.
believe.PRS.IND.1SG (that) will come.FUT.IND.3SG
'I believe (that) it will be interesting to listen to him'

b. Florentine

Mi dispiace (che) un ha
me.IO.1SG= be-sorry.PRS.IND.3SG (that) not has
portato nulla.
brought anything
'I am sorry (that) he did not bring anything'

It is well known that standard Italian only licenses CD1, whereas CD2 can be found in some Italo-Romance varieties like Florentine. The traditional account of CD1 and CD2 attempts to unify them under the alternative checking hypothesis (Zanuttini 1997, Obenauer 2001) whereby the relevant feature is checked either by a declarative complementizer base-generated in CP or by the movement of an element from the IP to the same CP position. Accordingly, what distinguishes CD1 and CD2 is, first, the final position of the movement, it being FinP and ForceP respectively and, second, the element moving to CP, being the embedded verb for CD1 and a clitic element intervening between the main and the embedded verb for CD2. The structures of CD1 and CD2 are reported below in (2b) and (3b) respectively:

(2) a. [IP Credo [CP [FinP [Fin° che] [IP [TP verrà...]]]]]]
b. [IP Credo [CP [FinP [Fin° verrà] [IP [TP **verrà**...]]]]]]

(3) a. [IP Mi dispiace [CP [ForceP [Force° che] [IP [NegP [Neg° un] [TP ha
[VP portato nulla]]]]]]]
b. [IP Mi dispiace [CP [ForceP [Force° un] [IP [NegP [Neg° **un**] [TP ha
[VP portato nulla]]]]]]]

From this featural account, two questions naturally arise: 1) whether it is correct to assume that the clitic element moves in CD2 structures and whether 2) an implication between the occurrence of CD1 and CD2 can be established. As for the first research question, it will be first addressed by revising the existing literature on CD1 and CD2 pointing out the major flaws in the argumentation that require further investigation. In particular, the main inconsistency of the proposal that CD2 is an instance of clitic-movement to CP rests on the optionality of this element, which makes it unsuitable to be main tenet of the whole derivation. Therefore, a different analysis

will be assumed that predicts verbal movement to a high CP projection, presumably ForceP, in CD2 contexts. Regarding the second research question, the implicational relation between CD1 and CD2 will be scrutinized under the parametric lens by applying the Parametric Comparison Method and, hence, by drawing a list of parameters that can describe the status of complementizer deletion in different languages. Therefore, the purpose of this paper is twofold: it aims to revise Cocchi & Poletto's (2002, 2007) proposals on CD2, showing that it is not the result of clitic movement, but given the optionality of the clitic, it stems from the raising to ForceP of the embedded verbal constituent. Grounding on this empirical evidence, this study intends to offer an alternative view of complementizer deletion relying on some innovative theoretical background, namely the Parametric Comparison Method, to predict the parametric implications capable of accounting for the different patterns of distribution that take place cross-linguistically.

This article is structured as follows: §2 begins with an overview of the theoretical background surrounding complementizer deletion; §3 contains an alternative analysis of the realization of CD2 based on the movement of the verb to ForceP and provides some solid argument in support of this hypothesis; §4 introduces the Parametric Comparison Method and shows how it can be proved adequate for the analysis of CD1 and CD2. §5 aims to draw the conclusion of this study and to advance further paths of research.

2. Complementizer Deletion

The goal of the present section is to revise the literature on complementizer deletion to highlight both the major predictions and the main aspects that require a reanalysis. In the first place, CD1 will be introduced referring to two opposite positions: the first, advanced by Poletto (1995), resting on verb movement to CP and the second, proposed by Giorgi & Pianesi (1997, 2004a), relying on syncretic category. Albeit this article does not intend to focus specifically on CD1, Poletto's (1995) view will be prioritized over Giorgi & Pianesi's (1997, 20004a) theory as it permits to introduce the phenomenon of CD2. The second part of this section will be, indeed dedicated to report the current theories on CD2 in Florentine (Cocchi & Poletto 2002, 2007) which result unsatisfactory to account for this phenomenon. The main reason why both proposals are deficient relies on the optionality of the clitic-intervening element in CD2 which, in turn, cannot be labelled as the main character in the whole derivation.

2.1. Theoretical Background on CD1

The possibility of dropping the complementizer in standard Italian has been extensively discussed in the last forty years. In his analysis on complementizer deletion, Rizzi (1982) paralleled the omission of the complementizer to Aux-to-Comp structures. Scorretti (1981) endorsed the view that complementizer deletion is the result of the selection of the IP, rather than of the CP, based primarily on Old Italian data in which this phenomenon was remarkably widespread. However, the main contributions on complementizer deletion went in another direction, trying to define some empirical patterns that can predict the distribution of the declarative

complementizer and the factors that may affect its omission (Poletto 1995, Giorgi & Pianesi 1997, 2004a, Cocchi & Poletto 2002, Giorgi 2010).

Poletto (1995) observed that complementizer deletion is available in standard Italian if some specific conditions are satisfied: (a) the embedded verb must bear [-realis] features, meaning that it must be inflected for subjunctive, future or conditional, (b) the embedded clause cannot be left-dislocated and (c) the main verb needs to belong to a special class:

(4) Standard Italian

Credo	(che) sia	già partito
believe.PRS.IND.1SG	(that) be.PRS.SBJV.3SG	already left
'I believe (that) he has already left'		

In (4), the main verb belongs to the class of *bridge verbs*; this verb class was first introduced by Vikner (1994) to classify the matrix verbs that are eligible to select V2 in the embedded clause in those languages that do not generalize embedded V2, like German or Danish. According to Poletto (1995), as bridge verbs can select V2 in Germanic languages, they can also select an empty complementizer in standard Italian. This analogy between Germanic languages and standard Italian leads to a further comparison involving verb movement. Since bridge verbs are intrinsically characterized by their capability of attracting the embedded verb to a low CP position in Germanic languages, they show the same attraction property in standard Italian (Poletto 1995). Therefore, since CD1 is triggered by bridge verbs, it requires verb movement to FinP on a par with Germanic languages. Specifically, in CD1 contexts, the bridge verb selects a [-realis] feature that can be realized either by the declarative complementizer or by the embedded verb moved to the lowest CP projection, Fin°. The embedded verb works as an alternative checker of the complementizer, being capable of checking the relevant feature akin to the complementizer itself.

Giorgi & Pianesi (1997, 2004a) treated CD1 disagreeing with Poletto (1995)'s proposal on verb movement to a special CP position like Fin°¹. In the first place, they argued against v-to-Fin hypothesis by rejecting the comparison with Germanic languages drawn by Poletto (1995). They argued that the analogy between Germanic and standard Italian is only marginal since the verbs that trigger V2 in Germanic solely belong to the bridge class (Vikner 1994), whereas verbs that allow for CD1 in standard Italian primarily belong to the bridge class, but instances of non-bridge verbs can also be found. Therefore, the assumption that in standard Italian the verb moves to CP in the same vein as in V2 languages, based mainly on the selecting verb (pseudo-)symmetry is too simplistic. Giorgi & Pianesi (1997, 2004a) thoroughly described the properties of CD1 in standard Italian and concluded that the only possible account must rely on the different realization of the relevant features. Specifically, CD phenomenon is due to some precise subjunctive mood properties realising a “syncretic category [...] projecting the agreement and the mood features” (Giorgi & Pianesi 1997: 239). Therefore, the sentence in (5a) with CD1 has the structure in (5b):

¹ Giorgi & Pianesi (1997, 2004a) assume that in standard Italian the verb always raises to AgrP where subject-verb agreement takes place, independently from whether complementizer drop takes place.

(5) (SI, Giorgi & Pianesi 2004a: 199)

a. Mario credeva fosse malata
 Mario believed be.PST.SBJV.3SG ill.FEM.SG
 ‘Mario believed she was ill’

b. [... [v credeva [Mood/Agr fosse ...]]]

When CD1 takes place like in (5), the subjunctive mood on the embedded verb is syncretic, meaning that it lexicalizes both the canonical modal feature and an Agreement-Subject feature. On the other hand, the overtness of the declarative complementizer permits a split in the realization of these features as *che* (“that”) encodes [mood] feature and the embedded verb bears the [AgrS] features.

Poletto (1995) and Giorgi & Pianesi (1997, 2004a) hold a divergent view on the realization of complementizer deletion in standard Italian. Even though the present analysis does not intend to focus specifically on CD1, but on the relation between the occurrence of CD1 and other forms of complementizer deletion, like CD2, it comes naturally to envisage that only Poletto’s (1995) analysis leaves space for alternative instances of complementizer drop. As a matter of fact, she upholds the view that there exists more than one position where the declarative complementizer can appear; as a result, these heads can be alternatively checked by elements encoding complementary features, which vary according to the verbal morphology of the embedded clause. On the other hand, Giorgi & Pianesi (1997) firmly claim that complementizer deletion is only possible with subjunctive morphology as indicative morphology is incapable of encoding modal features. Therefore, complementizer deletion is ruled out when the embedded verb is inflected for indicative because the verb cannot function as a syncretic category checking simultaneously AgrS features and modal features. Modal features remain encoded on the declarative complementizer which must overtly appear. Such an analysis, thus, does not permit to investigate the case of complementizer deletion with indicative morphology even further and, as such, it results incompatible with the CD2 phenomenon in Florentine.

2.2 On the contexts with CD

Before introducing complementizer drop in Florentine, it is necessary to clarify the exact definition of bridge and non-bridge verbs (Vikner 1994) adopted here. Specifically, it seems that whether there is a general agreement among scholars on the irrealis vs. realis property on the embedded verb that distinguishes complementizer omission in standard Italian and Florentine respectively, the main verb distinction is significantly more blurred. As already mentioned in §2.1, when dealing with CD there is a tendency to refer to the notion of bridge and non-bridge verbs advanced by Vikner (1994) to account for embedded V2 in several Germanic languages. The full list proposed by Vikner and reported by Giorgi and Pianesi (1997) can be found below:

(6) Bridge Verbs

andeußen (to hint), *angeben* (to indicate), *antworten* (to answer), *behaupten* (to claim), *berichten* (to report), *betonen* (to emphasize), *entscheiden* (to decide),

erfahren (to learn), *sich erinnern* (to remember), *feststellen* (to ascertain), *finden* (to think), *glauben* (to believe), *hoffen* (to hope), *meinen* (to mean), *sagen* (to say), *sehen* (to see), *vermuten* (to assume), *wissen* (to know).

(7) Non-bridge Verbs

edauern (to be sorry), *bestätigen* (to confirm), *bereuen* (to regret), *beweisen* (to prove), *bezweifeln* (to doubt), *darum bitten* (to ask for), *daran denken* (to think of), *erklären* (to explain), *erlauben* (to permit), *geheim halten* (to keep secret), *gern haben* (to be happy), *hassen* (to hate), *übersehen* (to overlook), *überzeugen* (to convince), *vergeben* (to forgive), *verlagern* (to demand), *verschweigen* (to conceal), *zeigen* (to show), *zugeben* (to admit)

Complementizer deletion in Standard Italian primarily coincides with bridge verbs, however also few non-bridge verbs are compatible with complementizer drop, for instance *dubitare/mettere in dubbio* (to doubt) (8a) and, for some speakers, *dispiacersi* (to be sorry) (8b):

(8) Standard Italian

a.	Dubito	(che)	non ci	sia
	doubt.PRS.IND.1SG	(that)	not there	be.PRS.SBJV.3SG
	niente	da	rivedere	
	nothing	to	check	
	'I doubt (that) there is nothing to check'			
b.	Mi	dispiace	non	venga
	me.IO.1SG=	be-sorry.PRS.IND.3SG	not	come.PRS.SBJV.3SG
	'I am sorry she doesn't come'			

Moreover, as mentioned by Poletto (1995) complementizer drop in standard Italian is also compatible after certain adjectives (9a) and nouns (9b):

(9) Standard Italian

a.	Sono certo/sicuro/convinto	sia	andata
	am certain/sure/convined	be.PRS.SBJV.3SG	gone
	bene		
	well		
	'I am certain/sure/convined it went well'		
b.	La probabilità sia	andata bene è	
	the probability be.PRS.SBJV.3SG	gone well is	
	molto bassa		
	very low		
	'The probability it went well is very low'		

Therefore, Poletto's (1995) analysis on CD1, which parallel complementizer drop in standard Italian with embedded V2 in German due to the same selecting verbs, needs to be revised. Verbs selecting CD1 are not restricted to the bridge class, but also few other verbs are admitted. This indicates that, although CD1 in standard Italian and embedded V2 are both classified as instances verbal movement to FinP, this cannot be reduced to the same analysis. Verb movement in CD1 does not depend on the fact that

the same verbs selecting an empty complementizer also select V2 but is the outcome of the proper pattern of main and embedded verbs that allows complementizer drop with the resulting verb movement.

As for Florentine, the inventory of main verbs of the non-bridge class selecting an empty complementizer contains at least the following items: *accorgersi* (to realize), *ammettere* (to admit) *chiedere* (to ask for) *confermare* (to confirm), *giurare* (to swear), *notare* (to notice), *permettere* (to permit), *richiedere* (to demand), *spiegare* (to explain), *tenere a mente* (to think of). These verbs can be compatible with either subjunctive or indicative (or both) embedded verb and the combination of main and subordinate predicates provokes complementizer omission and the subsequent verb raising to high functional projection (see §3).

In the present analysis, the terms and the concepts of bridge and non-bridge verbs will be retained, but the list of verbs included in these sets will be revised with respect to intrinsic property of the language under analysis, recognizing that it might slightly diverge from the set of verbs adopted by Vikner (1994) to account for Germanic embedded V2. However, the fundamental aspect of the analysis is that complementizer deletion and the subsequent verb movement does not simply depend on the class of the selecting verbs, but on the specific pattern of main and embedded verb as will be more deeply investigated in §4.

2.3 An overview CD2

Shifting now the attention to Italo-Romance varieties and to Florentine in particular, the situation concerning complementizer drop is significantly different. Cocchi & Poletto (2002) observed that Florentine licenses two types of complementizer deletion: the first, which functions exactly as in standard Italian, and the second, which has some different properties, being constituted by more patterns of main and embedded verbs. In a manner akin to Cocchi & Poletto (2002), we will denominate the first instance of complementizer drop as CD1 and the second as CD2. CD2 is not available in standard Italian and is characterized by a greater flexibility with respect to the class and the inflectional form of the verbs involved. First, contrary to CD1, where only few non-bridge verbs can select an empty complementizer, the adoption of non-bridge verbs is more widespread in CD2 (as seen in §2.2). The second property characterising CD2 is the inflection of the embedded verb, which is not restricted to the irrealis mood, but also inflectional forms bearing [+realis] feature, like the indicative, are grammatical:

(10) Florentine

Mi	dispiace	un	tu	vieni
me.IO.1SG=	be-sorry.PRS.IND.3SG	not	you.SBJ.2SG=	come
stasera				
tonight				
‘I am sorry you don’t come tonight’				

The main constraint affecting CD2 according to Cocchi & Poletto (2002, 2007) is that a clitic-like element must intervene between the main and the embedded verb. The element in question can either be a clitic pronoun of any type (subject, object, partitive, locative, reflexive) like in (11a), a preverbal negator (10) or an auxiliary (11b):

(11) Florentine

a. Mi dispiace tu vieni
 me.IO.1SG= be-sorry you.SBJ.2SG= come
 da-solo
 alone
 'I am sorry you come alone'

b. Mi dispiace hai fatto
 me.IO.1SG= be-sorry have.PRS.IND.2SG done
 tutto da-solo
 everything alone
 'I am sorry you have done everything alone'

Whereas Cocchi & Poletto (2002) firmly relied on the presence of the clitic-like element to account for the entire set of operations involved, the obligatoriness of the clitic will be strongly rejected in the following sections predicting, hence, that the core of the derivation must be found in some other elements.

To sum up, Cocchi & Poletto (2002) distinguished between CD1 and CD2 whereby the former is licensed in standard Italian and Florentine, while the latter only in Florentine. Whereas the former is characterized by the main verb of (primarily) the bridge verb class and the embedded verb inflected for an irrealis mood, the latter displays more patterns of variation, being grammatical also when the main verb belongs to the non-bridge verb class and when the embedded verb appears in the realis mood. Nonetheless, Cocchi & Poletto (2002) claimed that CD2 is licensed only if a clitic-like element intervenes between the main and the embedded verb. In the following sub-sections, two hypotheses on the realization of CD2 will be reviewed (Cocchi & Poletto 2002, 2007), clarifying their predictions and their flaws in the analysis which a new proposal on complementizer deletion stems from.

2.4 The alternative checking hypothesis

Cocchi & Poletto (2002, 2007) attempted to unify CD1 and CD2 under the "Alternative Checking Hypothesis" (Zanuttini 1997, Obenauer 2001, Cocchi & Poletto 2002). As in CD1 context, the embedded verb works as an alternative checker of the overt complementizer by moving to FinP, where the complementizer would be expected to appear, a comparable operation takes place in CD2 context. According to Cocchi & Poletto (2002, 2007), CD2 is also an instance of "alternative checking": in this regard, they offered two distinct views, the first still resting on movement operation and the second grounding in checking without raising. The main goal of this section is to concisely present both and show that neither of them proves adequate to account for CD2. Indeed, they both count on the existence of a clitic-like intervening element between the main and the embedded verb which, eventually, result being optional.

The first "Alternative Checking" hypothesis for CD2 (Cocchi & Poletto 2002) parallel the one for CD1 but strikingly differs from it as the feature involved is not

associated with a low CP projection, but with a higher CP position, ForceP² and the raising element is not the embedded verb but the clitic element; clitic, negators and auxiliaries are all part of the inflectional morphology, and this allows them to properly check the relevant feature in Force³. Therefore, according to this hypothesis, CD2 displays alternative checking as the clitic-like element intervening between the main and the embedded verb moves to Force^o where it checks declarative features, being, as such, in complementary distribution with an overt complementizer (see (2) and (3) for the structure of the left-periphery of CD1 and CD2).

This alternative checking has been revised in Cocchi & Poletto (2007). Whereas CD1 has been treated in the same vein, CD2 has not been addressed in terms of movement of the clitic element from the embedded IP to the embedded CP like in the previous study. Indeed, differently from their earlier analysis where the intervening clitic-like element was claimed to be obligatory as it served as the alternative checker of the declarative complementizer, this new study suggests that “*che*-deletion is [...] strongly favoured when an element of the following classes is present: a) preverbal subject or object clitic, b) the preverbal negative morpheme, c) an auxiliary” (Cocchi & Poletto 2007: 52). Since the obligatoriness of the intervening clitic is ruled out, the omission of the declarative complementizer cannot be strictly due to the raising of the clitic in the position where the complementizer is expected. Therefore, Cocchi & Poletto (2007) casted the hypothesis that the alternative checking in CD2 takes place via the operation Agree, without any resort to movement of the clitic-like element (12b):

(12) Standard Italian

- a. [ForceP [Force^o che] [IP [I^o porta] ...[VP]]]
that bring.PRS.IND.3SG
‘that it brings’
- b. [ForceP [Force^o Ø] [IP [I^o lo porta] ...[VP]]]
it.OBJ.CL.3SG.M brings.PRS.IND.3SG
‘it brings it’

In (12b), the Force^o probes the position headed by the object clitic *lo* (“it”), which is endowed with an appropriate set of features that make it compensate for the lack of complementizer.

In the remainder of this article, both hypotheses will be rejected resting first on the too vague definition of clitic provided by Cocchi & Poletto (2002, 2007) and second on the optionality of the clitic.

² The main argument in favor of a different higher projection for the realization of CD2 relies on the observation that only in CD1 contexts can the embedded verb be preceded by a preverbal subject.

³ As pointed out by Cocchi & Poletto (2002), whereas there is a homogenous agreement on the inflectional nature of auxiliaries and negators, the problem arises when clitics are involved. Clitics are, indeed, traditionally classified as nominal elements, being part of the argumental structure of the verb; however, more recent studies tend to connect clitics to the inflectional morphology of the arguments, being endowed with inflectional features such as person and number (Sportiche 1996, Manzini & Savoia 1998, 1999, Cocchi 1999, Poletto 2000, Cocchi & Poletto 2002).

2.5 Against the clitic-driven theories

The main contradictory aspect of both Cocchi & Poletto (2002, 2007)'s proposal relies on the nature and status of the clitic-like element. In the first place, Cocchi & Poletto (2002) refer to the nature of the clitic element as an inflectional element capable of checking the relevant declarative feature in Force° and group within this set clitics of any type, preverbal negators and auxiliaries. In Cocchi & Poletto (2007), these clitics are recognized as functional heads endowed with a distinct set of features: subject and object clitic bear argumental features, whereas negative morphemes and auxiliary encode declarative features. This distribution, however, does not satisfactorily explain why one or the other set of features are activated in different structures. Also, reflexive, locative or partitive clitics are not included in the final list of potential interveners (Cocchi & Poletto 2007), even though they are compatible with complementizer drop in the same vein as subject or object clitics. It is, hence, possible to conclude that this broad view of clitic does not result flawless and the choice of clustering together different elements under a single label and a single function is not convincing. If this was the case, there should be evidence of other phenomena that can all be triggered by clitics of different nature. Moreover, if auxiliaries and negators were clitics akin to typical pronominal subject/object clitic, they should be subject to the main restrictions of canonical clitics and this should occur in both embedded and main clauses. In this analysis, the unified account of clitic element will be abandoned; actually, the question of whether pronominal clitics, negators and auxiliaries are all clitics of the same kind will be overlooked. On the other hand, the optionality of these elements will be emphasized, showing that they cannot be the core of the whole argumentation. Indeed, obligatory status of the clitic-like element is called into question in this article, showing that it is rather optional and, therefore, cannot be the main character in the derivation.

Whether the irrelevance of negative morphemes or auxiliaries can be easily attested in Florentine, pronominal clitics of the subject type pose a more serious problem in that they are obligatory. Hence, they always precede the embedded verb, regardless of the drop of the complementizer. Therefore, it is reasonable to seek comparable data that can reveal the optionality of pronominal clitics in other Tuscan varieties that manifest complementizer deletion on a par with Florentine, but that do not license subject clitics, like Pisano. Pisano shows a similar pattern of distribution of CD2 to Florentine⁴, but any type of intervening element must appear for the structure to be well-formed:

(13) Pisano

- a. Ha detto scrive un libro
has said writes a book
'He has said that he writes a book'
- b. Mi dispiace prenda brutti
me.IO.1SG= be-sorry.PRS.IND.3SG get.PRS.SBJV.3SG bad
voti
marks
'I am sorry he always gets some bad marks'

⁴

A more detailed description of the constraints of CD2 in Pisano will be described in §4.

c.	?Mi	dispiace	prende	brutti
	me.IO.1SG=	be-sorry.PRS.IND.3SG	get.PRS.IND.3SG	bad
	voti			
	marks			
	'I am sorry he always gets some bad marks'			

In (13a), a bridge verb selects a realis embedded verb, in (13b) a non-bridge verb selects an irrealis embedded verb and, finally, in (13c), a non-bridge verb selects a realis embedded verb. In these instances of CD2, no intervening element is necessary, it being a pronominal clitic (subject or object), a negative morpheme or an auxiliary. Since the structures in (13a-c) predict that the realization of CD2 is not contingent on the presence of an element in between the main and the embedded verb, they confirm that an account for CD2 should go into another direction with respect to what was proposed by Cocchi & Poletto (2002, 2007). In other words, the core of complementizer deletion cannot stand in the overt realization of a clitic-like element, but other operations must be embraced for a detailed description of this phenomenon. As will be further discussed in §3, this study, rests on the assumption that the embedded verb is the main character in CD2, raising towards a higher CP position, presumably to ForceP, to check some sentential-type features. Hence, it is in complementary distribution with an open complementizer that is, indeed, omitted.

3. Complementizer Deletion through Verb Movement

Following Cocchi & Poletto's (2002) analysis of the distinct types of CD, the core hypothesis is that they both exhibit alternative checking. CD1, characterized by a selecting bridge verb and an irrealis embedded verb and present in both standard Italian and Florentine, alternatively checks the relevant feature in Fin° with either a declarative complementizer externally merged there or through the movement of the embedded verb to the Fin projection. Conversely, CD2, which accepts both bridge and non-bridge selecting verbs and both realis and irrealis embedded verbs and operative in Florentine, alternatively checks the sentential declarative feature in Force° either through the complementizer base-generated in Force or through the clitic-like element located in an intermediate position between the main and the embedded verb via either movement (Cocchi & Poletto 2002) or Agree (Cocchi & Poletto 2007).

Both hypotheses have been rejected in §2.4 due to the optional status of the intervening clitic which prevents it from being the source of the whole derivation. In the present section, an alternative view will be proposed which does not rely on the movement of the clitic, but which rests on the raising of the embedded verb. On a par with CD1, which instantiates verb movement to Fin° , CD2 is also the result of embedded verb movement but towards a higher functional projection, presumably Force° . This prominent landing position of the embedded verb will be borne out by verifying its order with respect to other left-peripheral items like a contrastive focus and a familiar topic. Since they both can only follow the embedded verb, it is reasonable to assume that the latter targets a high position. Moreover, identifying ForceP as the final position of the movement operation permits to solve one of the critical aspects of Cocchi & Poletto's (2002) analysis on clitic movement. Accordingly, the clitic moves towards Force° , leaving the embedded verb in the I-

projection, and targets a position that is above a potential preverbal subject. This hypothesis predicts that the preverbal subject is expected to occur in an intermediate position between the clitic-element and the embedded verb, but this is not the case as a sentence like (14) is ungrammatical in Florentine:

(14) Florentine

*Mi	dispiace	un	Gianni	viene
me.IO.1SG=	be-sorry.PRS.IND.3SG	not	Gianni	comes

The solution proposed by Cocchi & Poletto (2002) is that the ill-formedness of (14) owes to some phonological form (PF) constraints, namely that the clitic forms a unique unit with the verb at the phonological level, inhibiting the lexical subject intervention.

Conversely, if embedded verb movement to ForceP is posited, the ungrammaticality of (14) can satisfactorily find a syntactic explanation, without resorting to other levels of interface. A structure like (14) is ungrammatical in Florentine because it is the verb, potentially accompanied by the clitic when it is present, that raises to the left of the embedded verb and not the clitic alone (15):

(15) Florentine

Mi	dispiace	[ForceP [Force [°] (un) viene]
me.IO.1SG=	be-sorry.PRS.IND.3SG	not comes
[SubjP Gianni [IP [I [°] <(un) viene>]]]		
Gianni		

‘I am sorry Gianni doesn’t come’

Therefore, in the present section CD2 in Florentine will be argued in terms of embedded verb movement to ForceP relying on valid supporting evidence and offering a different view of the “Alternative Checking” hypothesis that can rule out a sentence like (14) within the realm of the purely syntactic analysis.

3.1 Verb-to-Force in Fiorentino: some empirical data

The phenomenon of verb movement to CP has been much debated in the literature and, after Rizzi’s (1997) proposal of the fine structure of the left-periphery, it has often been correlated with the exploration of the potential target position of the verb. In this article, a flexible view of verb movement will be adopted (Wolfe 2016b, 2020), which allows to make a distinction between languages where a V-to-Fin system emerges and languages where a V-to-Force system is manifested. This implies that no target C[°] is a priori excluded while treating the V-to-C phenomenon, but the main source of variation relies on the specific properties of the languages under analysis⁵.

⁵ There is a vast amount of literature on verb movement published in the last decades. For V2 in Germanic languages see den Besten (1983), Haider (2010), Tomaselli (1990, 2004), Vikner (1995), Holmberg (2015, 2020). For v-to-Fin in Romance see Cardinaletti & Roberts (2002), Ferraresi & Goldbach (2002), Ledgeway (2007, 2008), Salvesen (2011, 2013). For v-to-Focus in Romance see Benincà (2004, 2006, 2013), Poletto (2005, 2014). For v-to-Force in Romance see Rouveret (2004).

Regarding complementizer deletion phenomenon, the hypothesis of verb movement to a certain C° in case of CD1 and CD2 finds some robust evidence in their incompatibility with preverbal quantifiers as subjects. Quantifier subjects cannot undergo topicalization, meaning that they either remain in the SpecIP or they move in a different C-projection. Whereas they can properly precede the verb when the declarative complementizer is overtly realized (16), they can only follow it if the complementizer is missing (17b):

(16) Florentine

Mi	dispiace [CP	che [IP [QuantP	tutti [TP	ci
me.IO.1SG=	be-sorry.PRS.IND.3SG	that	all	us
vedono]]]]				
see				
'I am sorry that everyone sees us'				

(17) Florentine

a. *Mi dispiace [CP \emptyset [IP [QuantP tutti [TP ci
me.IO.1SG= be-sorry.PRS.IND.3SG all us
vedono]]]]

see
'I am sorry everyone sees us'

b. Mi dispiace [CP ci vedono [IP [QuantP
me. IO.1SG= be-sorry.PRS.IND.3SG us see
tutti [TP <ci vedono>]]]]

all
'I am sorry everyone sees us'

If the complementizer is overtly realized, the quantifier subject can precede (but also follow) the verb, meaning that, it can either remain in the IP or it can target a non-Topic position within the CP retaining the subject-verb order. Conversely, if the complementizer is dropped, the quantifier subject can only follow the main verb (17b). Regardless of the position of quantifier subjects, it being either in the IP or in a non-Topic projection, the fact that it can only follow the verb in CD2 context indicates that verb movement to a certain C-projection has occurred. Although (17b) shows that the verb movement towards the C-projection takes place, there is no clue about the final position of the verb. Indeed, we could determine Force as the landing position of the embedded verb only if the quantifier raises in a high CP position, potentially to the immediate right of the verb. Since there is not enough evidence to show this, a verb-quantifier subject order in CD2 context (17b) simply envisages that embedded verb movement to the left-periphery does take place, but further evidence needs to be presented to indicate the exact landing position.

The final position of the verb will be diagnosed by looking at the following synchronic and diachronic empirical evidence. In particular, the main argument proposed to bear out that Force $^\circ$ hosts the verb in CD2 structures is based on canonical diagnostics concerning the position of left-peripheral constituents. It was, indeed, observed that no elements belonging to the left-periphery can precede the embedded verb in CD2 contexts (18-19):

(18) Florentine

a. *Mi dispiace LA MI' MAMMA
 me.IO.1SG= be-sorry.PRS.IND.3SG the my mum
 tu incontrri di-continuo (non il mi'
 babbo)
 you.SBJ.2SG= meet constantly (not the my
 dad)
 'I am sorry my mum you constantly meet (not my dad)'

b. Mi dispiace tu incontrri
 me.IO.1SG= be-sorry.PRS.IND.3SG you.SBJ.2SG= meet
 LA MI' MAMMA di-continuo (non il mi' babbo)
 the my mum constantly (not the my dad)
 'I am sorry you constantly meet my mum (not my dad)'

c. Mi dispiace che LA MI' MAMMA
 me.IO.1SG= be-sorry.PRS.IND.3SG that the my mum
 tu incontrri di-continuo (non il mi' babbo)
 you.SBJ.2SG= meet constantly (not the my
 dad)
 'I am sorry my mum you see (not my dad)'

(19) Florentine

a. *Mi dispiace la mi' mamma
 me.IO.1SG= be-sorry.PRS.IND.3SG the my mum
 tu la incontrri di-continuo
 you.SBJ.2SG= her.OBJ.3SG.F=meet constantly
 'I am sorry my mum you constantly meet her'

b. Mi dispiace tu la
 me.IO.1SG= be-sorry.PRS.IND.3SG you.SBJ.2SG= her.OBJ.3SG.F=
 incontrri di-ontinuo la mi' mamma
 meet constantly the my mum
 'I am sorry my mum you constantly meet her'

c. Mi dispiace che la mi' mamma
 me.IO.1SG= be-sorry.PRS.IND.3SG that the my mum
 tu la incontrri di-continuo
 you. SBJ.2SG= her.OBJ. 3SG.F= meet constantly
 'I am sorry that my mum you constantly meet her'

As shown by the examples above, a preverbal left-peripheral element like a contrastive focus (18) or a familiar topic (19) is acceptable only if the declarative complementizer is overtly realized, otherwise a topic/focus needs to be right-dislocated in a position that follows the verb. This evidence is compatible with the view that in the CD2 context the verbal constituent moves to ForceP, that is to a very high left-peripheral position, from which it can only be followed by other CP elements. This is, hence, why only (18b) and (19b) are grammatical when the complementizer is dropped, because the verb targets a position that is higher than the FocP/TopP.

A further expansion of this argument relies on the introduction of hanging topics. Contrary to left-peripheral elements, hanging topics can properly precede the embedded verb (20):

(20) Florentine

Mi	dispiace	Marco gli
me.IO.1SG=	be-sorry.PRS.IND.3SG	Marco him.IO.3SG.=
hanno	telefonato	
have.PRS.IND.3PL	called	
‘As for Marco, I am sorry they have called him’		

Hanging topics are characterized by their DP-nature and by the co-occurrence of a resumptive clitic or tonic pronoun agreeing in gender and number. Contrary to standard left-dislocated topicalization, hanging topics do not feature any movement to the CP layer, but they are base-generated in the C-layer. Benincà & Poletto (2004) showed that, due to their more intrinsic properties that will not be further discussed, hanging topics must be labelled as external to the fine structure of the left-periphery and located above the highest functional head Force°. Since hanging topics precede Force° *tout court*, it is not surprising that a structure like (20) is grammatical: the verb can follow the hanging topic because this last one traditionally maps a position above Force°, so it does not intervene in the process of verb movement.

Therefore, the order of the verb with respect to a left-peripheral element like topic/focus or with a more highly positioned item like hanging topic can be successfully employed as a diagnostic test to establish the position of the verb. The fact that it can only precede functional elements indicates that it must be in a very high position in the structure like ForceP.

Ultimately, the same trend seems to be confirmed from a diachronic perspective. Cocchi & Poletto (2007) proposed an analysis of the historical development of complementizer deletion examining Old Italian and Renaissance Italian along with Modern Florentine and Modern standard Italian. On a par with Modern Florentine, Renaissance Italian allowed complementizer deletion with both bridge and non-bridge selecting verbs and with both realis and irrealis verb. Complementizer deletion was also attested in restrictive object and subject relative clauses. Moreover, this phenomenon was not only attested with finite declarative complementizer, but also the non-finite declarative complementizers *di/a* (“to”) could be omitted.

Mezsler & Samu (2008) undertook a purely diachronic investigation of complementizer deletion in Old Italian and Middle Florentine showing the evolution of this phenomenon from the 13th to the 16th century. Focusing solely on CD2, they recognized that the omission of the declarative complementizer in indicative embedded contexts became increasingly frequent around the 15th century. Moreover, they compared three texts written by two authors⁶ differing in their social and cultural background and they revealed that CD2 was far more attested in the text written by an uneducated writer, confirming the oral nature of this phenomenon that has been handed down to the present day. Here, a further expansion of this diachronic analysis will be proposed verifying whether the omission of the declarative complementizer is

⁶ One text was retrieved from an anonymous author, the other two from Machiavelli.

compatible with the presence of any left-peripheral element. The same literary text scrutinized by Meszel & Samu (2008) has been recovered, that is a collection of novels entitled Motti and Facezie (MF) written by an anonymous author:

(21) a. (MF 9.24–25, Zava 2020: 22)

So non fa di bisogno più replicare
know.PRS.IND.1SG not it-is necessary more repeat
'I know there is no need to repeat...'

b. (MF 36:14, Zava 2020: 64)

e feci conto cosumavo...
and did.PST.IND.3PL count spent.PST.IND.1SG
'and I counted I spent...'

c. (MF 35.27, Zava 2020: 63)

so che per il tempo niuno è venuto
know.PRS.IND.1SG that for the time none is followed
drieto a me..
to me
'I know that none has followed me because of the time...'

d. (MF 12.5-6, Zava 2020: 26)

Non vedete voi che ogni indì dua
not see.PRS.IND.2PL you that every days two
votano uno pozzo
empty.PRS.IND.3PL a well
'You don't see that every two days they empty the well'

In line with modern Florentine, 15th century Florentine displays the same phenomenon; anytime that a left-peripheral element is included in the structure (21c-d), the complementizer must be obligatorily realized provoking the following order COMP>Foc/Top/Adv>verb. On the other hand, if the complementizer is deleted (21a-b), no left-peripheral constituent can precede the verb. This is due to the movement of the verb to a position that is higher than the relevant functional positions hosting adverbs/topics/foci owing to some featural constraint of the verb. The verb is the matching element capable of checking the relevant declarative feature, therefore it is attracted to a suitable projection to accomplish this task. Since this projection is nothing but ForceP, located at the extreme edge of the left-periphery, the verb is eventually forced to precede all other CP elements in the structure. Far from providing a full-fledged diachronic analysis of CD2, this path is only intended to convincingly support the main argument that CD2 is an instance of verb-movement to ForceP; the analogy between 15th century Florentine, when CD2 first was attested, and modern Florentine stands for a further evidence in favour of V-to-Force movement in CD2 and the reliability of this phenomenon needs to be recognized due to its solid historical background.

To sum up, this section has highlighted the main argument in favour of verb-movement to Force in CD2 contexts primarily relying on a canonical diagnostic test based on the ordering of constituents within the structure⁷. Both synchronic and

⁷ A potential counterargument to this proposal could rely on the lack of subject-clitic inversion in CD2 context characterized by verb movement to a high position. Since Florentine

diachronic analysis agree on ruling out topic/focus/Adv>verb order when the complementizer is omitted, but strongly promote the opposite order, envisaging, hence, the prominent position of the verb. As for the role of the clitic, if present, it moves along with the embedded verb. Further research should investigate its target position, revealing whether it is simply attached to the verb or whether it moves in a higher position than the projection where the verb raises.

4. CD1 and CD2: parametric implications

The present section will attempt to regularize the phenomenon of complementizer deletion by means of a parametric approach. Specifically, the Parametric Comparison Method⁸ (Longobardi 2003, 2018, Longobardi & Guardiano 2009, Longobardi et al. 2013, Guardiano & Longobardi 2005, 2017, Ceolin et al. 2020, 2021) will be adopted to identify which parameters regulate the occurrence of CD1 and CD2 and whether some parametric implications between them can be singled out. In this analysis, the Parametric Comparison Method will not be exploited for the purpose of phylogenetic investigation, but its model of the parameter system will be adopted to account for the realization of complementizer deletion and for the microvariation encountered between standard Italian and Florentine.

4.1 An overview of the Parametric Comparison Method

The Parametric Comparison Method (henceforth PCM) constitutes an innovative tool for language comparison that strives to reconstruct linguistic phylogeny and to provide new linguistic taxonomies relying on the notion of parameter. The choice of *parameter* as the core notion of this approach comes from the assumption that they are more stable with respect to other linguistic properties like semantic or phonological features (Longobardi 2001b), in the sense that they are less subject to diachronic variation⁹ (Guardiano & Longobardi 2017). Moreover, after Chomsky's "Principles and Parameters" theory (1981), the concept of parameter became fundamental in linguistic theory and language description, turning into the notion that can really describe the differences and similarities between languages, being the source of why languages differ. Parameters basically consist in the syntactic properties that "define the space of possible variations among languages" (Ledgeway & Roberts 2017: 581). Contrary to principles, that are innate and, hence, are identical across languages and are equally distributed within the speakers, the parameters are acquired according to the language the speaker is exposed to, or more specifically, to the primary linguistic data (PLD) for language acquisition (Ledgeway & Roberts 2017). A widespread example of parameter reported in the literature concern the unmarked order of verb (V) and object

is a language with a full-fledged subject clitic system where subject clitics never appear in enclitic position, here we rest on the assumption that enclisis cannot be considered as the only diagnostic test to verify whether verb movement has occurred (Poletto 2000)

⁸ For a full list of publications on PCM and related topic, see <http://www.parametriccomparison.unimore.it/site/home.html>.

⁹ Other comparative methods adopted in the past included the Classical Comparative Method, based on meaning and sound correspondence, and the Multilateral Comparison, based on specific items compared cross-linguistically.

(O) in a language: whereas the mapping of a verb as syntactic category and of an object as a functional category are universal concepts described by principles, likewise the combination of verb and object to form a VP, the order of these elements tends to differ cross-linguistically. There are some languages, like English, that prefer VO order, whereas others, like Japanese that prefer OV order, displaying, hence, a parametric variation. In a nutshell, according to the language of exposition, the learner acquires one or the other order to form VP, setting the relevant value for the verb-object order parameter (Ledgeway & Roberts 2017).

The parameter system's model employed by the PCM features the following properties to provide reliable linguistic taxonomies: a) adopting the Modularized Global Parametrization, (Longobardi 2003), one single module or syntactic domain must be investigated at a time, b) the interdependencies among parameters must be established in terms of a set of implicational formulas, c) each parameter must be correlated with a set of diagnostics or manifestations (Crisma et al. 2020), namely some YES/NO questions referring to whether that specific property can be identified in the language under analysis, d) a statistical procedure through which the value of each parameter can be determined must be applied and e) a procedure to detect historical relatedness for parameter values must be employed.

Assuming the Modularized Global Comparison, Longobardi et al. (Longobardi 2003, 2018, Longobardi & Guardiano 2009, Longobardi et al. 2013, Guardiano & Longobardi 2005, 2017, Ceolin et al. 2020, 2021 etc.) have widely investigated the nominal domain in the last two decades. This approach relies on focusing on a predefined set of parameters which are not affected by parameters outside that set, meaning that their tight correlation is visible within the same syntactic domain, but no influence from other domains should arise. Moreover, it is based on a set of languages composed of structurally similar varieties.

Parameter values are in principle binary, namely, they can be either positive or negative depending on the value assigned by the language under examination. The PCM, however, introduces a third possible value, that is 0, standing for the irrelevance of that parameter owing to the value assigned to an antecedently valued parameter. This parameter can, in turn, become 0+ if an antecedently assigned parameter value entails its positivity and 0- if an antecedently assigned parameter value entails its negativity. Therefore, it is possible to determine the correlation among parameters generating a pervasive net of implications that permits to predict the value of one or more parameters by the value assigned to some other parameters. In order to assign parametric values, it is necessary to define a list of statement that clearly indicates how the language should surface if a certain parameter is activated.

Finally, the most authentic measurement to assess linguistic relatedness adopted by the PCM is the syntactic distance, provided by establishing the coefficient $\langle i:d \rangle$ where i stands for the number of identities in parametric values and d for the number of differences. The syntactic distance δ is computed by applying the Hamming distance, namely by dividing the number of differences by the sum of identities and differences for each pair: $d/(i+d)$ and falls in a range $0 > \delta > 1$. As a general tendency, two languages are more related if they have a syntactic distance which is closer to 0. On the other hand, the highest the syntactic distance, the more distant the two languages are. Whereas scholars do not overall agree on which value should represent a threshold to determine whether two languages are related or not, all the applications

of the PCM concur that a syntactic distance higher than 0.5 is extremely rare and above 0.85 tends to not-exist (Guardiano and Longobardi 2017, Baker & Roberts 2022).

One of the major benefits of a parametric approach based on the Modularized Global Parametrization is that it can be extended, for instance shifting to a distinct syntactic domain. The first application of the PCM addressed the DP and its most recent development consists of a list of 96 DP-parameters set in 54 languages (Longobardi 2018, Guardiano et al. 2020). Baker and Roberts (2022), rather, focused on the VP/vP and IP domain, formulating 87 clausal parameters for 39 languages. In this article, a further expansion to the C-layer will be proposed. Aiming to parametrize the CP, the cartographic framework was selected and for each head of the split CP (Rizzi 1997), a sub-list of parameters was generated, for a total of 101 parameters. In particular, the following syntactic structure was assumed:

(22) [ForceP [TopP* [IntP [TopP* [FocP [ModP [TopP*[FinP]]]]]]]]]

Following the Borer-Chomsky Conjecture (Baker 2008b), which states that “all parameters of variation are attributable to differences in the features of particular items (e.g., the functional heads) in the lexicon” (Baker 2008b: 156), most of the parameters were formulated in terms of formal features of functional heads (Chomsky 1995), namely each head was individually investigated to detect its formal features. Additional parameters were retrieved looking at salient patterns of variation operative in the languages under analysis. The present analysis will primarily rely on the parametrization of ForceP and FinP with a focus on the different realizations of complementizer deletion phenomenon.

4.2 PCM and parameter hierarchy

Parameters within the PCM are listed in numerical orders, $Pc1$, $Pc2$... etc, where P stands for “parameter” and c stands for the domain under investigation (complementizer phrase in this case). Moreover, each parameter is individually associated with a three-letter code that facilitates their retrievability. The inventory of parameters is listed in a top-down fashion where the top is attributed to broader parameters, whereas the bottom is characterized by more fine-grained ones.

In some way, this methodology does not deviate from the most recent parametric approaches that catalogue parameters in a taxonomy (Roberts & Holmberg 2010, Roberts 2012, Biberauer & Roberts 2012a, 2015b; Biberauer et al. 2014) where they are hierarchically distributed and mutually interact with one another. The main idea is that it is not the case that languages are regularized exclusively by macro-parameters (Baker 1996, 2008b), envisaging a clear-cut division of languages, or by micro-parameters (Kayne 1996, 2000, Manzini & Savoia 2005), predicting only small variations between languages, but both macro- and micro-parameters contribute to linguistic variation in synchronic and diachronic terms¹⁰ (Baker 2008b, Ledgeway &

¹⁰ From Biberauer & Roberts (2012a):

- (a) Definition of a microparameter:
For a given value v_i of a parametrically variant feature F : a small subclass of functional heads (e.g. modal auxiliaries, pronouns) shows v_i .
- (b) Definition of macroparameter:

Roberts 2017). In a hierarchical fashion, macro-parameters, singling out the unmarked option and applying to all functional heads, are at the top, whereas micro-parameters, defining more intrinsic variation at the functional heads level, follow downwards (Ledgeway & Roberts 2017). This approach was able to determine the parametric variation of numerous phenomena within Romance. One of the most notorious cases consist in the analysis of past participle agreement in Romance whose distribution was hierarchical schematized via a series of parameters. (Ledgeway 2013). Specifically, seven different parametric variations were observed in Romance, displaying distinct degrees of agreement between the past participle and nominal elements in the structure: e.g. in Spanish past participle agreement is not present at all, in Occitan past participle agreement only takes place with nominal objects, in French the past participle agreement with object results from a left-dislocation and so and so forth. These variations were interpreted hierarchically (Ledgeway 2013, Ledgeway & Roberts 2017) in such a way to represent the most unmarked option (macroparameters) at the top (e.g Spanish) and the most marked option (nanoparameters) at the bottom (e.g. Catalan). This tool indicates that there is not a unique parametric variation, but a taxonomy of parameters needs to be hypothesized since parameters are highly correlated in a series of implicational relations.

Far from going in depth into the classification of parameters from the broader macro-parameters to the more detailed micro-parameters¹¹, in this section, a taxonomy of parameters regarding the occurrence of complementizer deletion will be illustrated, showing, first, how parameters need to be classified from a broader and more general statement to a more detailed one and, second, how these parameters interact and generate implications. The PCM and the parametric hierarchy approach do not significantly differ in scope: they both aim to determine a taxonomy of parameters to properly describe linguistic variation in both synchronic and diachronic terms. However, the methodology itself tends to differ, whereas the PCM is more focused on the implicational relations between parameters, the hierarchical approach primarily relies on the notion of markedness which emerges from the distribution of parameters in the hierarchy. This means that the PCM does not adopt such a detailed sub-categorization of parameters as the parametric hierarchy approach does and does not classify them as macro-parameters, micro-parameters etc. It does not really envisage a hierarchy of parameters according to the degree of specificity the parameter regularizes but defines a chain of implicational relations that determine the value or the neutrality of a certain parameter due to the value assigned to an antecedently set of parameters. The PCM grounds in the calculation of the syntactic distance that, as pointed out in §4.1, neatly captures the similarities among languages. Therefore, in the end, the languages are distributed according to the value of the respective syntactic distance, which is drawn from the overall analysis of single parameters. In this paper, the parametric hierarchy corresponding to the complementizer deletion phenomenon will be overlooked¹², but a parametric approach based on PCM will be applied.

For a given value v_i of a parametrically variant feature F , all functional heads of the relevant type share v_i .

¹¹ For a more detailed discussion of the interaction between macro- and microparameters and parameter hierarchies, see the list of publications delivered by ReCos project here: <https://recos-dtal.mml.cam.ac.uk/>.

¹² Further research could directly compare these two methodologies to observe whether the results parallel or not. In this article, it was not possible to go in this direction as more data

4.3 Verb movement under the PCM

From the data reported in section §2 and §3, concerning the different nature of the target position of verb movement, it is reasonable to assume, first, that there exist one, or probably multiple, parameters regulating verb movement property, second, that languages independently assign a value to these parameters to realize different types of structures and third, that the distinct patterns of parameter setting in each language define a sequence of parameters that identify the variety under examination. As will be thoroughly discussed in this section, this trend functions for both CD1 and CD2; since they instantiate different types of verb movement, their occurrence can stem from a series of parametric implications and the cross-linguistic variation they produce can be adequately captured by a parametric approach like the PCM, which strives to delineate the specific parameters which are the source of variation.

As already mentioned, the application of the PCM to the CP layer is framed within a cartographic framework and firmly relies on the split-CP (Rizzi 1997), defining specific parameters for each single head. Most of the parameters were formulated in terms of formal features of functional heads, namely each head was individually investigated to detect its formal features. Afterwards, the realization of each formal feature was verified according to Gianollo et al.'s (2008) parameter schemata:

(23)

- a. Is F, F a functional feature, grammaticalized?
- b. Is F, F a grammaticalized feature, checked by X, X a lexical category?
- c. Is F, F a grammaticalized feature checked by X, strong?
- d. Is F, F a grammaticalized feature, spread on Y, Y a lexical category?

In (23), (a) asks whether a certain feature F is grammaticalized, so whether there is any overt item that bears F. If this question receives a positive value, (b), (c) and (d) become relevant, otherwise there is no point in checking their answers. On the other hand, (b) refers to whether a checking relation is established between a higher head bearing uninterpretable feature F and a lower projection where that feature is overtly realized, (c) regulates whether the checking relation is also followed by a movement operation of the relevant feature towards the higher head, whereas (d) indicates whether the same feature is shared between two distinct positions.

In order to parametrize verb movement towards FinP and ForceP, a response to question (23c) needs to be provided for both projections. In this regard, two parameters can be formulated:

Pc1 (CSF): is F, F a grammaticalized feature checked by Force°, strong?

Pc3 (CSI): is F, F a grammaticalized feature checked by Fin°, strong?

Both Pc1 and Pc3 regularize whether a certain underspecified feature is ever checked by Force° and Fin° through movement of the element endowed with that feature. However, Pc1 and Pc3 do not make explicit the nature of the element involved in the

from other varieties were needed to apply the parametric hierarchy approach, so to clearly distinguish the different levels of parametrizations.

movement and, at the current stage, it can be either a verb or a particle or a head-marker etc. Therefore, some additional parameters need to be added to cross-linguistically distinguish the kind of head-movement under analysis:

Pc2 (VFO): does the verb, carrying [F], move from a low position to ForceP?

Pc4 (VFI): does the verb, carrying [F], move from a low position to FinP?

Contrary to Pc1 and Pc3, Pc2 and Pc4 regulate a more specific phenomenon, that is whether the movement of the relevant feature F concerns the verb. Hence, these parameters make explicit two variants of verb movement targeting two distinct positions in the fine structure of the left periphery, FinP and ForceP respectively. An implicational relation between the first set and the second set of parameters is established. Pc2 is relevant only if Pc1 is positive, whereas it is not relevant, receiving the value 0-, if Pc1 is negative and the same works for Pc4 and Pc3. In other words, only if the language admits movement towards Force° or Fin° respectively, is it possible to determine whether this movement is achieved by the verb.

In the remainder of this section, the empirical evidence showing V-to-Fin and V-to-Force will be reported. In particular, relying on complementizer deletion, CD1 will be analysed as more fine-grained and empirical specification of verb movement to Fin, whereas CD2 will be argued to be one of the few empirical contexts where verb movement to Force takes place.

4.4 Complementizer deletion under the PCM

The parametrization of CD1 and CD2 is drawn from the realization that it is not the case that either the main or the embedded verb plays a role in the derivation, but it is the combination of the main and the embedded verb that jointly affects the grammaticality of the structure. Along these lines it is possible to provide an accurate distribution of parameters that cover both Florentine and standard Italian and, additionally, other Tuscan varieties that figure in an intermediate position. As a matter of fact, the assumption that the modality of the embedded verb is the only factor that affects the derivation, means to assign a secondary role to the main verb. If this view was borne out, it would not be possible to account for all the intermediate stages of complementizer deletion, like in Pisano. Pisano, indeed, has not developed complementizer deletion for all combinations of main and embedded verbs; when the main verb is of the non-bridge type and the embedded verb is realis, the structure results more degraded:

(24) Pisano

?Mi	dispiace	dorme poco	la	notte
me.IO.1SG=	be-sorry.PRS.IND.3SG	sleeps	a little	the night
‘I am sorry he sleeps a little in the night’				

If the embedded verb was the only tenet of the whole derivation, (24) was expected to surface as well-formed. Since realis embedded verb are compatible with complementizer deletion as they can be found in combination with bridge selecting verbs, if the main factor triggering the operation was the [±realis] feature, (24) should

be grammatical as well. In other words, sentences with complementizer deletion should be accepted regardless of the type of main verb in Pisano.

On the other hand, if we posit that the main trigger of the derivation is the selecting verb, we should expect cases of CD2 in all contexts of embedded declaratives. This is not actually the case as shown by Pisano, but also by Florentine when the selecting verb is a non-bridge verb of the affective type like *odiare* (to hate) or *amare* (to love)¹³. Therefore, the joint role of main and embedded verb will emerge in this analysis, which will ultimately qualify as the fundamental component of the parametrization.

The first parameter that can broadly capture complementizer drop phenomenon is the following:

Pc5 (CCD): is complementizer deletion attested?

Pc5 distinguishes languages where complementizer deletion is never attested and languages where this phenomenon can occur, without posing any specific condition or constraint. In this regard, it signals a macroparametric variation identifying whether a certain property is operative in the language under analysis (Colasanti 2018).

Once that the distinction between languages where complementizer deletion is attested and language where not is parametrized, the investigation on the conditions that affect complementizer drop can be regularized via a series of parameters. As a first, broader and less marked parameter, Pc6 can be defined:

Pc6 (CDA): is complementizer deletion attested with all possible combinations of selecting and embedded verb?

Pc6 covers all the languages where complementizer deletion is not the result of a specific combination of main and embedded verb but is attested with any possible sequence. Florentine, where CD2 is attested, seem to positively realize this parameter.

From the third parameter, a deeper analysis of the potential combinations of matrix and subordinate verb emerges:

Pc7 (NRI): is complementizer deletion attested with non-bridge selecting verbs and with both realis and irrealis embedded verb?

Pc7 regulates all the cases where CD2 is influenced by the nature of the main verb. This, however, cannot describe the languages where non-bridge verbs are incompatible with realis embedded verb, like Pisano. Hence Pc8 is released:

Pc8 (CNI): is complementizer deletion attested with non-bridge selecting verbs and with irrealis embedded verb?

¹³ At the current stage, it has not been possible to identify a more specific verb class than non-bridge verbs that can properly select an empty complementizer in CD2 context. Since the results are not entirely consistent, given that some non-bridge verbs like *odiare* ("to hate") and *amare* ("to love") cannot license complementizer drop, it might be that a nano-parameter is involved, being CD2 sensitive to specific lexical items. However, further research needs to be conducted to empirically test this hypothesis.

At this point, the case of bridge verb needs to be more deeply investigated. As for non-bridge verbs, bridge verbs are likewise divided in two parameters, whereby the case of standard Italian will be detected:

Pc9 (BRI): is complementizer deletion attested with bridge verbs and with both realis and irrealis embedded verb?

Pc10 (CBI): is complementizer deletion attested with bridge verbs and with irrealis embedded verb?

From this list of parameters two considerations can arise. The first concerns the implicational nature of parameter; it is, thus, possible to formulate a series of parametric implications that unfolds the predictability of certain parametric values. The nature of these parametric implications is intrinsically logical as they are driven by the same set of conditions (nature of the main verb and inflection of the embedded verb) which are separately satisfied by distinct languages. They are, nonetheless, supported by empirical evidence showing that varieties seem to accept complementizer deletion to different extents. To begin with Pc5, if it receives a negative value, there is no point in checking the values of the others, which become immediately irrelevant (the value assigned is 0-). This is the case of numerous Italo-Romance varieties that belong to Northern Italian dialects (e.g. Bellunese, Biellese, Genovese, Modenese etc.), Southern Italian dialects (e.g. Sicilian, Neapolitan etc.) and Sardinian dialects (Campidanese etc.).¹⁴ In these languages, the drop of the declarative complementizer consistently produces ill-formed structures. On the other hand, if Pc5 is assigned with a positive value, the others become relevant, meaning that it is necessary to verify the factors affecting the deletion of the complementizer. Moving to the implicational relations between Pc6 and the others, if the former is positively valued, the latter become positive as well; in other words, if a language can drop the complementizer in clauses where the main verb is indiscriminately bridge or non-bridge and the embedded verb is either realis or irrealis, like in Florentine, this condition naturally incorporates the conditions operative in all those parameters where the combinations of main and embedded verb plays a crucial role. In other words, since Florentine assigns a positive value to Pc6, this will predict that Pc7-Pc10 are positive as well. From the PCM's viewpoint, it means that Florentine receives 0+ for the parameters Pc7-Pc10. Conversely, if Pc6 is assigned with a negative value, there is no clue that predicts the value of the following ones, which need to be verified. Focusing on Pc7 and Pc8 relationship, if the former is positive, the latter is as well, whereas if the former is negative, the latter needs further investigation. This is the case of Pisano, where if a non-bridge verb is in the main clause, complementizer deletion is grammatical only if the embedded verb is irrealis, hence, assigning a positive value exclusively to Pc8. The last two parameters, rather, refer to the bridge status of the main verb and aim to single out the case of CD1 in standard Italian, where complementizer deletion is only attested with bridge selecting verb and irrealis embedded verb.

¹⁴ Cocchi & Poletto (2007) already mentioned the lack of complementizer drop in most Northern Italian dialects. In a more recent analysis, we tested complementizer deletion of both in more than twenty-five varieties and the result clearly show that Tuscan varieties like Florentine, Pisano and Maremmano are the few ones where this phenomenon is licensed.

What particularly needs to be stressed is the correlation established by *Pc6* and *Pc7-Pc10* (summarized in Table (1), which distinguish the broader case of *CD2* (*Pc6*), the intermediate status of *CD2* (*Pc7-Pc9*) and, eventually, the more marked case of *CD1* (*Pc10*)). Looking more closely at the correlation between *Pc6* and *Pc10* that stand for the original distinction between Florentine with *CD2* and standard Italian with *CD1*, it can be observed that, from a parametric viewpoint, these two phenomena do not mutually interact; it is a one-way implicational relation whereby *CD1* can depend on the value of *CD2*. Therefore, if it can be the case that a language manifests *CD1*, but not *CD2*, like standard Italian, the opposite can never take place. Anytime that a variety licenses *CD2*, also *CD1* needs to be admitted. This is because the conditions affecting the lexicalization of *CD1* belong to the set of conditions affecting the occurrence of *CD2*. *CD2*, can in fact, appear with both bridge and non-bridge selecting verbs and with both *realis* and *irrealis* embedded verb, whereas *CD1* is only available when a subset of these conditions is satisfied, namely when the selecting verb is of the bridge type and when the embedded verb is semantically *irrealis*.

Table (1) sheds light on how the implicational relations behave within the PCM framework. This pervasive net of implicational relations drastically reduces the number of parameters that require the assignment of a positive or negative value, since plenty of them are simply irrelevant and do not need further investigation.

Table 1. *Pc5-Pc10*: parametric implication

	NID ¹⁵	Florentine	Pisano	SI
<i>Pc5</i>	-	+	+	+
<i>Pc6</i>	0-	+	-	-
<i>Pc7</i>	0-	0+	-	-
<i>Pc8</i>	0-	0+	+	-
<i>Pc9</i>	0-	0+	+	-
<i>Pc10</i>	0-	0+	+	+

The second consideration to be advocated concerns the markedness of the parameters, a concept that has been fully defined by Biberauer & Roberts (2013) in their attempt to arrange parameters into a hierarchy. This list in Table (1) can be aligned with a hierarchy that regularizes the conditions affecting complementizer deletion. In this regard, *Pc5* and *Pc6* single out the most unmarked cases whereby complementizer drop is not found at all or instantiated under all the possible combinations of main and embedded verb. The following parameters rather highlights a higher and higher degree of markedness up to reaching *Pc10* that portrays *CD1* in standard Italian, where complementizer deletion is drastically restricted to a unique combination, bridge selecting verb and *irrealis* embedded verb.

Albeit we do not aim to posit an overlap of the PCM and the parametric hierarchy as it is beyond the scope of this analysis, it is crucial to shed light on the analogous evidence that can be drawn from the application of these approaches.

¹⁵ As mentioned in §4.4, the complete lack of complementizer deletion is not only a property of several NIDs, but also SIDs and Sardinian dialects show the same behaviour. Therefore, the choice of inserting NIDs here is only for the sake of convenience, but it indicates all the dialects missing this phenomenon.

Further investigation could be undertaken to unveil additional points of contact or, conversely, to underline their contrasts.

4.5 Verb movement and parametric implications

In section §4.3, two distinct chains of parametric implications concerning FinP and ForceP have been outlined. Whereas the former is ultimately realized by CD1 as it has long been established as an instance of V-to-Fin (Cocchi & Poletto 2002), the latter finds an empirical context in CD2 as shown by evidence based on the left-peripheral constituents ordering with respect to the verb. The following tables respectively show the chains of parametric implications that culminate with the parameters regulating CD2 (Pc6) and CD1 (Pc10). More specifically, Table (2) shows that if the parameter regulating Force strength is positive (Pc1), the parameter regulating verb movement to Force can be either positive or negative (Pc3). If Pc3 is positive, then Pc6, which governs CD2, is relevant and requires further investigation to properly receive a value, whereas if Pc3 is negative, the negative value of Pc6 can also be predicted. Likewise, if Pc1 is originally negative, the values of Pc3 and Pc6 also turn negative without further investigation. Table (3) shows the same kind of relation concerning V-to-Fin: if the parameter in charge of Fin strength is positive (Pc2), then the parameter responsible for verb movement to Fin (Pc4) is relevant and can be assigned with either positive or negative value. The positivity of Pc4 makes Pc10, regulating CD1 relevant, whereas the negativity of Pc4 predicts the negativity of Pc10 as well. On the other hand, if Pc2 is negative, there is no need to further investigate the values of Pc4 and Pc10 as, they both receive a negative value by default due to the implicational relational established.

Table 2. V-to-Force: implicational relation

<i>Pc1</i>	+	+	-
<i>Pc3</i>	+	-	0-
<i>Pc6</i>	relevant	0-	0-

Table 3. V-to-Fin: implicational relation

<i>Pc2</i>	+	+	-
<i>Pc4</i>	+	-	0-
<i>Pc10</i>	relevant	0-	0-

At this point, it is possible to assume an implicational chain between the parameters treated in §4.3 dealing with the parameterization of verb movement to distinct CP position and in §4.4 treating the parametrization of complementizer deletion. More specifically, if we assume that CD is the result of verb movement, the omission of the complementizer of both types is contingent on the strength of the relevant feature and on the verb carrying that feature. From Table (2) and (3), it is possible to show that specific phenomena of verb movement to FinP or ForceP like CD1 and CD2 are directly drawn from the positive parametrization of some antecedently valued parameters. This behavior confirms the trend also reported in the previous studies of the PCM whereby the ultimate list of the relevant parameters is drastically reduced because of the series of parametric implications that neutralize the value of number of them.

Table (4) reports the values represented in Table (1) with the addition of the parameters *Pc1-Pc4*. As shown in Table (4), for all the dialects where complementizer deletion is not attested at all, we cannot say anything about the value of *Pc1-Pc4*. More investigation is needed to verify whether any instance of V-to-CP is present. If this is the case, the total lack of complementizer deletion does not owe to the absence of any form of verb movement towards the C-layer, meaning the value of *Pc5* is not contingent on some antecedently valued parameters and is simply negative. Instead, if verb movement to Force completely misses or any element can head to the C-layer, *Pc5* should result as 0- as the value is already predicted by the value assigned to *Pc1-Pc4*. Moving to Florentine, the positive value of *Pc6* indicates that *Pc1* and *Pc3* are positive, otherwise a negative value should emerge on *Pc6*. As for Pisano and Standard Italian, the positivity of *Pc1* and *Pc3* cannot be retrieved by the value assigned to *Pc6*. Indeed, if *Pc6* is negative, it can be either the result of an implication relation which determines its negativity or simply the result of the lack of *CD2*, though other kinds of V-to-Force take place.

According to Table (3), *Pc10* is implicationally related to *Pc2* and *Pc4*, which determine movement to Fin. However, since *Pc10* is also correlated to *Pc6* by Table (1), both implicational chains must be considered in order to adequately assign parametric values. Looking at Table (4), as aforementioned, in dialects where complementizer deletion is not attested (*Pc5* is negative), the value of *Pc1-Pc4* cannot be retrieved. Indeed, it might be the case that movement to CP of the verb or other element is present in these varieties, but complementizer deletion is simply not attested. In Florentine, *Pc10* is 0+ because of the positivity of *Pc6* which regulates *CD2*. Nonetheless, *Pc2* and *Pc4* needs to receive a positive value as well, otherwise verb movement to Fin, exemplified by *Pc10*, would be ruled out. Standard Italian and Pisano portray a similar picture of Florentine: the positivity of *Pc10* is contingent on the positivity of *Pc2* and *Pc4* which regulate V-to-Fin.

Table 4. From strength to complementizer deletion: implicational relations

	NID	Florentine	Pisano	SI
<i>Pc1</i>	?	+	?	?
<i>Pc2</i>	?	+	+	+
<i>Pc3</i>	?	+	?	?
<i>Pc4</i>	?	+	+	+
<i>Pc5</i>	-	+	+	+
<i>Pc6</i>	0-	+	-	-
<i>Pc7</i>	0-	0+	-	-
<i>Pc8</i>	0-	0+	+	-
<i>Pc9</i>	0-	0+	+	-
<i>Pc10</i>	0-	0+	+	+

From Table (4) at least two conclusions can be drawn. First, it is visible that we can determine the full list of parametric values only in Florentine. Given the correlation between *CD2* (*Pc6*) and *CD1* (*Pc10*) in first place and their relationship with *Pc1/Pc3* and *Pc2/Pc4* respectively, a full series of parametric implication can be drawn permitting to assign a value to all the parameters without further analysis. On the other hand, the other varieties, which exhibit different degrees of acceptance of

complementizer deletion, require additional investigation to provide a definite value for all the parameters in the list. The second consideration is that Table (4) emphasizes the strict connection among parameters within the PCM in such a way that the final list of parameters is basically a pervasive net of parametric implications that permits us to determine the value of more specific parameters via the value assigned to broader ones.

5. Concluding remarks

This article advanced an original hypothesis for the treatment of complementizer deletion in an Italo-Romance varieties like Florentine, suggesting both an innovative theoretical approach based on parameters and new empirical data. The PCM is able to fully capture the micro-variation concerning complementizer deletion, entailing a series of parametric implications that help to downsize the final number of parameters to be tested and to directly establish the value of several parameters. It is, indeed, possible to establish a series of implications between CD1 and CD2 showing that whereas languages with CD1, but not CD2 are admissible, like standard Italian, the opposite is ruled out as any language that grammaticalizes CD2 needs to grammaticalize CD1 as well. This conclusion was drawn by generating a list of ten parameters based on the potential combinations of main and embedded verbs, traditionally considered as the major factors affecting this phenomenon. The parametric analysis was able to determine the parametric implications available within the list; moreover, it confirmed the pervasive nature of parametric implications where the value of certain parameters can successfully be retrieved by the value assigned to other parameters. Given the high degree of variation encountered within Tuscan varieties, further research could investigate the presence of nano-parameters specifying whether complementizer deletion is contingent on specific lexical item in the main clause.

As for the specific analysis of CD2, contrary to Cocchi & Poletto (2002, 2007), who claimed that it is an instance of alternative checking in which the clitic-like element intervening between the main and the embedded verb moves to Force°, we made a step further assuming that it is the verb that directly raises to ForceP. This assumption comes from the observation that not all instances of CD2 obligatory require the intervening clitic element and from an investigation of potential verb and left-peripheral constituent orders. Further investigation could shed light on the operation involving the clitic element. Indeed, in structures where it is present, it could either be attached to the embedded verb and move along with it or could move separately from the embedded verb, raising in a higher position than the verb.

Acknowledgement

I would like to thank Professor Ian Roberts for his assistance with this paper as a side-project of my PhD research. I would also like to thank Professor Adam Ledgeway for answering some of my questions and for giving me inputs for further investigation. I would also like to show my gratitude to the reviewers for their comments that greatly improved the manuscript. I am also thankful to the editor who assisted me throughout the publication process with constructive feedback. All remaining errors are entirely

my own. This research was supported by a Trust International Scholarship from the University of Cambridge.

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