The loss of V-to-C in the history of Portuguese: Subject position, clitic placement and prosody.

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ABSTRACT. This paper analyses the changes in subject position in Portuguese between the 16th and 19th centuries in terms of the loss of V2/V-to-C and the rise of SVO/non V-to-C. We argue that in Classical Portuguese (16th-17th centuries), the preverbal position is reserved for discourse prominent constituents, whereas in Modern European Portuguese, it is reserved for subjects. Our analysis is based on the claim that V2/V-to-C in pro-drop languages is entirely dependent on discourse conditions, and consequently, on prosody. We suggest that the change from V2 to SVO in Portuguese derived from a prosodic change that happened in the 17th century, which also affected clitic placement (*).

KEYWORDS: Classical Portuguese, Modern European Portuguese, V2 languages, V-to-C movement, clitic-placement, subject position, prosody-driven language change.
1. INTRODUCTION.

In this paper, we describe the change in subject position and clitic placement in the history of Portuguese between the 16th and 19th centuries, based on data extracted from sixteen syntactically annotated texts from the TYCHO BRAHE CORPUS, written by Portuguese authors born between 1502 and 1836. We propose that the change from Classical to Modern European Portuguese may be interpreted as the loss of V2/V-to-C and the rise of SVO. Our analysis is based on the claim that V2/V-to-C in pro-drop languages is dependent on discourse conditions, and consequently, on prosody – and we suggest that the change from V2 to SVO in Portuguese derived from a prosodic change that happened in the 17th century, which also affected clitic placement.

Three points deserve general clarifications at this initial stage: our stance on the periodization of Portuguese, our stance on ‘V2’ and ‘V-to-C’, and our stance on ‘diachronic variation’.

Concerning the periodization of Portuguese, the period we refer to here as Classical Portuguese corresponds to what has been called, in the tradition of Portuguese historical linguistics, ‘Classical Portuguese’ and the beginning of ‘Modern Portuguese’. Here, following the tradition, we call Classical Portuguese the language instantiated in texts written by authors born between 1500 and 1700; and our focus is on the change from Classical to Modern European Portuguese. Previous studies have indicated that this language corresponds to a grammar that is different from both Old Portuguese and Modern European Portuguese. Classical Portuguese is a pro-drop, V-to-C language (cf. Torres Moraes, 1995; Galves, 1996; Paixão de Sousa, 2004), with pronominal enclisis in V1 clauses and an enclisis/proclisis alternation in non-dependent V2 clauses (cf. Martins, 1994; Torres Moraes, 1995; Paixão de Sousa, 2004; Galves et al. 2005).

Old Portuguese was also a pro-drop language with evidence of V-to-C (Ribeiro, 1995), but with important differences regarding clitic placement (Namiuti, 2008). Modern European Portuguese is a pro-drop, SVO language, with pronominal enclisis in V1 and obligatory enclisis in SV affirmative non-dependent clauses.

Our analysis of the change from Classical to Modern European Portuguese as the loss of V2/V-to-C and the rise of SVO places our proposals within the scope of the much debated question of the nature of verb-second (‘V2’) in Ancient Romance languages. This, first of all, presents an issue of terminology. In this regard, it is worth pointing out here that the notion of ‘V2’ in the literature may be found either to refer mainly to linear order, or to be more focused on structural properties. In the former perspective, saying that a language is ‘V2’ implies that it excludes or drastically restricts the occurrence of V1 and V>2 (cf. Kaiser 1999; Fieis 2002; Rinke 2009 among others). In the latter perspective, although it does play a role in the discussion, linear order is less crucial in determining whether a language can be classified as ‘V2’ or not, and a special emphasis is placed on the movement of the verb to C and on the absence of a preverbal position dedicated to the subject. In this paper, we shall rely on a structural definition of V2, where the crucial property is the movement of V to a high position in the clause (which, following tradition, we shall take to be C). The presence of a phrase in the pre-verbal position, however, is optional in Classical Portuguese; this optionality distinguishes Classical Portuguese from strict V2 languages (and, in fact, would exclude it from the V2 family in the strict linear-order perspective on V2 mentioned above), in terms to be addressed further on. We consider,
however, that except for this optionality, Classical Portuguese shares important properties with strict V2 languages, mainly with respect to subjects. One of those properties is the absence of a dedicated position for preverbal subjects in V2 languages: like any other initial phrase, preverbal subjects are in topic position; and as a correlated fact, subjects appear in post-verbal position more frequently than in SVO systems. The data for subject positions in our corpus, as shall be detailed further on, shows this to be the case in Classical Portuguese. As for post-verbal subjects, in V2/V-to-C systems (as opposed to contemporary Romance pro-drop languages) the post-verbal position is a structurally high position, arguably the specifier of IP. As we shall see, the data indicates that this is the case in Classical Portuguese, as shown by patterns in the position of adverbs and by the difference in the informational status of the post-verbal subjects in 16th-17th century texts versus what is observed in Modern European Portuguese. If we are on the right track, the question arises as to why the V-to-C properties were lost in the history of Portuguese. This fact is reminiscent of the loss of the same kind of properties observed in the history of other Romance languages - as debated, among others, by Yang (2002). The data on Classical Portuguese, as we shall argue, indicates the need for a review of Yang’s (2002) explanation for the loss of V2 as a consequence of its co-existence with null subjects, which would make such grammars “intrinsically unstable”, based on his observations on the diachrony of French. We shall argue that this is not an adequate account of what happened in Portuguese, since the V2/V-to-C properties had coexisted with null subjects for at least five centuries before the emergence of an SV grammar. Instead, the loss of V-to-C in Classical Portuguese is related to the change in clitic placement (Galves et al. 2005), which, in turn, derives from a change in the rhythmic pattern of the language (Galves and Galves, 1995). We propose that an increase of enclisis with preverbal subjects related to the new prosodic pattern of the language contributes to the loss of markedness previously associated with this order, and to the non-identification of preverbal subjects as high topics. This gives greater weight to the reanalysis of preverbal subjects as occupying the canonical preverbal subject position, and no longer a topic position.

As is clear from these initial remarks, the debate in this paper is strongly derived from the word-order variation we find in our corpus – and a general comment on our approach to the syntactic variation found in historical texts is now in point. Our approach to the empirical data in our survey follows Kroch (2001, 1989), for whom diachronic variation found in historical texts is the consequence, not the cause, of grammatical change. In other words, the empirical variation is the product of the competition of two co-existing grammars in texts: the old conservative one, on one hand, and the new innovative one, on the other hand, with the gradual replacement of the former by the latter. Diachronic variation, in this view, represents the implementation of syntactic changes. However, it is important to mention that we do find a second kind of variation in historical texts, which does not represent the effect of grammatical change, but rather results from the choice between different constructions that are possible within a grammar – i.e., between different options provided by a single grammar in a given period. In this case, as we shall see, the variation occurs mainly among authors, who may choose the different options at varying rates. However, it can also discriminate groups of authors over time. The difference in nature of the two kinds of variations can be argued both on quantitative and qualitative grounds: diachronic variation, on one hand, presents an S-shaped curve (Kroch 1989) and is associated with qualitative changes. Synchronic variation, on the other hand, presents neither a clear quantitative diachronic trend, nor all the qualitative signs of grammatical change, as can be
shown by the stable presence of other syntactic phenomena, which strongly suggest that the grammar is the same despite the variation found in some constructions. Our data on 16\textsuperscript{th} - 19\textsuperscript{th} century Portuguese presents the two kinds of variation, and we will interpret their relevance to our analysis in different ways, in accordance to the approach briefly outlined above.

The paper is organized as follows. In Section 2, we present newly surveyed data and explore the aspects of subject-verb order in Classical Portuguese, which we take as essential for understanding the grammatical change. In Section 3, we analyze the dynamics of the change and propose an interpretation for the loss of V-to-C in Classical Portuguese, and its relation with pro-drop. We argue that, contrary to what happens in Germanic languages, V-to-C in pro-drop languages is entirely dependent on discourse conditions, and consequently on prosody. Therefore, it is more prone to suffer the effect of prosodic changes. Finally, in the concluding remarks, we point out some implications of our proposal for the analysis of the difference between Germanic and Romance languages, and for the notion of competing grammars.

2. SUBJECT POSITION IN THE DIACHRONY OF PORTUGUESE

The survey to be presented in this paper was conducted with an unprecedented amount of data for 16\textsuperscript{th} - 19\textsuperscript{th} century Portuguese, comprising 34,293 tokens in texts written by 16 authors born between 1502 and 1836\textsuperscript{iii}. This data has been extracted from a syntactically annotated corpus, and represents the first results made possible by this annotation. Some of the aspects to be discussed in the present section have been partially tackled in previous studies - in particular, Paixão de Sousa (2004), Galves & Paixão de Sousa (2005), and Galves et al. (2005) - all of which, however, were not conducted on the basis of syntactic annotation, and were limited to word order in sentences with clitic pronouns. The present paper confirms the results of these previous works, discussing sentences both with and without clitics, thus broadening the universe of analysis.

As we shall argue further on, we interpret the results of this survey as important evidence of a V2/V-to-C system in the authors of the first phase (i.e., 16\textsuperscript{th} and 17\textsuperscript{th} century authors). However, as with other Old Romance Languages, "V2" in Classical Portuguese (henceforth CIP) must be understood in a particular context: that of a null subject system. Among other effects, this means that in this language superficial verb-second coexists liberally with verb-first. Our central aim in this paper is to model the change between such a system and a canonical SV system – Modern European Portuguese (henceforth EP). In accordance with this aim, we will focus this section on the possible expressions of subjects in CIP: lexical (VS or SV) and null. Moreover, the various possible positions for the verb will be shown with reference to the data and discussion presented by Cavalcante et al. (2015), Gibrail (2010) and Antonelli (2011).

2.1 PRE-VERBAL, POST-VERBAL AND NULL SUBJECT FREQUENCY RATES. The most remarkable fact regarding subject positions in CIP is the high frequency of VS over SV, as compared to EP. Figure 1 below shows the rates of VS over SV (S lexical) in 16\textsuperscript{th} - 19\textsuperscript{th} century texts, revealing
two clear groups: in texts written by authors born in the 16th - 17th centuries, VS ranges from 36% to 77%, whereas in texts written by authors born after 1700, VS ranges from 17% to 34%. We take the high frequency of VS orders in 16th-17th century texts as one of the most important pieces of evidence for a V-to-C system in ClP:

FIGURE 1: The evolution of the rate of (X)VS in matrix clauses with lexical subjects 16thc.-19thc.

The data on subject postposition depicted in Fig. 1 includes both verb-initial constructions (VS)\(^v\) and constructions in which a preverbal element other than the subject appears in the preverbal position (XVS). We take X-fronted constructions (which include both XVS and XV, with X fronted and the subject null – not considered in Figure 1, but to be tackled below), which are quite frequent in the classical texts, as instances of general "XV", i.e., of "non-SV" orders, in which a constituent other than the subject occupies the preverbal position. We claim that in ClP, the preverbal position is reserved for discourse-prominent elements. We are not concerned, in this paper, with the exact nature of this position (and we refer to Antonelli, 2011, for a concrete proposal in the framework of Rizzi’s cartography).

The relevant point is that ClP is not an SV system, and preverbal subjects occupy the same position as other fronted elements. In (1-3) below, we illustrate all the possible patterns of the expression of the subject in the corpus: SV (1), VS (2), and null subjects (3):
Christ our Lord said to his Disciples, that the secret of that day is reserved only to the Father’ (Vieira, 1608)

‘The king started the church of São Vicente’ (Sousa, 1556)

‘and with his imprisonment, they changed their intent’ (Galhegos, 1597)

The frequency of each of these three possibilities for the expression of subjects in CIP is interestingly different from what might be documented for a canonical pro-drop SV system (such as EP). Figure 2 below shows the distribution of the possible patterns for subjects in main clauses, illustrated in (1), (2) and (3) above, between 1500 and 1850:

**Figure 2:** Evolution of the expression of subjects, 16th to 19th centuries

(% null subjects, ‘NS’; % preverbal subjects, ‘SV’; and % postverbal subjects, ‘VS’; in main clauses; grouped by 100 year periods)
As we can see, in 16th and 17th century texts, the proportion of postverbal subjects is 21% and 35%, respectively, while the proportion of preverbal subjects is 18% and 17%, and null subjects represent 61% and 48% of main clauses. In short, ‘VS’ in this period is on average higher than ‘SV’ and lower than ‘NS’. It is only after 1700 that preverbal becomes a favored position for lexical subjects in Portuguese texts, surpassing postverbal at rates of 41% against 12% in the 18th century, and 34% against 11% in the 19th century. Consider, in particular, that because we are comparing all three subject-placement possibilities for subjects (including null), we can clearly see that the decrease in postverbal subjects at the turn of the 18th century in fact corresponds to an increase in preverbal subjects (and not, for example, to an increase in the rate of null subjects, although this rate may oscillate; see below). To sum up:

i. The frequency of ‘VS’ decreases between the 17th and the 18th centuries;
ii. The frequency of ‘SV’ surpasses ‘VS’ at this same point;
iii. Null subject proportions vary, but show no clear tendency.

Although this general picture very much encompasses the fundamental data to be discussed in section 3, it is fair to point out that there is interesting variation among contemporary texts in the corpus and that this variation also contrasts the two periods under study (pre-18th century and post-18th century). Table 1 and Figure 3 below show this, detailing the data for SV, VS and null subjects previously shown above, this time for each of the 16 texts of our corpus:

**Table 1:** Evolution of the expression of subjects, 16th to 19th centuries

(％null subjects, ％SV, ％VS; in main clauses; by author).
The rates of null subjects vary considerably throughout the corpus (ranging, irregularly, from 35% in the text by Aires to 68% in the text by Sousa). We consider this ample variation to be expected, as the option for null subjects in a pro-drop language is related to textual, and not...
But most importantly, we do not consider the variation in the incidence of null subjects in Portuguese texts throughout this period to indicate parametric change as far as the null subject parameter is concerned. We are more interested here in the variations concerning the position of lexical subjects. This, of course, will also be related to textual constraints—but the effects of such constraints will be different in different grammars (a point to which we come back more precisely below). Crucially, in our data the variation in the position of lexical subjects presents different patterns in different sub-periods, and we interpret this as indicating a frontier between periods representing different grammars.

As Figure 3 shows, 16th-17th century authors present a wide range of variation in the position of lexical subjects: VS ranges from 12% to 41%, and SV from 9% to 27%. Additionally, within this period, we observe a higher rate of VS vs. SV in the authors born after 1550. However, for 18th-19th century authors, a more consistent pattern emerges, in which the VS range variation is narrower: from 8% to 16%. Furthermore, for all 18th-19th century authors, SV rates are consistently higher than the rates of VS (see the rates of SV vs. VS in Table 3 and Figure 3 for each text after Cavaleiro, born in 1702, in chronological order: respectively 28% vs. 15%; 54% vs. 11%; 36% vs. 11%; 34% vs. 13%; 28% vs. 11%; 42% vs. 11%; 34% vs. 16%; 32% vs. 8%). This is not true for 16th-17th century authors: in this period, some authors present more SV than VS, others, more VS than SV (for each author from Gandavo to Barros, born in 1675: respectively 19% vs. 16%; 21% vs. 12%; 24% vs. 16%; 9% vs. 22%; 21% vs. 32%; 27% vs. 35%; 15% vs. 25%; 12% vs. 41%).

Our first conclusion from the data presented so far is that there are two distinct patterns of variation in the position of lexical subjects over the period included in the corpus: the variation in 16th-17th century texts occurs within a wider margin and is more contrasting among different authors, whereas the variation in 18th-19th century texts occurs within a narrower margin and is more consistent among authors. Crucially, it is only after the 18th century that we see SV as a clearly predominant pattern in the texts (a central fact to which we come back further below).

As for the 16th-17th century period, we will show in Section 3.2 that, although the first 16th century texts in the corpus present a higher rate of SV than VS, these texts pattern with the remaining 16th-17th century texts with respect to their frequency of XV. Before this, we present further syntactic evidence regarding embedded clauses and adverb placement, and then turn to another important perspective on this data – the interpretation of the pre-verbal subjects in each period.

FURTHER EVIDENCE. Galves and Gibrail (2016) study the position of subjects in the same corpus as the present paper, but use a different set of data than ours, as it includes only transitive sentences, in both matrix and subordinate clauses. In this study, the authors show that post-verbal subjects are much less frequent in subordinate clauses than in matrix clauses in 16th-17th century texts, which is to be expected if VS derives from the movement of V to C. This can be seen in Figure 4 below, which shows that while the frequency of VSO in matrix clauses is 33% in the 16th century and 46% in the 17th century, in subordinate clauses it is only 15% and 19%, respectively (note, incidentally, that this difference is no longer observed after 1700). It is worth noting, moreover, that these VSO cases in subordinates are cases in which either the
complementizer is null or the main verb allows for CP recursion, which in both cases gives room for V-to-C, and consequently VS order\textsuperscript{vii}.

**Figure 4: SVO, VSO and VOS in matrix and embedded clauses**
(from Galves and Gibrail, 2016)

In this same study, Galves and Gibrail (2016) also find several instances of the VSAdv order, as shown in example (4) below:

\[(4)\] e sendo este negócio dos maiores, que podia ter uma Monarquia, and being this deal of the greatest, that could have a Monarchy

\[3\text{PS.ACC.CL=}\text{fiou} \quad \text{o animoso Rei inteiramente}\]

\[3\text{PS.PAST} \quad \text{entrust.3PS.PAST} \quad \text{the brave king entirely}\]

da intell\'eg\'encia e ind\'ustria de um s\'o homem

do\ a intelligence and of a only man

‘and being among the greatest of deals which a Monarchy could have, the brave king entrusted it entirely to the intelligence and industry of just one man’ (Barros, 1675)
Orders such as (4) above, with the adverb following the post verbal subjects, are typical of Germanic languages, in contrast with what is expected in Romance, where adverbs precede the pre-verbal subject, as Belletti (2004) has shown. In combination with the data shown above concerning embedded clauses, we interpret this as further evidence that VS in CIP is correlated with V-to-C movement.

2.2 THE INTERPRETATION OF PRE-VERBAL SUBJECTS A second important point we wish to make here with regard to the data on subjects in 16th-17th century texts is that the preverbal position in CIP is reserved for prominent elements of varied kinds, all of them dependent on the information structure. In the case of written texts (which is what we have in our hands), we may consider the text itself as the discourse context - and that means that different texts will produce different patterns of word orders. Paixão de Sousa (2004) pointed out, for instance, that SV is particularly frequent in texts with abundant narrative sequences, in which different participants of the narrated event take their turns in a segment of the text. This is the case of the text “Peregrinação”, by Fernão Mendes Pinto (1510), included in the present study, as illustrated in the following examples:

(5) O capitão-mor lhe respondeu que os embaixadores tinham seguro para suas pessoas.

‘The captain-major answered him that the ambassadors had personal insurance’ (Pinto, 1510)

(6) O brâmene lhe deu por isso seus agradecimentos

‘The brahman thanked him for that’ (Pinto, 1510)

(7) nosso capitão-mor cometeu então queimar-lhe a galé

‘our captain-major proceeded then to burn his gaol’ (Pinto, 1510)

As becomes clear when one examines the context from which the sentences above have been extracted, they are part of a narrative sequence that may be summarized as an account of a discussion between two characters - 'the captain' and 'the brahman'. Each time one of the characters is mentioned, describing their turn in the conversation, a constituent that refers to that character occupies the preverbal position, i.e., the normal position for V2-topics.

The same phrasal organization can be seen, naturally, in sequences in which the fronted element is not the subject. In such cases, we have XV(S) sequences - i.e., XV, with null subjects; or XVS, with postverbal lexical subjects. Take, for instance, the following sentences from the same text:

As becomes clear when one examines the context from which the sentences above have been extracted, they are part of a narrative sequence that may be summarized as an account of a discussion between two characters - 'the captain' and 'the brahman'. Each time one of the characters is mentioned, describing their turn in the conversation, a constituent that refers to that character occupies the preverbal position, i.e., the normal position for V2-topics.
(8) Ao mercador que me trouxe mandou.
To.the merchant that bring.order.
Pero de Faria dar sessenta cruzados...
Pero de Faria give.INF sixty cruzados...

'To the merchant who brought me, Pero de Faria ordered that sixty cruzados be given...' (Pinto, 1510)

Again, in this case, we are faced with a narrative sequence, with the characters taking turns in the narrated events; but now, the alternating characters (one of whom is 'the merchant' in (8)) take turns in receiving presents and instructions from another, constant character ('Pero de Faria'). Naturally, here, the grammatical subject of the sentences corresponds to the "agent" ('Pero de Faria'), and the dative PP corresponds to the "target" ('ao mercador que me trouxe'). Because the PP is the prominent constituent in the discourse, it appears preverbal, while the subject, being less prominent, does not.

XVS can therefore be accounted for in CIP as instances of V2-fronting of non-subjects. The proportion of SV and VS, therefore, may oscillate considerably according to the discourse nature of the texts in which they appear. It will be crucial for us to show that this oscillation dependent on discourse requirements is expected to be greater in a V2/V-to-C system than in an SV/non V-to-C system. As shown above in Table 1 and Figure 3, this is precisely what happens: – post-18th century texts present less variation among contemporaries than pre-18th century texts.

**FURTHER EVIDENCE ON THE INTERPRETATION OF POSTVERBAL SUBJECTS.** Further support for the claim that the interpretation of subjects differs in CIP and Modern EP is found in Galves and Gibrail (2016), the same study referred to above, regarding post-verbal subjects in particular. The authors argue that the interpretation of post-verbal subjects in the texts from the classical period is different from the interpretation associated with VS in EP – where, according to Costa (2004:79-80), VSO is felicitous only if both the subject and the object are foci, i.e. answer to the question “who did what?”, and SVO is the obligatory order when the whole sentence is new information or only the object is focused. This is clearly not the case in CIP, in which VSO does not require that the subject be the new information of the sentence, and SVO is not required when the entire sentence is new information (‘out of the blue’). The two following sentences, from Galhegos (1597), illustrate both cases. In (9), in the initial position of a narrative, the whole sentence is interpreted as new information, and in (10), where the referent of the subject was previously introduced as one of the protagonists of the story, only the object is focus. In both cases, SVO would be required in EP.:

(9) Em várias partes das fronteiras fizeram os castelhanos fumo.
in several parts of.the borders make the Castilians smoke

‘The Castilians made fire on several parts of the border.’

(10) tomaram-lhe os nossos algumas armas, e munições.
take=3PS.DAT CL the ours some weapons, and bullets
'Our people took from them some weapons and bullets.'

Galves and Gibrail (2016) argue that in most of the cases, post-verbal subjects are interpreted either as familiar topics or as continuing topics in CIP. According to them, ‘familiar topics are either proper names which refer to the main characters of the narratives, God and other religious entities (the Devil, the Holy Spirit), frequently quoted authors (the authors of the Gospels in the Sermons), or abstract or generic entities like “the enemies”, “humankind”, vices and virtues, etc.’ They give as an example the fact that in the biography of Frei Bertalomeu dos Mártires, written by Frei Luis de Sousa, born in 1556, out of a total of 40 post-verbal subjects, 20 refer to the Frei, who is the main character of the work. They argue that all these facts support the hypothesis that post-verbal subjects are not in a position associated with focus interpretation, i.e., differently from what is argued by Costa (2004) for EP, they are not in a low position in the clause. This is straightforwardly derived if the verb is itself in a high position.

2.4 Summing up. In broad terms, the analysis proposed so far is that SV in classical texts (1500-1600) and SV in modern texts (1700-1800) correspond to different structures, and different grammars: in the classical texts, SV corresponds to constructions in which the preverbal subject is topicalized just like any XV construction. In the modern texts, however, SV corresponds to subjects in canonical positions. In other words, an SVO grammar has emerged. Our central question now is why the old grammar was replaced by the new; this is what we explore in section 3 below, following a brief debate on some controversial issues involved in the loss of V2 in Romance in general.

3. Romance V2 revisited.

In this section, we propose an account on the conditions of the change from CIP V2 to EP SVO. Contrary to what has been proposed by important work on similar processes, we shall argue that this change is not related to any form of ‘instability’ derived from the presence of either null subjects or V1 and V3 orders in CIP. Based chiefly on the patterns of clitic placement, and following Galves and Paixão de Sousa (2005), we argue that the V3 order in this language derives from the availability of (at least) two topic positions preceding the verb, associated to distinct prosodic patterns. Speakers of CIP could perfectly differentiate either position when confronted with superficial V3 or superficial V2, and there was no instability in the system. The piece missing from this puzzle, as we shall argue further on, is prosody.

3.1 Romance V2 and its challenges. In order to discuss this, we first present a summarized account of Yang’s (2002) model of language change and his discussion on Romance V2. The model of language change proposed in Yang (2002) derives from a model of acquisition viewed as grammar competition such that, when a grammar successfully analyzes an utterance the child is exposed to, it is rewarded; when it fails, it is punished. More formally speaking (Yang, 2002:
“Upon the presentation of an input datum s, the child (a) selects a grammar $G_i$ with the probability $p_i$; (b) analyzes s with $G_i$; (c) if successful, rewards $G_i$ by increasing $p_i$; otherwise, punishes $G_i$ by decreasing $p_i$. At each step of the acquisition process, therefore, “each grammar $G$ is paired with a weight $p$ which can be viewed as the measure of prominence of $G$ in the learner's language faculty”. In cases where the linguistic environment is homogeneous, all linguistic expressions are generated by a grammar $G_i$ and, at the end of the process, $G_i$ is the only grammar the learner has access to. However, in the case of heterogeneous environments, no grammar is 100% compatible with the data. In this case, the model allows language learners to “form internal representations of coexisting grammars” (Yang, 2000: 241). This feature of the model strongly distinguishes it from other similar proposals of grammar selection, which assume that in case of ambiguity just one grammar is selected, as a result of general principles of economy that lead children to choose the simplest one (cf. for instance Clark and Roberts, 1993; Roberts, 2007).

The model has important consequences for grammar change, since, as acknowledged by Yang (2002:33), while a combination of two grammars is synchronically stable, it may be diachronically unstable. This is because, over time, the relative weight of the two grammars may change, and one of them may win the competition as it drives the weight of the other to 0. In fact, the model predicts that “once a grammar is on the rise, it is unstoppable” (Yang, 2002:132).

As a case study, Yang proposes an analysis of the loss of V2 in French. His model requires that in order for an SVO grammar to overtake a V2 grammar, there must be more evidence incompatible with V2 than with SVO. According to the author, evidence for V2 is VS (XVSO, OVS), and evidence for SVO is V3 (SXVO, XSVO). The SVO order, however, is ambiguous since it can be generated by both a V2 and an SVO grammar. Yang acknowledges that, from a quantitative point of view, SVO is very frequent in V2 languages, while VS patterns occur at a rate of approximately 25-30%. This means that the non-ambiguous evidence that acquirers of a V2 language have at their disposal has a weight corresponding to this rate. On the other hand, in SVO languages (like English) only 10% of all sentences are V3 patterns – i.e., are non-ambiguous. Following the author’s point of view, this means that the weight of the non-ambiguous evidence for SVO is weaker than the weight of the non-ambiguous evidence for V2. The competition model therefore predicts that “the 10% advantage of a SVO grammar cannot throw off a V2 grammar, which has 30% of VS pattern to counter” (Yang, 2002:135). This would account for the strong stability of V2 in Germanic languages, but leaves unexplained why V2 could be lost in Old French, and more generally in Old Romance languages. Yang's answer to this puzzle lies in the fact that Old French - as well as the other Old Romance languages - is a null subject language. In such languages, according to him, the evidence for V2 will be reduced in the total dataset because of the existence of null subject sentences. The author then observes that in three texts written in French at the turn of the 15th century, while null subjects occur at a rate of c. 40% and $V>2$ ranges from 11 to 15%, VS ranges from 5 to 18% – quite far from the 30% found in non-pro-drop V2 languages. In the competition model, this accounts for the fact that the SVO +null subject grammar eventually wins over the Old French V2 grammar. Yang concludes that the combination of pro-drop and V2 is “intrinsically unstable and will necessarily give away to an SVO (plus pro-drop) grammar” (Yang, 2002:137).
This is the statement we wish to debate, by examining whether Yang's model of competition of grammars accounts for the dynamics of the loss of V2 (V-to-C) in the history of another pro-drop Romance language, European Portuguese.

Our data on ClP have shown so far evidence of an increase in preverbal subjects between the 17th and 18th centuries, as we have shown in Section 2 (cf. Fig. 2). This would mark the 1700s as the point in which SVO supersedes V2/V-to-C in the diachrony of Portuguese. However, this change in the data is not preceded by a situation where VS is superseded by V3. As shown in Figure 6 (from Cavalcante et al. 2015), ClP texts from the 16th and 17th centuries present rates of 13% and 10% of V3 sentences, whereas VS patterns in those centuries range from 21% to 35% (cf. Fig. 2).

Notice that from the point of view of Yang's analysis, the advantage of V2 grammars over SVO grammars would be computed from the difference between the frequency of VS and the frequency of V3. Therefore, if we reason within Yang’s framework, we meet a puzzling fact: it would seem that in the diachrony of Portuguese, SVO patterns replaced V2 patterns (as shown by Figure 2 above, as well as by Figure 6, Section 3.2) even without a change in the relation between V3 and VS – since the rise in SV is not preceded by a significant change in the rates of V3. Still following Yang’s model, this would mean that the V2 grammar was strongly evidenced in the data, and there was no reason why children should have selected the SVO grammar.

**Figure 5:** Evolution of V1, V2 and V3 in the diachrony of Portuguese
(from Cavalcante et al. 2015)
The fact remains that the word order patterns present a steep change at the turn of the 1700s, and this drastic change in the space of one generation must be explained. We shall attempt to do so below.

3.2 AN ALTERNATIVE ACCOUNT OF ROMANCE V2. Our hypothesis about the loss of V2 in Portuguese depends on a deeper reflection on the difference between a language like CIP and Germanic languages. This reflection profits greatly from the analysis proposed by Frey (2006) for V2 in German and recently discussed and extended to other Germanic languages by Light (2012).

Frey (2006) argues that in German, two different processes underlie the movement of a phrase to Spec/CP, yielding V2 order. One is a formal movement, due to the formal (EPP) properties of Comp, more specifically Fin, and the other one is the topicalization of some element of the clause, which the author calls “True A-bar-movement (TAB)”, to higher positions in the CP field. Frey argues at length that only A-bar movement entails a pragmatically marked interpretation, which is, according to him, one of contrast xi. This accounts for the longstanding fact that the interpretation associated with the preverbal position in German is not the same in all cases, which would remain unexplained under a unitary analysis of movement to Spec/CP. This also accounts for the fact that SVO is by far the most common order in German (c. 70% according to several authors, cf. Lightfoot 1997 quoted in Frey 2006, among others). Since subjects occupy the highest position in the so-called Middle Field (the post-Fin layer of the sentence), they are the more natural candidates to undergo movement in order to satisfy the EPP feature of Fin. However, according to Frey, it is not only the subject that can be moved by Formal Movement. Any other constituent moved higher than the subject by Scrambling in the Middle Field, can undergo Formal Movement as well, and therefore lack contrastive interpretation. As emphasized by Frey and by Light, Formal Movement is a property typical of V2 languages, and is satisfied by any constituent occupying the highest position below Fin. Light (2012) extends Frey’s analysis to other Germanic languages and claims that: “… TAB remains a constant across the Germanic language family, but only V2 languages have FM as an option, because FM is a phenomenon inherently linked to the V2 requirement, existing solely to fill Spec,CP as a last resort due to what has been described as an EPP feature on C.” (Light 2012: vi).

Attributing both Formal Movement and TAB to a feature F, Light expresses the difference between English and Germanic V2 languages in the following way:

“In non-V2 languages, such as English, Spec,CP in matrix clauses lacks the EPP requirement which leads to Formal Movement. Therefore, the [F] feature on C does not behave in the same way. Just as in V2 languages, C may carry the requirement to probe for a [+F] feature, and in this case TAB may result, just as before. The difference, however, is that if the [F] feature on C does not find an [F]-marked constituent (a constituent with the [+F] feature), the derivation would crash. When an XP with the [+F] feature is not fronted, no other type of fronting will occur. Thus, in non-V2 languages, we must also assume that a version of C exists which does not carry an [F] feature which must be valued. This is the version of C in the default clause structure of English, where no fronting occurs at all.
This is a rough sketch of how we may account for the relationship between TAB in V2 and non-V2 Germanic languages. Although True A-Bar Movement has clearly been ‘adopted,’ for lack of a better term, to help satisfy the EPP-like requirement on Spec,CP in V2 languages, any analysis must capture the fact that it exists independent of this requirement, as languages like English clearly show. (Light 2012: 155-156)

The idea that we want to put forth here is that TAB is not restricted to Germanic languages, and many other languages have it. As for Romance languages like ClP, we suggest that the similarity with, and the difference from, Germanic V2 languages may lie in the following point: CIP has V-to-C(Fin) but lacks Formal Movement to Spec/C (Fin). Constituent fronting therefore only occurs through TAB, under specific discursive conditions. This would straightforwardly account for the existence of V1. As for the frequency of V3, it suggests that while only one specifier position is licensed in the CP level in V2 languages, more than one is legitimate in languages like CIP. This could well be due to the different position of V. We will comment on it briefly in the Concluding Remarks. Moreover, we shall see in Section 3.3 below that evidence of two available positions in pre-verbal position in CIP comes from clitic-placement.

In addition, and very interestingly, this analysis also explains a fact that up to now had remained unnoticed about V2 orders themselves: the rate of XV orders in which X is not a subject is higher in CIP than what is reported for German.

In order to understand this, it is important to observe that when we compare V2 orders in German and CIP, we must keep in mind that one of them is a null-subject language. So, even if the piece of data presented above (cf. Fig. 2) does show that the frequency of VS is globally higher than the frequency of SV in the 16th and 17th centuries, it may not be sufficient to simply compare the rates of SV and VS, i.e. the possible positions for lexical subjects. In a language like German, any fronting of a non-subject constituent will result in VS (XVS). However, in a null-subject language, when a non-subject constituent is moved to preverbal position, the subject, of course, will not necessarily remain postverbal; it may be null.

We suggest that the examination of XV in general (i.e., XVS plus XV-pro) permits an alternative way of detecting V2 in Portuguese. This has been done by Cavalcante et al. (2015), as can be seen in Fig. 6 below, in which V2 sentences in which the preverbal phrase is not a subject are separate from V2 sentences that are superficially SV. In the graph, V2=X+OV(S) stands for any non-subject constituent preceding the verb, be it the object or others, and be it with a lexical postverbal subject or a null subject; and V2 = SV(X) stands for superficial V2 order where a subject precedes the verb.

**Figure 6:** Evolution of V1, V2 (SV and non-SV) and V3 in the diachrony of Portuguese (from Cavalcante et al. 2015)
As Figure 6 shows, in the 16\textsuperscript{th} and 17\textsuperscript{th} centuries, the rates of XV are much higher than the rates of SV – 43\% and 45\% respectively, as opposed to 16\% and 13\%. In the 18\textsuperscript{th} and 19\textsuperscript{th} century, while the percentage of SV rises to 46\% and 56\% respectively, the XV orders (where X is not a subject) drop to 18\% and 17\%. To sum up: in V2 orders in general, CIP displays more sentences in which the preverbal phrase is not a subject than sentences in which the preverbal phrase is a subject. It is worth emphasizing that this proportion (43-45\% non-subject XV) is higher than what has been reported for German (30\% non-subject XVs). If we look at individual authors, the XV data can also be very interesting, as 16\textsuperscript{th} – 17\textsuperscript{th} century authors with high rates of SV have even higher rates of XV: Pinto, for example, presents 51\% of XV (against 20\% SV, 28\% V3 and 1\% V1), according to Cavalcante et al (2015).

This means that, even taking into account non-V2 orders – V1 and V3 – and even taking into account the possibility of null subjects, the data for CIP shows a definite preference for features that characterize V2 languages: the VS order (which is quite high – 21\%-35\%), and the XV order. In fact, we consider the evidence for V2/V-to-C in this data to be very robust.

There is a final crucial point: if our hypothesis that CIP is a grammar in which the preverbal phrases are fronted only for discursive reasons is correct, we expect a high variation among authors. This is exactly what we find, as we have shown in Section 2 (Table 1 and Figure 3), when we pointed out that the VS/SV variation among 16\textsuperscript{th} – 17\textsuperscript{th} century authors is considerably wider than the variation among Modern authors.

The natural question then is whether there is a relationship between the null subject property and the lack of formal movement. Antonelllli (2011) argues that in CIP, the EPP features of C are satisfied by the phi-features on the verb, in the same way the EPP features of T are in non-V-to-C pro-drop languages. From this point of view, if Formal Movement derives from, or is nothing
but, EPP, as claimed by both Frey (2006) and Light (2012), the absence of Formal Movement in ClP is a consequence of pro-drop.\textsuperscript{xv}

We can now go back to the issue of the instability of V2 in pro-drop languages, and more specifically to what caused its loss in the space of a generation in ClP.

### 3.3 The change from Classical to Modern European Portuguese

As initially observed by Paixão de Sousa (2004), the superseding of VS by SV is registered in the texts at the same time as the beginning of the change in clitic-placement, which led to the intricate modern pattern. In effect, European Portuguese differs from other Romance languages in that in non-dependent affirmative tensed clauses, where the verb is not preceded by a focalized or interrogative phrase, clitic pronouns are categorically enclitic. (cf. Galves and Sandalo 2012 and references therein).\textsuperscript{xvi} We illustrate this fact with preverbal subjects, since this case is highly relevant in this paper:

(11) a. O Paulo falou-me the Paulo speak.3PS.PAST=1PS.DAT.CL

b. *O Paulo me falou the Paulo 1PS.DAT.CL= speak.3PS.PAST

‘Paulo spoke to me’

However, up to the end of the 19\textsuperscript{th} century, there was variation between proclisis and enclisis in the currently obligatory enclitic contexts, as shown in Figure 7.\textsuperscript{xvii} In the contexts where ClP presents variation, proclisis was the preferred pattern in 16\textsuperscript{th} and 17\textsuperscript{th} century texts (cf. Paixão de Sousa 2004; Galves et al. 2005, and Figure 7 below). From 1700 on, enclisis with preverbal subjects increases sharply, as Fig. 7 shows for the corpus of the present study, confirming the general picture that had been produced by Paixão de Sousa (2004) and Galves et al. (2005):
A good summary of this data would be one that states that texts written by authors born after 1700 reveal enclisis rates of 17% to 97% in SV sentences, while texts written by authors born before 1700 exhibit enclisis rates of 0% to 18% in this context. This would be so, if it were not for one 17th century text: Antonio Vieira's “Sermons”, with a 52% enclisis rate in SV, a rate that would seem to put him closer to modern writers than to his contemporaries.\textsuperscript{xviii} It is at this point that the quantitative analysis has to be complemented by closer scrutiny of the data in context. As shown in Galves (2002) and Galves et al. (2005), Vieira's high rate of enclisis is correlated with a stylistic option. We will summarize this analysis here.

Galves (2002) and Galves et al. (2005) showed that SV with enclisis in Vieira's “Sermons” corresponds to sentences in which the preverbal subject strongly contrasts with another term in the sentence. This can be seen in the examples below, in which \textit{Elles} ("they") and \textit{Christo} ("Christ"), and \textit{Deus} ("God") and \textit{os homens} ("the men"), respectively, are contrasted.

(12) Elles \textit{conheciam-se}, \hspace{1cm} \textit{como homens},
They know.3PP.PAST=3PP.REF.CL, \hspace{1cm} as men,

\textit{Christo} \textit{conhecia-os}, \hspace{0.5cm} \textit{como Deus}.
Christ know.3PP.PAST=3PP.ACC.CL, \hspace{1cm} as God

'They knew themselves as men, Christ knew them as God' (Vieira, 1608)
Deus julga-nos a nós por nós;

os homens julgam-nos a nós por si.

'God judges us for ourselves; men judge us for themselves' (Vieira, 1608)

As shown in those same studies, Vieira's “Sermons” are a clear-cut case, because all of the SV-cl constructions are very clearly interpretable as contrastive topicalizations. As is also discussed there, Vieira's patterns of clitic placement in the “Sermons” contrast sharply not only with the patterns in the texts written by his contemporaries, but also with his own patterns in another text - his letters, in which he presents 100% proclisis in SV. Finally, the authors pointed out that in the Sermons, proclisis is used not only when the preverbal phrase is focalized, as claimed by Martins (1994), but also in sentences in which the preverbal topic is not markedly contrastive, as in the examples below.

O Evangelho o diz: Erunt signa in sole, et luna, ...

' The Gospels says it: Erunt signa in sole, et luna, et stellis'

Estes tesouros, pois, que agora estão cerrados, se abrirão a seu tempo

'These treasures, thus, that now are enclosed, will open at their own time'

In the examples above, the preverbal phrases may be termed, following Frascarelli & Hinterhölzl (2007), "familiar topics" in (14) and "continuing" topics in (15), both distinct from the contrastive topics in (12-13). In previous works (Paixão de Sousa 2004, Galves et al. 2005), it was argued that in CIP, the alternation between enclisis and proclisis derives from two different positions of the preverbal phrase. In one of them, the preverbal phrase is “external” to the clause boundary, and the verb is in a structural first position. In the other, the preverbal phrase is “internal” to the clause. In both cases, the verb is in a high position, arguably C, as in V2 languages. This is represented in (16), from Galves et al. (2005:52):

Following Galves and Sandalo (2012), we now suggest that the boundary that is relevant for clitic placement in CIP is not syntactic but prosodic and that the alternation between enclisis and proclisis in this language is a case of the application of the Tobler-Mussafia law, which prevents clitics from appearing in the first position of the Intonational Phrase. From this point of view, and adopting a cartographic approach to the left periphery, the difference in the position of the
preverbal phrases can be derived from the different positions made available by the different topic nodes. Frascarelli and Hinterholzl (2007), for instance, argue that the topics that occupy the higher positions of the left-periphery of sentences, namely aboutness topics and contrastive topics, are associated with prosodic contours that are independent from the rest of the clause. This nicely accounts for the effect on clitic placement observed in Vieira’s sermons.

Figure 8 shows that the decrease of VS and the increase of SV-cl go hand in hand in the corpus analyzed in the present paper as well:

**Figure 8:** Comparative evolution of the rate of VS (S, lexical) and of enclisis in clauses with preverbal subjects

Up to 1700, SV-cl clauses are very marked constructions. We have seen above that, with the exception of Vieira’s Sermons, enclisis ranges from 0% to 18% in matrix SV sentences in the authors from the 16th and 17th century. In the authors born in the first half of the 18th century, we see that enclisis with preverbal subjects occurs at frequencies of 17% (Cavaleiro, b. 1702), 28% (Aires, b. 1705), and 44% in Marquesa de Alorna, born in 1750. After that, the frequency of SV-cl reaches almost 100% percent in the last author of our corpus, Ramalho Ortigão, born in 1836. The hypothesis we put forth here to explain this is that the increase in enclisis with preverbal subjects (as well as with other preverbal phrases, although at a lower rate – cf. Galves et al. 2005), is the effect of a phonological change that affected European Portuguese at some point in the 17th century (cf. Frota et al. 2012 for an analysis based on the Tycho Brahe Corpus), and
favored enclitic placement. In the following sections, we provide more details on this change and propose a model of its effect on clitic-placement, and then, on the reinterpretation of the position of the subject.

The prosodic change. The phonological change that is at the source of the current Portuguese prosodic pattern was initially noted due to its impact on the pronunciation of pre-tonic vowels. This effect was registered for the first time in a Grammaire Portugaise published in Paris in 1682 (cf. Teyssier, 1980), which mentioned that words like ‘cortar’ (to cut) were sometimes pronounced as /curtar/, with the raising of the pre-tonic vowel /o/ to /u/. This was a novelty because until then, this kind of raising was provoked by vocalic harmony, which is clearly not the case in /curtar/ since the last vowel is open. Teyssier (1980) also mentions a Compendio de Orthographia published in 1767 that contains a list of errors like ‘murar’ instead of ‘morar’ (to live), ‘purtagem’ instead of ‘portagem’ (toll), ‘tucar’ instead of ‘tocar’ (to touch). Marquilhas (2000:260), studying texts written during the 17th century by non-educated people, argues that the frequent use of epenthetic [e] in words like ‘estragado’ (spoiled), written as ‘esteragado’, can be a reflex of the fact that a word like ‘parecer’ (to seem) is already pronounced as /parcer/ i.e with a very reduced expression of [e], close to its total deletion, like in EP. It is in the 19th century, that the extreme realization of the phenomenon of vowel reduction, i.e. vowel deletion, is observed by the phonetician Gonçalves Vianna, (Apud Révah 1956), who complains that the actors of his time are no longer able to properly read the verses of the 16th century poet Camões with all their syllables, as illustrated by (17 a and b, which follow Vianna’s representation):

(17)  
a. E se vires que pode merecer-te
b. E se vir’s que pode mer’cer-te.
And if see.2PS.FUT that can deserve.INF=2PS.ACC.CL

'And if you see it may deserve you'

According to Gonçalves Vianna, a 19th century Portuguese speaker pronounces the original (17)a. like (17)b. where two /e/ are deleted and consequently, two feet are missing. He clearly understands this change as affecting the rhythm of the language, when he comments on the derived difference between European Portuguese and other Romance languages in the following terms: "The distance between stressed and unstressed vowels, that is, the difference of intensity between them, may be big or small. Thus, the difference between stressed and unstressed in Germanic languages is maximal; smaller is the difference in Portuguese; even smaller is the difference in Spanish; and minimal is the difference in French.” (Gonçalves Vianna 1892:16 apud Frota et al. 2012). Vianna’s comment is very much reminiscent of the distinction between stress-timed and syllable–timed languages, and expresses the idea that EP moved away from the latter and came closer to the former. As argued by Revah (1956) “this is the most serious modification of the Portuguese pronunciation after the 16th century because it modified the very structure of words”. Another related property that can be inferred to have emerged in this change is the tendency to align stress and word boundary both in production and in perception. Several works have shown that, in contrast with what happens in Brazilian Portuguese - which was not affected by the prosodic change -, secondary stresses in EP tend to fall on the first syllable of the
words (cf. Frota and Vigário 2001 and Sandalo et al. 2006 for a computational implementation based on Optimality Theory). The crucial point for the present discussion is that this obviously conflicts with the preverbal placement of clitics since, being unstressed by nature, they are not good candidates to receive secondary stress.

The precise location of this phonological change in time is important if we want to sustain the hypothesis that it triggered the syntactic change visible in the authors born at the beginning of the 18th century. Beyond the scarce testimonies by grammarians, and the complex interpretation of facts such as those commented above, this information is not easy to provide. Frota et al. (2012) tried to detect the moment of the change using aspects of prosody easily retrievable from written texts: the syllabic and stress structure of the words. Applying a Bayesian approach to the evolution of the data, they concluded that the pattern observed in the 17th century was significantly different from that of the 16th century and identical to the 18th and 19th century patterns. This means that a change had occurred at some point in the 17th century. This is a welcome result since it is consistent with the initial testimonies about the segmental correlates of the change.

A MODEL OF PROSODY-DRIVEN SYNTACTIC CHANGE. The analysis of the phonological change affecting pre-tonic vowels proposed above leads us to hypothesize that the frequency of enclisis in variation contexts grew significantly in the second half of the 17th century in spoken language, although this did not appear yet in written texts. The second crucial step is that the increase of enclitic placement has the effect of making the Subject V-cl order unmarked. Hinterholzl (2009:50-51) claims that “syntactic structures are not marked per se (say, in terms of complexity), but count as marked or unmarked if they realize marked or unmarked prosodic patterns. Since the unmarked word order in a language is defined by the predominant, that is to say, the most frequent prosodic pattern in a language, a change in frequency of use of a prosodic pattern can lead to a change in unmarked word order.” If he is right, this means that XP V-cl, and crucially, Subject V-cl, ceases to be a marked word order at some point of the diachrony of European Portuguese. As we shall see below, this implies that the initial XP is no longer obligatorily associated with an independent intonational contour. This has two consequences: 1) the reanalysis of the preverbal subject as occupying a subject position and no longer a contrastive topic position, and 2) the change in the restriction on clitic-first. If the subject and the verb are in the same intonational phrase, the restriction on clitic-first can no longer be derived from the Tobler-Mussafia law. Summing up, the model can be outlined in the following way:

1. Enclisis is favored in variation contexts with the new prosodic pattern
2. Increase in frequency of Subject V-cl
3. Loss of markedness of Subject V-cl
4. Reanalysis of the position of the subject in Subject V-cl
5. Loss of V-to-C and reanalysis of enclisis.

In the following sections, we give further empirical evidence for this scenario.
Further evidence of the loss of markedness of enclitic constructions. As previously mentioned, Cavaleiro (1702) and Aires (1705) are likely to represent the beginning of a curve of change. However, this is not evident from the purely quantitative data – their rates of enclisis (17% and 28% respectively) are not particularly higher than some authors from the previous generations. Their rates are in fact lower than Vieira’s in the 17th century (52%). Again, a closer look at the data is necessary. The comparison with Vieira's Sermons is very instructive in this respect, because, as we saw above, all cases of enclisis in the Sermons correspond to sentences in which the preverbal phrase is interpreted as a contrastive topic. When the preverbal phrase is a non-contrastive topic, however, proclisis appears without exception. In Cavaleiro, on the other hand, there is at least one case in which the preverbal subject of an enclitic sentence is clearly not contrastive:

18) Estes meios empregavam-se de duas sortes e tinham dois nomes. 
Those means use.PAST=3PP.REF.CL of two kinds and had two names

'Those means were used in two ways and had two names.'
(Cavaleiro, 1702)

In (18), “Estes meios”, these means, is a continuing topic, which shows that preverbal subjects with enclisis can be assigned a neutral interpretation. The analysis of the correspondence of Marquesa de Alorna (born in 1750) shows that this is a tendency for the generations to follow. In (19)-(20) we see that both proclisis and enclisis can be used with a subject whose interpretation is that of a continuing topic:

19) Esta reflexão lhe basta para saber quem deve aceitar ou recusar
This reflection 3PS.DAT.CL suffice.PRES for know.INF who must.PRES accept.INF or refuse.INF

‘This reflection suffices in order for you to know who to accept or to refuse’, (Alorna, 1750)

20) Esta resposta aclarou-me ...
This answer clarify.PAST=1PS.ACC.CL ...

‘This answer enlightened me…’, (Alorna, 1750)

The variation in (19)-(20) illustrates the competition between CIP and EP. (19) is representative of the former, with the preverbal phrase in a topic position prosodically integrated to the rest of the clause and the clitic, consequently, proclitic. (20), by contrast, is produced by EP, with the preverbal phrase in subject position and obligatory enclisis.

An additional novelty shows up in the texts of the first generation of the 18th century concerning the use of enclisis in V3 sentences. Galves and Paixão de Sousa (2005) observe with a partially different corpus, that in the 16th and 17th centuries, enclisis is possible with V3, and like with V2, it is marginal. However, out of the three possible orders XXY, SXV and XSV (X=non-
subject), the last one, with the subject between a non-subject and the verb, is never found with enclisis, although it is frequent with proclisis. This changes with the first authors of the 18th century, in which we do find the XSV-cl order, as illustrated in (21) and (22). This fact suggests that a new position for the subject was made available, which is no longer sensitive to the restriction observed before:

(21) e verdadeiramente estes dois homens só divertem-me
and truly these two men alone amuse.3PP.PRES=1PS.ACC.CL
mais que a comédia toda junta.
more than the comedy all together

‘and truly these two men alone amuse me more than all the comedy’
(Cavaleiro, 1702)

(22) por isso os nossos afectos mudam-se
for this the our affects change.3PP.PRES=3PP.REF.CL

‘for this reason our sentiments change’ (Aires, 1705)

In sum, we take the two novelties described so far (namely, the emergence of XSV-cl and the use of SV-cl where S is not a contrastive topic) as evidence that a new, SVO, grammar is in competition with the old, V2/V-to-C grammar in the texts of the generations born after 1700. Regarding clitic placement, the new word order patterns evolved gradually – the modern, categorical use of enclisis in SV was almost attained in the 19th century texts. Regarding VS, the modern pattern was already instantiated in the 18th century. As we saw in section 1, there was a steep decline in the rates of VS in the first generation of authors born after 1700. The range of around 10% postverbal subjects in those texts corresponds to postpositions that are produced by current EP, and which, according to the literature (Ambar, 1992; Costa, 2004, a.o.), correspond either to unaccusatives or to the interpretation of the subject as focus and “residual” VS (such as inversions with affective operators).

Evidence that enclisis is no longer derived from the Tobler-Mussafia law. One of the contexts in which there is alternation between enclisis and proclisis in CIP is when a dependent clause immediately precedes the verb, as illustrated in (23) and (24) from Barros (1675):

(23) Para os começar a render, amimou-os
To begin.INF to tame.INF, please.3PS.PAST=3PP.ACC.CL
com donativos
with gifts

‘To begin to tame them, he pleased them with gifts’.

(24) Vendo-o um Cónego no adro daquela antiga Sé,
Seeing=3PS.ACC.CL a canon n the square of.that ancient church,
As a canon saw him in the square of that ancient church, he told him: ...

In CIP, the variation between proclisis and enclisis in this context is different from what we observed above with other preverbal constituents. It is subject to great variation from author to author, and some of them are highly enclitic in this case (cf. Galves et al. 2005). From 1700 on, it follows the general tendency towards the generalization of enclisis, and like in the other contexts, the variation continues until the 19th century. The important point for our discussion is that in the texts written by authors born in the 16th and 17th century, the placement of clitics is sensitive to the length of the preverbal clause, while it is no longer so in the authors born from 1700 on, as shown by Table 2 below (from Galves and Kroch, 2016). This is exactly what we predict if the Tobler-Mussafia law is active in the first period and no longer plays a role in the second one.

**Table 2**: Effect of preposed clause length on frequency of enclisis by period (from Galves and Kroch, 2016).

<table>
<thead>
<tr>
<th></th>
<th>Before 1700</th>
<th>After 1700</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clauses &lt;= 8 words</td>
<td>% enclisis</td>
<td>.47</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>209</td>
</tr>
<tr>
<td>Clauses &gt; 8 words</td>
<td>% enclisis</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>70</td>
</tr>
<tr>
<td>% enclisis long - % enclisis short</td>
<td>.13</td>
<td>.03</td>
</tr>
</tbody>
</table>

Table 2 shows that, before 1700, enclisis occurs at a frequency of 60% in clauses containing more than 8 words, while in clauses containing 8 words or less, it occurs at a rate of 47%. The difference between the two contexts is therefore .13. By contrast, after 1700, this difference is close to 0. This reinforces the claim that what governs enclisis from then on is no longer a phonological restriction depending on the position of intonational boundaries and that $XV$-cl has ceased to be a marked construction. xxvii

4. **Concluding remarks.**

In this paper, we have proposed an alternative view of the loss of V2/ V-to-C in CIP, which derives it from a change in the prosodic basis of the informational structure associated with SV-cl sentences. In this respect, we have challenged Yang’s claim that V2 is unstable in Romance languages because of the existence of null subjects. The history of European Portuguese shows that this cannot be the case, since null subjects stably co-existed with properties typical of V2 languages (VS and XV) over centuries.
More generally, we argue that what has been dubbed ‘instability’ of V2/V-to-C plus pro-drop in the literature derives from the fact that pro-drop V-to-C languages lack formal movement, which means that constituent fronting is dependent only on discursive conditions. Since these conditions are in turn linked to prosodic structure, a prosodic change can have a dramatic effect on the perception learners have of the syntactic structure. In this sense, our analysis is close to the pioneering work on Old French by Marianne Adams who argued that the loss of V2 in this language was due to the loss of the Germanic stress. Here, we argued that the history of European Portuguese provides us with one more case study illustrating prosody-driven change.

It must be noted that the approach defended here allows us to somehow reconcile the two antagonistic lines of analysis about the V2/V-to-C phenomenon in Old Romance languages. On one hand, many authors argue that it is similar in nature to Germanic V2, in the sense that the verb moves to C or one of the categories of the C layer. On the other hand, other authors rely on the frequency of V1 and V3 in those languages to deny their similarity with Germanic languages. Adopting the latter view, Sitaridou (2012:556) claims that “V2 word order obtained in Old Romance is an epiphenomenon of information structure”. In the analysis proposed in this paper, we emphasize that V2 order in CIP depends exclusively on discursive requirements, in contrast with Germanic languages, in which V2 is in most cases the result of a purely formal movement. This claim is entirely compatible with Sitaridou's claim above. However, from our point of view, this does not entail that the structure of main clauses in a language like CIP does not share the crucial property of V2 languages, which is the activation of the CP layer in affirmative clauses. We have argued that the frequency and the interpretation of VS as well as the rate of XV empirically support the conclusion that it does.

The consequence of this analysis amounts to shifting the difference between Germanic and V-to-C Romance languages from structural vs. linear V2 to formal-plus-discursive vs. discursive-only movement to Spec/CP. This accounts for the frequency of V1 in Romance languages, since a phrase only moves to the preverbal position when there is a discursive motivation for it. With respect to V3, an auxiliary hypothesis is needed. We tentatively propose that it has to do with different positions of the verb in the CP layer. Frascarelli & Hinterholzl (2007) argues that in Germanic languages, the verb is in Force. Antonelli (2011) proposes that it is in Fin in CIP. This would allow for more than one phrase to occur in preverbal position in the latter, in contrast to the former. Additionally, we derive from this discursive-only movement to Spec/CP the historical fact that V-to-C in Romance is more prone to change than V-to-C in Germanic languages.

Finally, in Section 3, we have shown that in the texts written by authors born in the 18th century, there is evidence of competition between two grammars: the old grammar of CIP, and the new grammar of EP. There are two alternative ways of understanding this competition. The first approach would be to interpret the variation registered in the texts as evidence of variation in the data available for acquisition of a certain generation. This is, for instance, the point of view of Yang (2002). As we discussed in Section 3.1, the author argues that the acquisition process consists of competition between grammars and that, in the presence of a heterogeneous environment, children can acquire two grammars, each one associated with a different weight.
He also claims that the combination of two grammars remains stable in the speaker’s mind, but is diachronically unstable, which accounts for grammar change after several generations. The empirical evidence for this analysis would be the variation found in historical texts (Yang 2002:132-133). This model of language change, however, can be questioned from a conceptual point of view. It is far from being commonly accepted that children, given certain conditions, select two different grammars at the end of their acquisition process. Lightfoot (1979) and Clark and Roberts (1993), for instance, argue that general processes of simplicity or transparency lead children, when confronted with ambiguous data, to select the grammar that generates the simpler structures. A second approach to variation found in historical texts is to interpret it not as the cause, but rather as the consequence of grammatical change. In this view (cf. for instance Kroch 2001), the variation in texts is not taken as being produced by the existence of two different grammars in the speaker’s mind as the result of his acquisition process, but rather as the socio-linguistic effect in written texts of former grammatical changes. The competition takes place between the unique grammar selected by the writers in their acquisition processes, and fragments of old grammars, acquired later, due to a normative pressure to which written texts are particularly sensitive.

Our analysis of the change between ClP and EP relies on the latter view. We have argued that the drastic change in the position of subjects was the result of the reanalysis of SV sentences as having an underlying SVO order, in which the subject no longer occupied a topic position. We have also suggested that the change in clitic-placement played a crucial role in this reanalysis. The two changes, then, are correlated – but we do not claim that they are the effect of the same parametric change. In fact, if they were, we would expect their curves of evolution to be constant. According to the Constant Rate Hypothesis (Kroch, 1989; 2001: 721), “the rate of change in different surface contexts reflecting a single underlying parameter change is the same”. This is not the case of the change in subject position and the change in clitic-placement in Portuguese. As can be seen taking together Figures 2, 3, 4 and 7, the rate of change in clitic-placement is different from the rate of change in the position of subjects: while the former happens in the span of a generation, the latter takes almost two centuries before reaching completion. In fact, given the data presented in this paper, the Constant Rate Hypothesis forces us to conclude that the change in subject position and the change in clitic-placement are not the effect of the same parametric change. It goes beyond the limits of this paper to discuss in detail the exact nature of the underlying changes involved. What we present here, in this regard, concerns the patterns of the evolution of each phenomenon in the texts. We take the difference between the evolutions of enclisis and SV to be derived from the fact that clitic-placement is a highly salient phenomenon, to which speakers are sensitive. Additionally, once the position of preverbal subject changed, the proclitic or enclitic position of the pronoun ceased to be associated with distinct prosodic patterns, and therefore lost any discursive effect on the interpretation of the sentence. In this situation, speakers ceased to discursively discriminate proclisis and enclisis - but, as proclisis was the more frequent choice in the older generations, they continued to use it, and only progressively introduced in the written language the innovative form, which is enclisis. The view of grammar competition in texts as a result of previous grammar changes, therefore, is crucial to the conclusions we draw from the data on ClP in this paper.
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The TYCHO BRAHE PARSED CORPUS OF ANNOTATED PORTUGUESE consists of texts written by authors born between 1380 and 1836, and currently comprises 73 texts (16 of which are available with syntactic annotation). The Corpus is freely available for research and download at http://www.tycho.iel.unicamp.br/~tycho/corpus.

In the more traditional approach, Old Portuguese is the period that goes from the first remaining manuscripts, at the turn of the 12th century, to the first half of the 16th century. However, many scholars divide it into two periods. The first one corresponds to the Galician-Portuguese phase, which lasts until the mid-14th century. The second one is a transition period between Galician-Portuguese and Classical Portuguese, generally called Middle Portuguese (cf. Castro 2006).


The data were extracted from 19,850 non-dependent clauses, and included all verbs except ‘ser’ (to be). Because of their being categorically VS, we dropped from the quantification all the occurrences of parenthetical clauses following direct speech, as in (i):

(i) - Como? - exclamou António de Queirós.

iv In what follows, the date assigned to the texts is the birthdate of their authors. This is due both to a theoretical reason and to a pragmatic reason. As for the former, it is consistent with the generativist claim that speakers select their grammars in the process of first language acquisition and these do not change in individuals after the critical period. The pragmatic reason has to do with the fact that in some cases it is difficult to date the texts themselves, either because they were published long after they were written or because they are composed of pieces written over a long period of time. This is the case, for instance, of correspondences. Paixão de Sousa (2004: 200-207) discusses this issue at length and argues that the dynamics of change make more sense if we refer to the birth of the authors than if we use the date of the texts.

v An anonymous reviewer raises the issue of a possible change in the interpretation associated with V1 before and after the change. We leave this very interesting question for further research. What we can say is that the frequency of V1 decreases after 1700 (cf. Fig. 5 and 6) although there is no difference in the frequency of null subjects between the 17th and the 18th century (cf. Fig. 2)

vi It is interesting to note that the last author of the 1500-1700 generation, André de Barros, presents the text with the highest general rate of VS, 41%. In fact, as can be observed in Figure 1, the relative rates of VS/SV present are higher in the 17th century than in the 16th century, particularly regarding the last authors, right before the fall in the 18th century – corresponding to the elevated use of VS in the texts written by the last generation of authors born in the 17th century in our corpus. According to Paixão de Sousa (2004), this characteristic in the texts produced by this generation (and in particular, by André de Barros) is connected to a stylistic tendency, as the last ‘baroque’ authors sought to enhance the features present in the writings of the former, more canonical generation. For the purposes of this paper, there are two relevant issues at stake in this regard. The first point is that, whatever stylistic options were chosen by the late 17th century authors, those options were only possible within the restrictions of their grammar – which, as we see it, allowed for flexible order conditioned by discourse (and thus, a wider variation regarding SV/VS). The second point is that irrespective of the literary styles in vogue for the generations born after 1700, the rate of post-verbal subject never rose again above 8%-12% in their texts.

vii As for VOS, which is rather marginal, both in matrix and subordinate clauses, Galves and Gibrail (2016) show evidence that it is derived by VO movement, which they claim targets the C layer.
The exact nature of the feature(s) that trigger(s) movement has been the object of much debate, and will not be addressed at this point. We come back to this issue in fn. xix below.

Note also, that the same reasoning would lead one to expect that in a heterogeneous environment composed of V2 and SVO speakers, the V2 language would take over the SVO language, since acquirers would end up with more non-ambiguous evidence for V2 than for SVO. This may have been the case when Germanic tribes invaded the Roman Empire in a period in which Proto-Romance languages were already SVO.

In Yang’s framework, one could possibly argue that Romance V2 languages are a stable combination of V2 with SVO grammars. Such a claim, however, would leave unexplained why, at some point, instability arises. Instead, we argue in 3.2.2 that V3 is compatible with the V2 grammar instantiated by Classical Portuguese, and possibly other Romance languages.

Additionally, Frey proposes that some adverbs can be inserted directly in Spec/CP. This is not relevant for our analysis.

This was first argued by Antonelli (2011). For further arguments, see Galves and Gibrail (2016).

It is not the purpose of this paper to fully assume a model of the syntax/discourse interface. The only crucial assumption is that some movement processes are discursively motivated, which is consistent with both cartographic models (Rizzi 1997) and mapping models (Büring 2008). We argue that the rule that displaces phrases to the pre-verbal position in Classical Portuguese is discursively motivated, which entails that it does not apply when the relevant discursive feature/interpretation is not present. Cf. fn.xix for more discussion.

The same fact is shown by Sitaridou (2012) for Old French, Old Portuguese and Old Spanish.

Alternatively, one could argue that it is satisfied by the phi-features of the verb. Thanks to Anthony Kroch for drawing our attention to this point.

Two comments are relevant here. First, there are no subject clitics in Portuguese. Clitic pronouns correspond only to accusative and to dative complements. Second, in the non-V1 contexts in which there is no variation, i.e. embedded clauses and matrix clauses in which the verb is preceded by a focalized or interrogated phrase, by some adverbs, or by negation or a negative phrase, proclisis has been obligatory in the entire attested history of European Portuguese. This means that the obligatorily proclitic placement is not affected by the change that we are considering, which concerns only the contexts in which there was variation in ClP.

Except when the verb was in absolute first position, which is a context in which enclisis has been obligatory in the whole history of European Portuguese.
The high frequency of enclisis in Vieira’s Sermons was first observed by Martins (1994), who interpreted it as evidence that Vieira was already a speaker of Modern Portuguese.

Coupling Galves and Gibrail’s analysis of post-verbal subjects with the approach proposed for the enclisis/proclisis alternation in CIP, we are led to assume that what we call ‘continuing’ and ‘familiar’ topics can be both pre- and post-verbal in CIP. While they are pre-verbal in sentences like (5-7), they are post-verbal in sentences like (9) and (10). Given the analysis of SV proposed in Section 2.2, we are forced to conclude that the movement of the subject to the pre-verbal position is due to a discursive feature that is more specific than merely a topic-feature. Elaborating on the role played by ‘contrast’ in Frey’s analysis, Light (2012) suggests that the feature responsible for TAB in Germanic languages is kontrast, defined by Vallduví and Vikuna (1998: 83) as follows: “If an expression a is kontrastive, a membership set M = {...,a,...} is generated and becomes available to semantic computation as some sort of quantificational domain.” Note that this definition fits nicely into the analyses proposed above for both the proclitic sentences (5) and (6) on one side, and the enclitic sentences (12) and (13) on the other side. In both cases, in effect, the subjects are interpreted with reference to other possible actors involved in the event. This is not true for post-verbal subjects. From this point of view, the difference in the interpretation of pre-verbal phrases with enclitic and with proclitic clitics would then have to derive from an additional feature associated with kontrast - maybe exhaustivity. We leave this complex issue for further research.

On the exceptional behavior of clitic placement in Vieira’s Sermons, see Galves (2002), Galves et al. (2005) and Galves and Sandalo (2012).

Frota et al. (2012) look at the distribution of the words in 17 texts from the Tycho Brahe Corpus, according to their size and stress pattern. They find a significant increase in the frequency of monosyllables and oxyton words in authors born from the 17th century on. They interpret this fact as the integration of new rhythmic properties in the language, characteristic of stress-timed languages.

Notice, however, that our corpus as it stands is too limited to allow us to draw reliable conclusions relative to the second half of the 17th century. Paixão de Sousa (2004) notices that the texts studied by Marquilhas (2000) behave like the other texts from the Tycho Brahe Corpus as far as subject position is concerned, but are more enclitic.

We refer to Galves and Sandalo (2012) for a proposal on the nature of the new restriction.

This model can be understood as a specific instantiation of the acquisition-based model proposed in Roberts (2007:226-235), where steps a-c correspond to E-language changes and steps d-e to the new I-language emerging on the basis of the new E-language in the subsequent generations. From this point of view, although the phonology-syntax interface we assume is the one defined in the classical generative model, with phonology interpreting syntax, we believe that phonology can affect syntax inasmuch as it is able to affect the E-language serving as
primary linguistic data in acquisition. We also assume the view, argued for by many scholars in
the past few decades, that the suprasegmental phenomena like intonation and rhythm play a
crucial role in guiding children to their grammar (cf. Morgan 1986; Mehler and Nespor 2002).

It must be noted that Galves and Paixão de Sousa (2005) find one case of XSV-cl, in
Bernardes, born in 1644:

Vendo tão rara e verdadeira amizade,
'Seeing such rare and true friendship,

el-rei Dionísio o mais velho disse-lhes:...
the king Dionísio the older said-to-them:...

After the paper was published, the authors discovered that this sentence had not been
appropriately analyzed, due to a modification of the punctuation performed by 20th century
editor of the version used in the Tycho Brahe Corpus. The punctuation of the original edition is
as follows:

Vendo tão rara, e verdadeira amizade
'Seeing such rare, and true friendship

el-rei Dionísio o mais velho disse-lhes:...
the king Dionísio the older said-to-them:...

As can be seen, in the 20th century edition there is a comma between ‘Vendo tão rara e
verdadeira amizade’ and ‘el-rei Dionísio o mais velho’; this made us interpret this mark as the
boundary between the two clauses, and ‘el-rei Dionísio o mais velho’ as the subject of the
second clause. With the original punctuation, the phrase ‘el-rei Dionísio o mais velho’ is not
separate from ‘Vendo tão rara, e verdadeira amizade’, but rather, from ‘disse-lhe…’. the comma,
as we see it now, indicates that the boundary between the two clauses is at this point. This
suggests that there is another analysis for this sentence, in which the DP ‘el-rei Dionísio…’ is not
the preverbal subject of the tensed verb in the second clause, but the postverbal subject of the
gerundive verb in the first clause (and the subject of the second clause would be null). If this
analysis is right, there is no occurrence of the XSV-cl order in the Corpus.

Eide (2010:150) shows that there is a difference in the decrease in the rate of VS
according to whether S is new or old information: VS where S is new information remains at
higher rates until the end of the corpus in this study, which extends until the end of the 20th
century.

One anonymous reviewer claims that this analysis derives a categorical fact, clitic-
placement, from a non-categorical fact, prosodic phrasing, which is odd. But in fact, we do mean
that in CIP, clitic-placement in non-obligatorily proclitic V2 contexts is as non-categorical as
prosodic phrasing, since it depends on it. We also argue, against the analysis put forth by Pilar
Barbosa in several papers (cf. for instance, Barbosa 2000), that this ceases to be the case in EP, where, in fact, clitic-placement is categorically enclitic in the contexts discussed (cf. fn. xxxii).

Prosody also plays a crucial role in the analysis of the loss of V2 in French in Kroch (2001) where the impact of the prosodic change on acquisition is stressed in the following terms: “It is not clear what caused the change in French prosody but it is clear what effect it had on the evidence for V2 available to learners.”

Following Galves and Galves (1995) and Galves et al. (2005), Eide (2010) also assigns prosody a crucial role in the loss of V2 in Portuguese.


Cf. Kroch (2001: 702): “the best studied cases of long-term syntactic drift are most plausibly cases of grammar competition (that is syntactic diglossia) in which the competing forms may differ in social register, with an unreflecting vernacular variant slowly driving a conservative written one out of use [our emphasis, CG; MCPS].” Further down (p. 725), the author adds: “ Given the strong possibility that textual data do not give evidence for the process of language change in vernacular, there is a real need for the study of syntactic innovations in living languages, using sociolinguistic methods to observe unreflecting speech. Such studies do not at present exist, in part because syntactic change is relatively rare and hard to catch on the fly. In their absence, we can construct abstract models of change…. These are useful hypotheses, no doubt, but unless they can be further specified to make empirically testable predictions, they will remain speculative. Finding a way to derive such predictions is a major task for the future of diachronic syntax.”

We assume that the reanalysis of the position of preverbal subjects involves a shift in the features associated with C and T. As for clitic-placement, we adopt Galves & Sandalo’s (2012) claim that enclisis is derived by a post-syntactic rule sensitive to the specification of the domain in which clitic pronouns cannot appear in first position. The prosodic change affected the perception of this domain by children, leading to a change in the rule of enclisis, which ceased to be sensitive to intonation (the Tobler Mussafia Law) and became sensitive to syntax, producing the very complex and intricate pattern found in Modern European Portuguese. We thus depart from Barbosa’s analysis of clitic-placement in EP that she argues is dependent on prosody. For a full discussion on this matter, we refer the interested reader to Galves and Sandalo (2012) and Galves and Kroch (2016).