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The left-peripheral syntax of Brazilian Portuguese *cadê*

Abstract: Brazilian Portuguese boasts two distinct locative interrogative expressions: the canonical locative interrogative *onde*, and a special locative interrogative *cadê*. In this paper, we explore the syntax of *cadê* in Brazilian Portuguese, a reanalyzed functional item from the string *(O) que é de...?* (lit. ‘That which it is of...’). We show that the distribution of *cadê* feeds an interpretation of a null-copular construction in that it may not be used with a verb, whereas *onde* must appear with a verbal predicate. Additionally, *cadê* has a limited c-selection character, only being able to appear alongside a lone DP argument whose interpretation may be understood as the subject of an utterance meaning ‘Where is/are (X)?’. We examine the syntactic properties of *cadê* in Brazilian Portuguese, making explicit comparisons to similar phenomena within Romance and beyond, in addition to their accompanying syntactic proposals in the formal, generative literature. In our syntactic analysis, we attempt to account for the tenseless nature of sentences in which *cadê* appears. We briefly discuss comparable functional items found in Romance and elaborate on an analysis that shows that *cadê* has several verbal properties which allow us to consider a syntactic approach that mirrors v^0 -T⁰-C⁰ verb movement.

Key words: interrogative, null-copula, syntax, cartography

1 Introduction

Brazilian Portuguese boasts two distinct locative interrogative expressions: the canonical locative interrogative *onde*, and a special locative interrogative *cadê*. In this paper, we explore the syntax of *cadê* in Brazilian Portuguese, a reanalyzed functional item from the string *(O) que é de...?* (lit. ‘That which it is of...’; cf. da Silva Menon 2014). We show that the distribution of *cadê* feeds an interpretation of a null-copular construction in that it may not be used with a verb (1a), whereas *onde* must appear with a verbal predicate (1b).

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- (1) a. *Cadê* (**está*) *a mãe?*
 where be.PRS.3SG the mom
- b. *Onde* *(*está*) *a mãe?*
 where be.PRS.3SG the mom
 ‘Where is mom?’

Additionally, *cadê* has a limited c-selection character, only being able to appear alongside a lone DP argument whose interpretation may be understood as the subject of an utterance meaning ‘Where is/are (X)?’. We examine the syntactic properties of *cadê* in Brazilian Portuguese, making explicit comparisons to similar phenomena within Romance and beyond, in addition to their accompanying syntactic proposals in the formal, generative literature. In our syntactic analysis, we attempt to account for the tenseless nature of sentences in which *cadê* appears. We briefly discuss comparable functional items found in Romance and elaborate on an analysis that shows that *cadê* has several verbal properties which allow us to consider a syntactic approach that mirrors v^0 -T⁰-C⁰ verb movement.

In the following sections, we examine the syntactic properties of *cadê* in Brazilian Portuguese, making explicit comparisons to similar phenomena within Romance and beyond, in addition to their accompanying syntactic proposals in the formal, generative literature. In our syntactic analysis, we attempt to account for the tenseless nature of sentences in which *cadê* appears. We briefly discuss comparable functional items found in Romance and elaborate on an analysis that shows that *cadê* has several verbal properties which allow us to consider a syntactic approach that mirrors v^0 -T⁰-C⁰ verb movement. This work exceeds the expectedly strong heterogeneity of *wh*-words in Romance and extends beyond the advances of the Cartographic Program (Rizzi 1997, 2013) and the distinction between interrogatives that trigger subject-verb inversion (FocP) and those that do not (IntP), as proposed in Rizzi (2001). This is a welcome advancement, as there has been relatively little work having explored non-canonical interrogative elements such as the one in under investigation here.

2 Syntactic distribution of *cadê*

In comparison with canonical *wh*-elements, *cadê* has a limited syntactic distribution. Standard expressions are those in which *cadê* selects a DP, either singular (2a) or plural (2b), of varying types such as indefinites (2c) and quantified (2d) DPs.

- (2) a. *Cadê a mãe?*
where the mother
'Where is mom?'
- b. *Cadê os meninos?*
where the boys
'Where are the boys?'
- c. *Cadê um namorado quando se precisa de um?*
where one boyfriend when se require.PRS.3SG of one
'Where is a boyfriend when you need one?'
- d. *Cadê cada um de vocês?*
where each one of you.PL
'Where is each one of you?'

Cadê also permits topicalization, when doubled by a personal pronoun (3a) and when discourse linked to a subordinate clause (3b).

- (3) a. *A desgraça do João, cadê ele?*
the disgrace of.the João where he
'That disgraceful João, where is he?'
- b. *Quando acho que tou engordando, cadê?*
when find.PRS.1SG COMP be.PRS.1SG fatten.PROG where
'When I notice I'm getting fat, where is it (=the fat)?'

As mentioned previously above, the most notable aspect of the syntax of *cadê* is the fact that it never appears with a verb of any kind. This is in direct contrast to the behavior we see from the standard locative interrogative *onde*.

- (4) a. **Cadê está / vai / trabalha seu irmão?*
 where be.PRS.3SG go.PRS.3SG work.PRS.3SG his brother
 Intended: ‘Where is his brother/Where is his brother going/Where does his brother work?’
- b. *Onde está / vai / trabalha seu irmão?*
 where be.PRS.3SG go.PRS.3SG work.PRS.3SG his brother
 ‘Where is his brother/Where is his brother going/Where does his brother work?’

Regardless of the DP selected by *cadê*, it must always bear nominative Case. As only local personal pronouns (i.e., 1st- and 2nd-person) in the singular show Case discrimination, we see that *cadê* selects the nominative (*eu* and *tu*) rather than the accusative/oblique (*mim* and *ti*).²

- (5) a. *Cadê eu / *mim?*
 where I me
 ‘Where am I?’
- b. *Cadê tu / *ti?*
 where you.NOM you.OBL
 ‘Where are you?’

² Admittedly, the 1st-person example is odd without the appropriate context, owing to the fact that this question is likely rhetorical. A lyric from the Brazilian pop group Maiara & Maraisa provides an appropriate scenario where this may be a plausible utterance:

- (i) *E nessa eu parei pra pensar, cadê eu?*
 and in.that I stop.PST.1SG for think.INF where I
 ‘And in that I stopped to think, where am I?’

In the same manner that *cadê* only selects arguments bearing nominative Case, it may only have a present-tense interpretation. Notably, this may not be overridden by the use of adverbs which might otherwise anchor the speech act to the past or future.³

- (6) a. **Cadê meu Gustavo ontem?*
 where my Gustavo yesterday
 Intended: ‘Where was my Gustavo yesterday?’
- b. **Cadê vocês o ano que vem?*
 where you.PL the year that come.PRS.3SG
 Intended: ‘Where will you guys be next year?’

The final data point worth mentioning at this juncture is *cadê*’s ability to be embedded (6). Even in contexts set in the past, there is an obligatory [+PRESENT] reading.

- (7) *Tava procurando o livroi mas não sei cadê*
 be.IMPV.1SG search.for.PROG the book but NEG know.PRS.1SG where
 ‘I was looking for the book, but I don’t know where it is (now).’

³ A reviewer inquires about the differences between the ungrammatical structures in (6) and the following anaphoric-tense examples below:

- (i) Não guardo o material na mochila e **amanhã** cadê as coisas?
 NEG save.PRS.1SG the material in.the backpack and **tomorrow** where the things
 ‘I don’t leave my things in my backpack, so where are my things tomorrow?’

While we recognize that (i) presents a case in which *cadê* is seemingly modified by an adverbial denoting future tense, these situations are very rare and extremely difficult to recreate. Our informants, for example, accepted the situation described in (i) but were unable to create a comparative example. In our consultation with several native speakers, what is clear to us is that this anaphoric reading is indeed possible, but the grounding situation must be undeniably salient. For example, in testing what this may look like, we were unable to find any amount of potential material to be added to (6a) in order to make it felicitous with the adverb provided. For this reason, we reject a purely anaphoric approach to tense with *cadê* in Section 3.1, which we believe would overgenerate impossible sequences. Our short-term proposal for any potential exceptions centers around the fact that syntactic tense may be undermined by certain anaphoric-tense situations. The limitations of this, however, seem language-specific to us at this time. While this restriction seems to be very particular with *cadê*, in, e.g. English, it is much looser:

- (ii) We will be in Tucson next week, but where are we **next month**?

We leave the specifics of these cross-linguistic differences for future research.

The sentence in (7) is reminiscent of the distribution of null copulas in Semitic languages, a focus of much work that has been present in the generative literature since the 1980s (e.g. Doron 1986, Comrie 1987, Eid 1991, Fassi Fehri 1993, a.o.). In (8) (Benmamoun 2008:1150), we see that the embedded clause in Arabic with a null copula has a present-tense interpretation even under past-tense embedding.

- (8) *qal balli Omar ø f-d-dar*
 say.PST.2SG COMP Omar ø in-the-house
 ‘You said that Omar is in the house.’

Within Western Iberian Romance, we also find a surprising variety of apparent null-copular constructions with locative interrogatives. We examine similar verbless interrogatives in Galician (Section 2.1) and Asturian (Section 2.2), but as we will see, these interrogatives exhibit critical differences. In Section 3, we attempt to sketch out a unified analysis of these different interrogative constructions that brings the syntax of *cadê* in line with that of null-copular constructions in several key aspects, namely the presence of an obligatory present-tense interpretation and the possibility of being embedded.

2.1 Interrogative *u* in Galician

Gravely and Gupton (2020) analyze another null-copular structure found in Galician, often referred to as the *U-lo* construction, which they label as *verbless DP interrogative constructions* (VDICs). This construction is composed of the locative adverb *u* and a determiner clitic of various specifications (Uriagereka 1996; Gravely 2021) that introduces an overt or covert DP referent.

- (9) a. *U-lo can?*
 where-CL.M.SG dog
 ‘Where is the dog?’
 b. *U-las pícaras que xogaban no pendello?*
 where-CL.F.PL girls COMP play.IMPV.3PL on.the carport
 ‘Where are the girls that were playing under the carport?’

- c. *E a navalla? U-la?*
 and the knife where-CL.F.SG
 ‘And the knife? Where is it?’

Much like *cadê*, *U-lo* boasts a non-canonical syntactic distribution that contrasts with that of the more common *onde*. Notably, it may not be paired with a verb (10) and it always has a present-tense interpretation (11).

- (10) a. **U-los puxeche?*
 where-CL.M.PL put.PST.2SG
 Intended: ‘Where did you put them?’
- b. **U-la está?*
 where-CL.F.SG be.PRS.3SG
 Intended: ‘Where is she/it?’
- c. **U-lo vai?*
 where-CL.M.SG go.PRS.3SG
 Intended: ‘Where is he going?’
- (11) a. **U-los pais onte?*
 where-CL.M.PL parents yesterday
 Intended: ‘Where were our parents yesterday?’
- b. **U-la a vindeira semana?*
 where-CL.F.SG the coming week
 Intended: ‘Where will she be next week?’

Setting aside the differences between DP selection (see Gravely and Gupton, 2020:99 for further details), there are two significant differences that we claim to have direct implications for our theoretical analysis in the next section. First, Galician *U-lo* may never be embedded, unlike what we showed for *cadê* (12; cf. 7).

- (12) **Non vexo u-lo meu neno*
 NEG see.PRS.1SG where-CL.M.SG my boy
 Intended: ‘I can’t see where my boy is.’

Second, *U-lo* does not permit topicalization, unlike what we showed for *cadê* (13; cf. 3).

- (13) **Os cartos, u-los?*
the money where-CL.M.PL
Intended: ‘The money, where is it?’

We claim that the lack of embedding and topicalization in Galician *U-lo* is indicative of a distinct syntactic derivation from that of *cadê*. In the subsequent subsection, we use data from a similar interrogative structure in Asturian to bridge the gap between BP *cadê* and Galician *U-lo* in our analysis.

2.2 Asturian *ú*

Gravely and Gupton (2022) compare the fixed interrogative construction shown in Section 2.1 to that found in Asturian. In Asturian, there also exists a null-copular construction comprised of *ú* and a lone DP.

- (14) *Ú'l coche?*
where-the car
‘Where is the car?’

However, unlike in Galician, *ú* in Asturian may be paired with a verb (15a), may be embedded (15b), and may remain *in situ* (15c). That is, in addition to its ability to license the null-copular structure in (14), it mirrors all uses of its canonical interrogative counterpart *donde*.

- (15) a. *Ú / Donde taba'l coche?*
where be.IMPFV.3SG-the car
‘Where was the car?’
b. *Vimos ú / donde taba al salir de la fiesta*
see.PST.1PL where be.IMPFV.3SG upon leave.INF of the party
‘We saw where he was upon leaving the party.’

- c. *Dexasti la llave ú / donde?*
 leave.PST.2SG the key where
 ‘You left the key where?’

Importantly, the null-copular construction found with *ú* in Asturian permits topicalization, a behavior that stands in contrast to what we have shown for Galician.

- (15) *Los bolígrafos que te pidi, ú-los?*
 the pens COMP CL.2.SG ask.PST.1SG where-CL.M.PL
 ‘The pens I asked you for, where are they?’

We believe that the patterns of cross-linguistic variation between *cadê* and *ú* in Asturian are no coincidence. Specifically, we claim that there is a direct correlation between the availability of topicalization, the ability to be embedded, and the presence of T^0 . As we discuss in the following section, this directly contrasts with what we find in the data (and theory) in accounting for Galician *U-lo*. This is the line that we shall pursue in the next section in accounting for our theoretical proposal.

3 On obligatory present tense

Accounting for tense cross-linguistically has proved to be a challenge for generativists. Within natural language, there is notable variability in accounting for concepts related to tense, aspect, and mood, both with respect to languages that are truly tenseless (e.g. Chinese) as well as those that have seemingly tenseless constructions, ultimately separating them from their morphologically overt counterparts (e.g. Arabic). Work by Lin (2012), *i.a.* has postulated that the lack of a syntactic tense in Chinese should lead us to assume no T^0 at all in this language. Based on the assumptions of this author, one could easily extend the idea of the lack of morphosyntactic tense in a given construction to the absence of all tense-related functional projections in the respective derivation. On the other hand, work by Sybesma (2007) does not equate the presence or absence of overt tense morphology as a telltale sign of the respective functional projections that must account for tense in a given language, as shown in his analysis comparing Dutch and Chinese. Following this line of investigation, he shows that the presence of

tense morphology is not necessarily indicative of the actual interpretation of the tense in a given clause. These varying concepts and investigative approaches to tense support the expansion of supporting tense-related projections beyond that which is overtly shown by the morphosyntax and encourages us to seek other avenues by which we may account for tense in natural language. Subsequently, we outline two comparative approaches in accounting for tense and seek to answer how the obligatory present-tense of *cadê* is derived syntactically.

3.1 No functional projections and default present tense

In Gravelly and Gupton (2020), we explored an idea that directly linked the pragmatic nature of *U-lo* in Galician to the lack of all tense-, aspect-, and mood-related functional projections. More specifically, we posited that *U-lo* shares the same syntax as true imperatives (cf. Platzack and Rosengren 1997) in that both derivations lack all projections related to tense, aspect, and mood. Instead, it is their “here and now” interpretation that lends to the obligatory present tense interpretation of these constructions. For imperatives, this is expected due to the fact that the utterance time is intrinsically tied to the time of the speech act. For *U-lo*, we showed that the interpretation is very much the same. Therefore, a sentence such as that in (16) is understood as ‘Tell me where my money is.’

- (16) *U-los* *meus* *cartos*?
 where.CL.M.PL my money
 ‘Where is my money?’

There are other striking similarities, the most important one being that imperatives, like *U-lo*, may only be licensed in matrix clauses.⁴

As we saw in Section 2, *cadê* may be embedded. In combination with the fact that *cadê* permits topicalization while *U-lo* does not, we may tentatively posit that *U-lo* and *cadê* do not

⁴ There are, however, exceptions to this cross-linguistic generalization. For cases of embedded imperatives, see Platzack (2007). As these marginal cases neither pair with our data here nor are present in the languages in question, we leave these aside.

project the same clausal syntax. An additional piece of evidence comes from the interpretation of small clauses (17).

- (17) *An ass, that guy at the next table*
(Paul 2008)

By default, we may imagine that small-clause structures have a present tense interpretation. However, Gutiérrez-Rexach and González-Rivera (2013:9) note that these structures may also bear a past-tense interpretation based on proximal/distal deixis, as in (18).

- (18) *Muy sabio, aquel escritor*
very wise that writer
'Very wise, that writer.' (= 'Very wise, that writer was.')

It is not clear to us that deixis is the limiting factor, however. Instead, it seems that anaphoric tense is what we find in small clause predication. Consider the context given in (19).

- (19) Context: The speaker tells a story about his grandfather (now dead) that killed a lot of people during the war. The interlocutor remarks:
Qué hombre más siniestro, tu abuelo
what man more evil your grandfather
'What an evil man, your grandfather.' (= 'What an evil man your grandfather was.')

The example in (19) bears a past-tense interpretation due to the previous discourse context. The exact same utterance would be a suitable response, for example, in a context in which the speaker's grandfather was still alive. This type of strategy results in an unacceptable response with a question headed by *cadê*, however.

- (20) Context: The speaker discusses a robbery she saw take place on a trip she took last summer. The interlocutor asks:

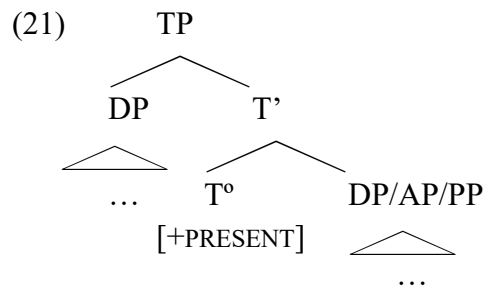
#*Cadê* *você?*
 where you
 Intended: ‘Where were you?’

Because *cadê* has an obligatory present tense reading, which may not be modified via any previous discourse context, the response in (20), while grammatical out of context, is pragmatically illicit within this particular context, as it may only refer to the location of the speaker at the time of the utterance and has no bearing on or connection to the story just told.

Both syntactic aspects explored thus far, in particular the link between embedding/availability of the left periphery and discourse-based anchoring via anaphoric tense, strongly suggest that the explanatory power of a tenseless account of *cadê* is inadequate. In the next subsection, we shall explore the idea that *cadê* projects a phonologically-null T°, as in Semitic languages.

3.2 Phonologically null T°

In accounting for null copular distribution across clauses, it has been a salient stance in the literature that T° is projected along with a corresponding tense feature (e.g. [+present]). In this way, the present tense interpretation in these structures is straightforwardly accounted for and predicted even in situations in which embedded copulas may be deleted under past tense matrix predicates.



Gravely and Gupton (2022) noted that, even for languages with null copulas in canonical declarative sentences, not all languages permit copula deletion under embedding. In (22a), we see that Libyan Arabic permits embedded null copula in addition to matrix clause null copula.

However, in (22b), we see that Tagalog, a language that licenses null copulas under many of the same conditions as Arabic, does not allow null copula in embedded contexts.

(22) *Libyan Arabic*

- a. *hūwa* *lagi* *l-žəww* *mlīh* *fa*
 he find.ACT.PTCP.SG.M DEF-ambience.SG.M good.SG.M so
gāʕəd *yādi*
 stay.ACT.PTCP.SG.M there
 ‘He found that the ambience is good, so he is staying there.’
 (Pereira 2008: 402 *apud* Camilleri and Sadler 2019: 13)

Tagalog

- b. *Ayo-ko* *na-ng* **(maging)* *nasa* *gitna*
 NEG.want-1 now-LI INF.NOM.BE PRED.LOC middle
 ‘I don’t want to be in the middle anymore.’
 (Richards 2009: 182-195)

What we must take note of with respect to *cadê* is the manner in which it is able to be licensed under embedding. Let us compare the following examples.

- (23) a. *Tava* *procurando* *o livro_i* *mas* *não* *sei*
 be.IMPV.1SG search.for.PROG the book but NEG know.PRS.1SG
cadê
 where
 ‘I was looking for the book, but I don’t know where it is.’
- b. **Quero* *sair* *de* *férias*, *mas* *não* *sei* *cadê*
 want.PRS.1SG leave.INF of holidays but NEG know.PRS.1SG where
 Intended: ‘I want to go on holiday, but I don’t know where.’

The sentence in (23a), repeated from (7), bears an important property that distinguishes it from (23b): the ellipsis undergone with *cadê* cannot be a case of sluicing (e.g. Merchant 2006), but is

simply a case of nominal elision or *pro*, as in (24a, elided constituents in angled brackets; cf 24b).

- (24) a. *Tava* *procurando* *o livro_i* *mas* *não* *sei*
 be.IMPV.1SG search.for.PROG the book but NEG know.PRS.1SG
cadê <*o livro*>
 where <the book>
 ‘I was looking for the book, but I don’t know where it is.’
- b. **Quero* *sair* *de férias*, *mas* *não* *sei* *cadê*
 want.PRS.1SG leave.INF of holidays but NEG know.PRS.1SG where
 <*quero* *sair* *de férias*>
 want.PRS.1SG leave.INF of holidays
 Intended: ‘I want to go on holiday, but I don’t know where.’

It is worth noting that (24b) is not a substitution for the grammatical sentence in (25).

- (25) *Quero* *sair* *de férias*, *mas* *não* *sei* (*pra*) *onde*
 want.PRS.1SG leave.INF of holidays but NEG know.PRS.1SG for where
 ‘I want to go on holiday, but I don’t know where [to go].’

These data confirm our original observation in Section 2 that *cadê* selects a lone DP argument as its complement.⁵ However, it also raises the question of what type of syntactic element *cadê* is. Specifically, we have shown that *cadê* is not simply a *wh*-element in that it may not freely substitute *onde*. We have also shown that *cadê* does not license phrasal ellipsis of the type found in sluicing phenomena but, instead, may only elide a DP complement.⁶ We wish to claim that, due to its syntactic distribution and non-canonical behavior, *cadê* is in fact a verbal element.

⁵ We would like to thank Cilene Rodrigues for bringing to our attention the possibility of *cadê* as a case of sluicing.

⁶ Whether one considers the absence of a DP complement in (7)/(24a) to be movement out of a complement clause or the presence of *pro* bears nothing on our analysis here. What is important, however, is that in the case of the latter DP, omission pairs with what has been discussed in the literature concerning the licensing of *pro* in Brazilian Portuguese as a partial-null-subject language (Holmberg et al. 2009, Greeson 2021, Kato & Duarte 2021, a.o.). More generally, however, it is worth noting that *cadê* sheds light on what has been discussed most recently in the literature on partial *pro*-drop in BP, namely the fact that *pro*-drop may be licensed even without a c-commanding overt antecedent if *pro* is topical.

From this perspective, we are able to explain not only the seemingly null-copular nature of *cadê* and its syntactic position within the clause, but also unite it with the theory often applied to null copulas in order to account for their present-tense nature. The independent justification of the structural processes necessary further supports our proposed account.

3.3 Diachronic considerations for a present-day syntax

Although it is not the centerpiece of our analysis, we believe that a brief diachronic consideration puts our submission of *cadê* as a verbal element in perspective. Recall that *cadê* is a reanalyzed form of the phrase *(O) que é de...?*⁷ An important assertion made by da Silva Menon (2014) is that there is no true difference between *cadê* and its precedent phrasal form. However, we believe that there are two primary pieces of evidence that suggest otherwise. First, *(O) que é de...?* licensed oblique Case, as seen in (26).

- (26) *Q'ê* *de mi* *se não* *sou* *lá* *e* *cá*
what-be.PRS.3SG **of me.OBL** if NEG be.PRS.1SG there and COMP
comigo não vou?
with.me NEG go.PRS.1SG
‘Where am I if I am not there and rather that I am not going?’
(Sá de Miranda 1559[1960])

As we showed in (5), repeated below for convenience, *cadê* licenses nominative Case.

- (27) a. *Cadê eu / *mim?*
where I me
‘Where am I?’

⁷ We recognize that this is not the only evolution of this structure. The numerous Portuguese-speaking informants that we have consulted have confirmed the presence of *Quêde?* in Portugal as well as parts of Brazil. Due to space limitations, we leave this particular expression for future research.

- b. *Cadê tu / *ti?*
 where **you.NOM** **you.OBL**
 ‘Where are you?’

Second, we have shown that *cadê* may license a null argument when discourse appropriate (7, 23a). However, Brazilian Portuguese does not permit preposition stranding, which would be the result of *(o) que é de* appearing in a similar context.

- (28) **Tava procurando o livro mas não sei*
 be.IMPV.1SG search.for.PROG the book but NEG know.PRS.1SG
o que é de
 the what be.PRS.3SG of
 Intended: ‘I was looking for the book, but I don’t know where it is.’

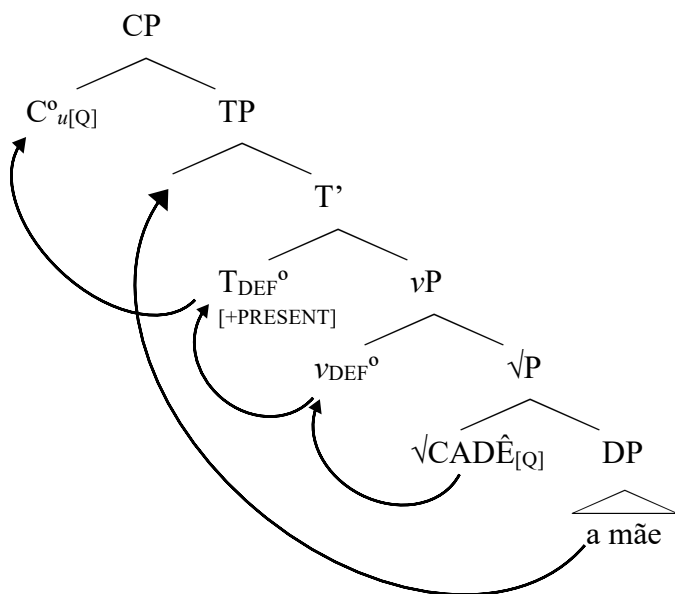
These two data points make it clear that *cadê* and its predecessor are significantly different from one another in both their selectional and distributional properties. However, they both share significant similarities.

- (29) a. *(O) que é de...?*
 i) OBL Case
 ii) [Q] *((o) que)*
 iii) [+V] *(é)*
 b. *Cadê*
 i) NOM Case
 ii) [Q]
 iii) [+V]

Considering the formal differences in (29), we claim that the multi-word reanalysis of the present-day form resulted in two changes: OBL to NOM Case assignment and XP to X^o status. Assuming the bundle of characteristics in (29b), we believe that *cadê* should be considered a ‘morphologically defective’ verb in the sense of Morin (1986). We have seen that *cadê* shows no tense-related morphological alternation based on the ϕ -features of the DP it agrees with, much

like Morin shows for *voilà* and *voici* (‘behold’) in French. On the surface, what distinguishes our proposal from that of Morin is the fact that, in our analysis, *cadê* also has a [Q] feature, which we claim to be responsible for its obligatory movement to C°. There is also precedent for functional elements of this kind being posited to undergo v° -T°-C° movement. Zanuttini’s (2017) work on the presentative *ecco* in Italian, for example, proposed that this reanalyzed functional item displays the hallmarks of head movement along the clausal spine. We feel that the same applies to BP *cadê*. Consider the implementation of this particular proposal in (30).⁸

(30) *Cadê a mãe?* (repeated from (2a))⁹



⁸ Outside of the [Q] feature that brings *cadê* from T° to C°, our model of the derivational movement of *cadê* differs from that of *ecco* for Zanuttini in another way. For her, *ecco* is base generated as a purely functional item in v° . While nothing about our analysis here would change were *cadê* to be considered the same type of element, we suggest that it is more probable that *cadê* has a $\sqrt{\text{ }}$ -based origination within the syntax due to the fact that it also may be found in a metalinguistic negation/discursive use as in (i). We put aside a proper evaluation of this flavor of *cadê*, as it is orthogonal to our strict interrogative analysis here.

- (i) *Cadê que o Aquiles não bebeu?*
 where COMP the Aquiles NEG drink.PST.3SG
 ‘Like hell Aquiles didn’t drink!’

⁹ While nothing about our proposal hinges on whether the lexical subject *o menino* passes through [Spec,T°], we follow the previous literature in assuming all subjects or their topic *pro* counterparts occupy this position at some point in the derivation. *Wh*-questions in BP do not undergo subject-verb inversion, which has been claimed to involve a lack of T°-to-C° movement (Tescari Neto 2013), leaving the subject in a structurally higher position than the verb. As we claim *cadê* is the verbal element in these structures, which we have shown must move to C°, there is no true way to test the broad assumption taken here.

In (30), we claim that $\sqrt{\text{CADÊ}}$ undergoes movement from its base-generated position to the verbalizing head v° . As *cadê* does not assign Case to or undergo agreement with its internal argument, we label this head as v_{def}° . From here, we assume that v_{def}° undergoes incorporation to T° , which we also label as defective (T_{def}°). If Preminger’s (2019) proposal of agreement is on the right track and abstract agreement of the type largely supported since Chomsky (1981) is not agreement *qua* agreement, we should not expect the T° that selects *cadê* to bear ϕ -features or have any overt morphological exponent related to the noun it selects.¹⁰ This does not, however, have undesirable ramifications for the lone argument selected by *cadê* in terms of, e.g. Case. Regardless of whether one assumes abstract Case assignment, default Case, or a dependent Case theory, nominative Case is predicted with *cadê* and this is indeed borne out. Finally, movement to C° is the result of the checking procedure involving the [Q] feature on $\sqrt{\text{CADÊ}}$ and its $u[\text{Q}]$ probe on C° . These derivational movements also reveal something about the obligatory movement of *cadê* in contrast with, e.g. *onde*, as *cadê* may not remain in-situ (i.e., the subject may not appear above it). Each derivational step, thus, appears to be motivated by a supplemental [EPP] feature, including that of the T° - C° movement.

3.4 *Cadê* and subject doubling

Our statement here regarding the derivationally high position of *cadê* and the assumed low position of the DP subject entails that the examples of topicalization presented in Section 2 (repeated below for convenience) are cases of movement-based topicalization as postulated by Quarezemin and Ordóñez (2022). We believe that the evidence we have shown in support of *cadê* obligatorily raising to C° constitutes evidence against claims (e.g. Kato and Duarte 2014) that the type of subject doubling found in Brazilian Portuguese is an instance of the highest DP pronounced being in [Spec, T°]. Quarezemin and Ordóñez propose that both the DP and personal

¹⁰ Preminger’s (2019: 11) *no-null-agreement generalization* hypothesis states that ϕ -feature agreement must be morpho-phonologically detectable on some level. From this perspective, we may postulate that v° (or a similar head) which selects *ecco* in Italian bears some ϕ -feature specification, as *ecco* is commonly found with patterns of cliticization. If cliticization is an instantiation of Agree (Deal 2021, a.o.), we may easily prove that agreement has taken place. The limitations of the type of argument *cadê* may select, however, leaves us without explicit evidence for agreement to have been realized.

pronoun form a unit in which the pronoun is generated as the head of a KP and selects a DP complement.

(31) [_{KP} *ele* [_{DP} *o João*]]

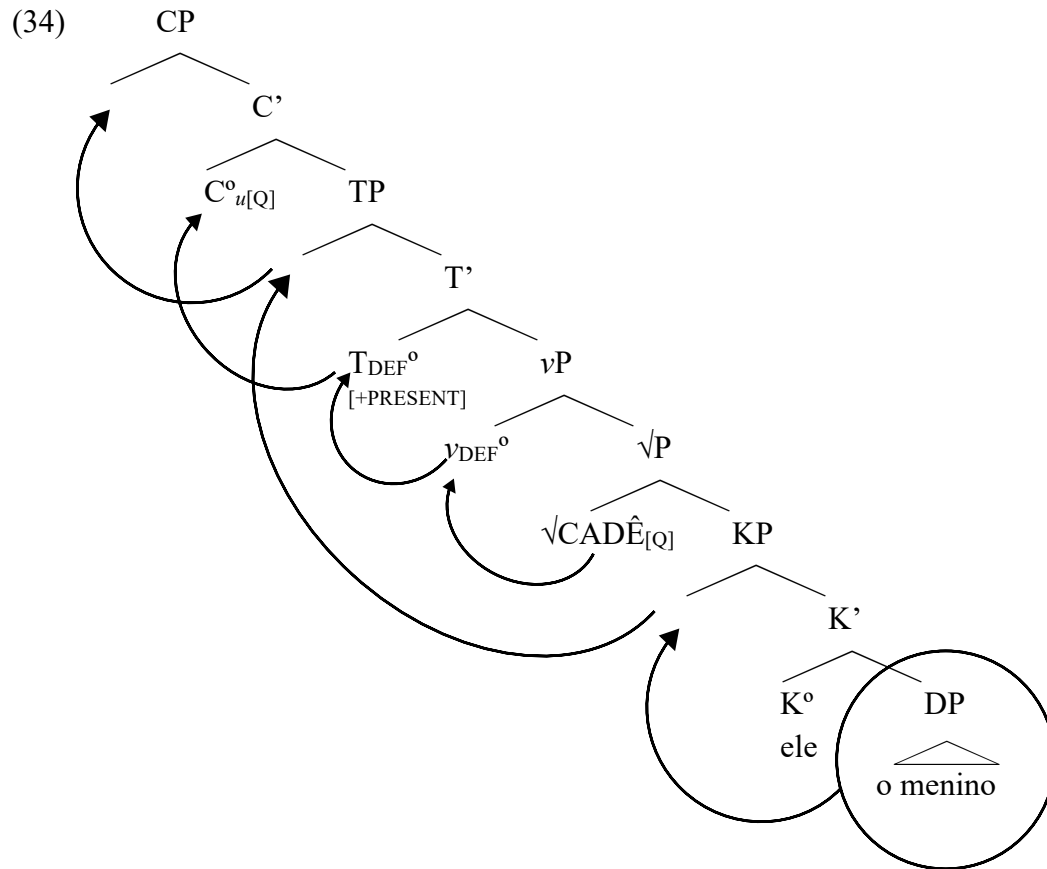
As Quarezemin and Ordóñez show, the DP complement may undergo movement to the specifier of the personal pronoun, giving rise to patterns like those in (32).

(32) ***O menino ele viajou pra São Paulo***
the boy he travel.PST.3SG for São Paulo
'The boy traveled to São Paulo.'

This combination of the DP and a personal pronoun can appear with *cadê*, as in (33).

(33) *O menino, cadê ele?*
the boy where he
'The boy, where is he?'

Following the proposal in Quarezemin and Ordóñez, we may assume that the complement DP moves to the specifier of K^0 before undergoing further movement to the left periphery above *cadê*.



When a KP consisting of a DP plus a doubled strong pronoun is selected by *cadê*, a curious asymmetry results: the DP double must remain *in situ*, as complement of K° (35a); however, if the DP moves to the specifier position of K°, it must undergo further movement to a left-peripheral, topic-related projection; it may not remain in-situ (35b).

- (35) a. *Cadê ele, o menino?*
 where he the boy
 ‘Where is he, the boy?’
- b. **Cadê o menino, ele?*
 where the boy he
 Intended: ‘Where is the boy, he?’

A reviewer comments on the potential differences between (33) and (35a), both in their pragmatic implementation (pointing out that (35a) is much more marked than (33)), as well as the potential problems it may cause for our following the proposal of Quarezemin and Ordóñez

regarding 3rd-person subject doubling. It is clear to us that (33) is a standard case of topicalization, whereas (35a) is what Kato (1987) called “false inversion”. This construction consists of a pronoun in the preverbal field and a right-dislocated lexical DP following the verb as in (36).¹¹

(36) *Ele telefonou, o João*
 he call.PST.3SG the João
 ‘He called, João.’

We consider this “false inversion” construction a true subset of a greater phenomenon in right-dislocation, found cross-linguistically. As Birner and Ward (1998) claim for right dislocation in English, the lexical DP in an example such as (36) represents information that, at some previous point in the present discourse, was evoked but is no longer the main topic of conversation.

Regarding its syntax, for, e.g. Kato (2000), right dislocation with a doubled subject involves a series of movements as follows. The lexical DP is moved to a projection (Σ P; cf. Martins 1996) above TP. It is then that the entire TP undergoes movement to the left periphery above the lexical subject (in 36, *o João*). The issue from a syntactic point of view is that *cadê* is the verbal element that passes through T⁰. However, it must continue to C⁰, which would put it above Σ P. It may be that for (35a) the pronoun escapes the KP, leaving behind the lexical DP for a right-dislocation interpretation.¹²

Returning to the two examples in (35), it is unclear to us at present what the precise reasons are for this remarkable asymmetry, but if Bošković (2014) is on the right track and the highest

¹¹ Kato’s work on this construction deals with a larger issue of the limited availability of VS order in BP. A potential restriction for some speakers is the possible use of a transitive verb with an overt object, as in (i).

(i) *?Ele comprou um carro, o João*
 he buy.PST.3SG a car the João
 ‘He bought a car, João.’

As *cadê* is monovalent, we leave aside further issues of these questions related to postverbal subjects in BP and refer the interested reader to Kato (2000), *i.a.*

¹² Another logical possibility is that both nominals escape the KP but that their landing sites are far enough away from one another that a right-dislocation interpretation may be derived. Admittedly, the obligatory movement of *cadê* to C⁰ obfuscates a definitive answer to this puzzle. However, what is clear to us at this time is that there is likely more than one derivational pathway to deriving the pattern in (36). We leave potential advancements of this solution for further research.

projection of the extended domain of a lexical category may be a phase, then it would seem that K° is a phase head in (34). This state of affairs would explain why [*o menino*] may not remain at phase edge (i.e. [Spec, K°]) and must continue to move for reasons related to its topical interpretation, similar to explanations of object shift in Chomsky (2001, 2008). Further investigation may reveal additional connections between head movement along the clausal spine and left-peripheral movements such as topicalization in Brazilian Portuguese.¹³

4 Conclusion

In this chapter, we have attempted to sketch out a syntactic analysis for the Brazilian Portuguese interrogative *cadê*. We have shown that while *cadê* is not the only non-canonical *wh*-element in Romance, upon comparing it to Galician *U-lo* and Asturian *ú*, we see that it has syntactic properties that distinguish it from those previously studied. In particular, we have shown that *cadê* has a syntax that mirrors that of verbal movement to C° . We equate its obligatory present-tense interpretation to what is found in Semitic languages and argue for the same clausal structure containing a phonologically-null T° with a [+PRESENT] feature. We claim that *cadê* undergoes ν° - T° - C° movement similar to that of Italian *ecco* (Zanuttini 2017), checking this feature in addition to the $u[Q]$ on C° . Additionally, we have shown that Quarezemin and Ordóñez's (2022) account of topicalization accompanied by strong pronoun doubling offers important insight into the analysis of possible complements of *cadê*. Initial examination reveals that data examined squares well within a phase-based syntactic theory (e.g. Chomsky 2001, 2008). Finally, we have speculated on future directions for cross-linguistic comparison.

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¹³ This might reveal structural similarities to phenomena in Scandinavian languages, also known as Holmberg's Generalization (Holmberg 1999).

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5 References

- Benmamoun, Elabbas. 2008. Clause structure and the syntax of verbless sentences. In Robert Freiden, Carlos P. Otero & María Luisa Zubizarreta (eds.), *Foundational Issues in Linguistic Theory: Essays in Honor of Jean-Roger Vergnaud*, 105-132. Cambridge, MA: MIT Press.
- Birner, Betty J. & Gregory L. Ward. 1998. *Information Status and Noncanonical Word Order in English*. Amsterdam: John Benjamins.
- Bošković, Željko. 2014. Now I'm a phase, now I'm not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45(1). 27-89.
- Camilleri, Maris & Louisa Sadler. 2019. The grammaticalisation of a copula in vernacular Arabic. *Glossa: a journal of general linguistics* 4(1). 137.
- Chomsky, Noam. 1981. *Lectures on government and binding*. Dordrecht: Foris.
- Chomsky, Noam. 2001. Derivation by Phase. In Michael Kenstowicz (ed.), *Ken Hale: A life in language*, 1-52. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2008. On Phases. In Robert Freidin, Carlos Otero & María Luisa Zubizarreta (eds.), *Foundational Issues in Linguistic Theory. Essays in honor of Jean-Roger Vergnaud*, 133-166. Cambridge, MA: MIT Press.
- Choueiri, Lina. 2016. The pronominal copula in Arabic. *Brill's Journal of Afroasiatic Languages and Linguistics* 8(1). 101-135.
- Comrie, Bernard. 1987. *Russian*. In Bernard Comrie (ed.), *The World's Major Languages*, 329-347. Oxford: Oxford University Press.
- Deal, Amy Rose. 2022. Interaction, satisfaction, and the PCC. *Linguistic Inquiry*, 1-56. (Early access proof).
- Doron, Edit. 1986. The pronominal “copula” as agreement clitic. In Hagit Borer (ed.), *The Syntax of Pronominal Clitics. Syntax and Semantics vol. 19*, 313-332. New York: Academic Press.
- Eid, Mushira. 1991. Verbless sentences in Arabic and Hebrew. In Bernard Comrie & Mushira Eid (eds.), *Perspectives on Arabic Linguistics vol. 3*, 31-61. Amsterdam: John Benjamins.

- Fassi Fehri, Abdelkader. 1993. *Issues in the Structure of Arabic Clauses and Words*. Dordrecht: Kluwer.
- Gravely, Brian. 2021. *Language acquisition and endogenous grammar change: the rise of Galician complementizer agreement*. Athens, GA: University of Georgia PhD thesis.
- Gravely, Brian & Timothy Gupton. 2020. Verbless DP interrogative constructions and enclisis in Galician. In Juan Colomina-Almiñana & Sandro Sessarego (eds.), *Language patterns in Spanish and beyond: Structure, context and development*, 91-121. London: Routledge.
- Gravely, Brian & Timothy Gupton. 2022. Nanoparameters in Western Iberian Romance: Null copulas in Galician and Asturian. *Isogloss. Open Journal of Romance Linguistics* 8(1)/16. 1-31.
- Greenson, Daniel. 2021. *Revisiting variation between null subject languages: The view from overt subject pronouns*. East Lansing: Michigan State University MA thesis.
- Gutiérrez-Rexach, Javier & Melvin González-Rivera. 2013. Spanish PredNPs and the left periphery. In Jennifer Cabrelli Amaro, Gillian Lord, Ana de Prada Pérez & Jessi Elana Aaron (eds.), *Selected Proceedings of the 16th Hispanic Linguistics Symposium*, 1-14. Somerville, MA: Cascadilla Press Project.
- Holmberg, Anders. 1999. Remarks on Holmberg's Generalization. *Studia Linguistica* 53(1). 1-39.
- Holmberg, Anders, Aarti Nayudu, & Michelle Sheehan. 2009. Three partial null-subject languages: A comparison of Brazilian Portuguese, Finnish and Marathi. *Studia Linguistica* 63(1). 59-97.
- Kato, Mary A. 1987. Inversão da ordem SV em interrogativas no português: uma questão sintática ou estilística? *DELTA* 3(2). 243-252.
- Kato, Mary A. 2000. The partial pro-drop nature and the restricted VS order in Brazilian Portuguese. In Mary A. Kato & Esmeralda Vailati Negrão (eds.), *Brazilian Portuguese and the Null Subject Parameter*, 223-258. Frankfurt: Vervuert Verlagsgesellschaft.
- Kato, Mary A. & Maria E.L. Duarte. 2014. Restrições na distribuição de sujeitos nulos no português brasileiro. *Veredas* 18. 1-22.
- Kato, Mary A. & Maria E.L. Duarte. 2021. Parametric variation: The case of Brazilian Portuguese null subjects. In András Bárány, Theresa Biberauer, Jamie Douglas & Sten

- Vikner (eds.), *Syntactic architecture and its consequences III: Inside syntax*, 357-398. Berlin: Language Science Press.
- Martins, Ana Maria. 1996. *Clíticos na História do Português*. Lisboa: Universidade de Lisboa
PhD thesis.
- Merchant, Jason. 2006. Sluicing. In Martin Everaert & Henk van Riemsdijk (eds.), *The Blackwell Companion to Syntax: Vol. IV*, 271-291. Malden: Blackwell Publishing.
- Paul, Ileana. 2008. Great coffee, that Maxwell House!. In Emily Elfner & Martin Walkow (eds.), *Proceedings of the thirty-seventh annual meeting of the North East Linguistic Society, Volume One, University of Illinois, Urbana-Campaign. October 13-15, 2006*, 139-148. Amherst: GLSA.
- Pereira, Christoph. 2008. Le parler arabe de Tripoli (Libye): Phonologie, morphosyntaxe et catégories grammaticales. Paris: INALCO dissertation.
- Platzack, Christer. 2007. Embedded imperatives. In Wim van der Wurff (ed.), *Imperative Clauses in Generative Grammar*, 181-203. Amsterdam: John Benjamins.
- Platzack, Christer & Inger Rosengren. 1997. On the subject of imperatives: A minimalist account of the imperative clause. *The Journal of Germanic Linguistics* 1(3). 177-224.
- Preminger, Omer. 2019. What the PCC tells us about “abstract” agreement, head movement, and locality. *Glossa: A journal of general linguistics* 4(1). 13.
- Quarezemin, Sandra & Francisco Ordóñez. 2022. The role of 3rd person pronouns in Brazilian Portuguese subject doubling (SD). Paper presented at Formal Approaches to Galician and Portuguese Grammar, Stony Brook University. 1-2 December.
- Rizzi, Luigi. 1997. On the Fine Structure of the Left Periphery. In Liliane Haegeman (ed.), *Elements of Grammar*, 281-337. Dordrecht: Kluwer.
- Rizzi, Luigi. 2001. On the position “Int(errogative)” in the left periphery of the clause. In Guglielmo Cinque & Giampaolo Salvi (eds.), *Current studies in Italian syntax. Essays offered to Lorenzo Renzi*, 287-296. Amsterdam: Elsevier.
- Rizzi, Luigi, 2013. Notes on cartography and further explanation. *Probus* 25(1). 197-226.
- Sá de Miranda, Francisco de. 1960[1559]. *Obras completas*. Lisboa: Livraria Sá de Costa.
- da Silva Menon, Odete Pereira. 2014. Cadê e variantes: gramaticalização em língua portuguesa. *Caligrama: Revista de Estudos Românicos* 19(2). 99-130.
- Sybesma, Rint. 2007. Whether we tense-agree or not. *Linguistic Inquiry* 38(3). 580-587.

- Tescari Neto, Aquiles. 2013. *On Verb Movement in Brazilian Portuguese: A Cartographic Study*. Venice, Italy: Università Ca' Foscari di Venezia PhD thesis.
- Uriagereka, Juan. 1996. Determiner clitic placement. In Robert Freiden (ed.), *Current Issues in Comparative Grammar. Studies in Natural Language and Linguistic Theory vol. 35*, 257-295. Dordrecht: Springer.
- Zanuttini, Raffaella. 2017. Presentatives and the syntactic encoding of contextual information. In Enoch Aboh, Eric Haeberli, Genoveva Puskás & Manuela Schönenberger (eds.), *Elements of comparative syntax*, 221-256. Berlin: De Gruyter.