Brazilian Portuguese *cadê* as a morphologically defective verb

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1. INTRODUCTION

Questions/Objectives: We explore the syntactic behavior of Brazilian Portuguese *cadê* ('Where is/are…?') and propose that *cadê* is a morphologically defective verb that assigns [NOM] Case to its lone argument. We distinguish *cadê* from other similar constructions in Romance and provide evidence that supports its identification as a verb.

2. DATA. Selectional and distributional properties of *cadê*

— *Cadê* is a grammaticalized functional item which stems from the string *Que é (feito) de…?* (da Silva Menon 2014).
— Its present-day meaning is one of locative interpretation.

2.1. Brazilian Portuguese

It may be paired with a full DP:

(1)   Cadê   **as chaves**?
        where   the keys
        'Where are the keys?'

It may be paired with a strong pronoun:

(2)   Cadê   **isso**?
        where   that
        'Where is that?'

(3)   Cadê   **nós**?
        where   we
        'Where are we?'

However, it may not host a clitic pronoun:

(4)   *Cadê-**te**?
        where-CL.2SG.ACC
        Intended: *'Where are you?'*

It may be embedded:

(5)   Estava   procurando   o   livro   mas   não
        be.IMFV.3SG   search.PROG   the book   but   NEG
        sei   **cadê**
        know.PRS,1SG   where

However, its ability to embed has limitations:

(6)   *Quero   saír   de férias, mas   não
        want.PRS.1SG   leave.INF   of parties but   NEG
        sei   **cadê**
        know.PRS,1SG   where

Substituting the more common *onde* ('where') for *cadê* suggest that the latter is not an interrogative adverb but is the equivalent to [*onde* + copular (*estar*)]:

(7)   Estava   procurando   o   livro   mas   não
        be.IMFV.3SG   search.PROG   the book   but   NEG
        sei   **cadê/*onde**
        know.PRS.1SG   where
(8)   Quero   saír   de férias, mas   não
        want.PRS.1SG   leave.INF   of parties but   NEG
        sei   ***cadê/onde**
        know.PRS.1SG   where

Although *cadê* is clearly locative, it behaves differently from *onde* in that it may not combine with copula (9) or other verbs (10):

(9)   Cadê   (*é)   você?
        where   be.PRS.3SG   you
        'Where are you?'
(10)   *Cadê/Onde   colocou   o livro?
        where   place.PST.3SG   the book
        'Where did you put the book?'

2.2. Galician *U-lo*

Galician *U-lo* ('Where is/are…?') is similar to *cadê* but has important differences.

It may host a clitic pronoun:

(11)   E   as nenas? **U-las**?
        and   the girls   where-CL.3PL.FEM
        'And the girls? Where are they?'

It may never appear embedded (12) or *in situ* (13):

(12)   Vimos   onde   estaba/**u-lo**   ó   saír
        see.PST.1PL   where be.IMPFV.3SG upon   leave.INF
        'We saw where he was when he left.'
(13)   Dis   que   estiveches   onde/**u**?
        say.PRS.2SG   COMP   be.PST.2SG   where
        'You say you were where?'

2.3. French *Où*

Où may combine with some strong pronouns, but not others:

(14)   Où   ça?
        where   that
        'Where is that?'
(15)   *Où   elle?
        where   she
        'Where is she?'

Où can be embedded (16) and remain *in situ* (17):

(16)   On   est   allé   jusq' **où**
        one   be.PRS.3SG   go.PTCP   to   where
        il était.
        he be.IMPFV.3SG.
        'We went where he was.'
(17)   Tu   es   allé   **où**?
        you   be.PRS.2SG   go.PTCP   where
        'You went where?'

Unlike *cadê*, however, French *où* freely combines with other verbs (16, 17, cf. 9, 10).
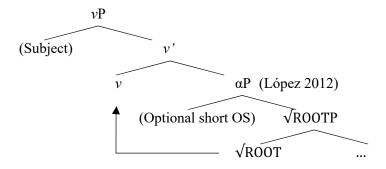
3. THEORETICAL CONTRIBUTIONS
3.1. Roots and functional layers

A significant amount of generative work has been dedicated to the concept of roots and the functional heads that combine with them (Alexiadou, et al. 2014).

— With respect to verbalization and the *v*P layer, Harley (2014) claims that languages like Spanish and Portuguese only have one verbalizing head (*v*) and are void of any Voice projections.
— This leaves us with the following assumption regarding base-generated elements within the *v*P layer:

(18)   **Romance *v*P layer**

- The incorporation of √ROOT into *v* returns a verb capable of accusative Case assignment.

Following the account for Italian *ecco* (Zanuttini 2017), we claim that *cadê* is base generated in *v* as a functional, non-root-based word.
— This analysis leads us to claim that, much like *ecco*, *cadê* has a [+V], which follows from one of its grammaticalized components being a verb (*ser*).

3.2. *Ecco* as a verb

Zanuttini claims that *ecco*, which assigns accusative Case to the DP it selects, functions as a perceptual verb.

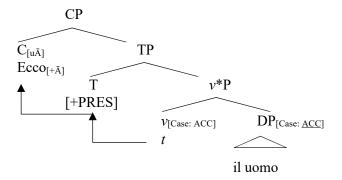*Ecco* can select a complement DP (19), host clitics (20), and an infinitive (21):

(19)   Ecco   il   uomo!
        behold the   man
        'There is the man!'
(20)   Ecco-lo!
        behold-CL.3SG.ACC
        'There it is!'
(21)   Ecco   arrivare   Edgardo
        behold arrive.INF   Edgardo
        'Here arrives Edgardo.'

Much like *cadê*, *ecco* is not found in clauses with finite verbs (i.e., copula constructions):

(22)   Le   chiavi   sono   qui/*ecco
        the   keys   be.PRS.3PL   here/behold
        'The keys are here.'

The proposed derivational movement for *ecco* is as in (23):

(23)   Ecco   il   uomo!
        behold the   man
        'There is the man!'

CP
  C[uĀ]   TP
  Ecco[+Ā]
            T   *v*P
           [+PRES]
                      v[Case: ACC]   DP[Case: <u>ACC</u>]
                           t
                                      il uomo

Ecco assigns accusative Case to its DP (*il uomo*), then moves to T in order to check its [+PRESENT] tense feature.
— It's movement to C is due to an [Ā] feature indicative of its sentence-initial/presentative nature.

3.3. Accounting for tense

We follow Benmamoun (2000, 2008) in accounting for an obligatory present tense interpretation of *cadê*.
— He shows that null-copula constructions in Arabic and Hebrew are truly verbless.
  o However, these constructions always have a present tense interpretation.

Benmamoun claims that this is due to a [+PRESENT] feature on T:

(24)   Omar   f-d-dar
        Omar   in-the-house
        'Omar is in the house.'

This independently accounts for embedded clauses that differ from the matrix clause tense:

(25)   qul-ti   bəlli   Omar   naʕəs
        say.PST.2SG   COMP   Omar   sleep.PROG
        'You said that Omar is sleeping.'

This obligatory present tense nature is the same that we find for both *ecco* and *cadê*, although neither one shows corresponding present tense morphology in its respective language.
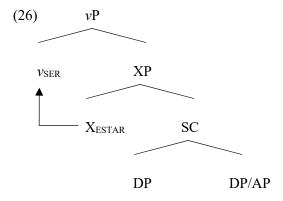
4. The Syntax of *Cadê*

We claim that *cadê*, much like *ecco*, is a morphologically defective verb that undergoes *v*-T-C movement.
— This puts *cadê* in the sphere of other verbs in Romance in interrogative clauses.
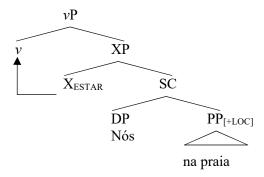
4.1. *Cadê* in the *v*P layer

We follow Gallego & Uriagereka (2016) in analyzing small clause copula constructions.
— They propose the following representation distinguishing *ser* and *estar*:

(26)

vP
  vSER   XP
         XESTAR   SC
              DP   DP/AP

Dealing specifically with locative interpretation (*estar*), we would find the following *v*P layer in example (27):

(27) Nós   estamos   na   praia
      we   be.PRS.1PL   in-the   beach
      'We are at the beach.'

vP
  v   XP
       XESTAR   SC
              DP   PP[+LOC]
              Nós
                     na praia

• The DP and PP undergo pair Merge, solidifying the thematic relation between the two daughters of the SC (i.e., that of a locative interpretation) (Gravely & Gupton, in press).

After examining the data, *cadê* clearly has an obligatory locative interpretation, differentiating it from *onde* in that it may not be used to head a relative clause (specifically, one without a clear locative interpretation):

(28) Uma   situação   **onde**/*cadê* não   podemos   fazer
      a   situation   where   NEG   be-able.PRS.1PL   do.INF
      nada
      nothing
      'A situation in which we cannot do anything.'

Therefore, for *cadê*, we claim that it undergoes pair Merge with its DP subject in order to create the same thematic relation as in (27).
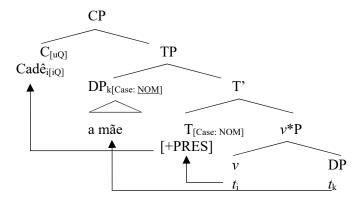
4.2. *Cadê* in the TP layer

— *Cadê* undergoes *v*-T movement in order to check its [+PRESENT] feature for tense and assign [NOM] Case to the DP subject it selects.
— Unlike loose claims by da Silva Menon (2014), we claim that *cadê* must be distinct from *que é de…?* in that the former assigns [NOM] Case, whereas we should find [ACC] Case with the latter.

(28)   a.   Cadê   **eu/*min**?
           where   I/me
           'Where am I?'

   b.   Que   é   de   ***eu/mim**
           what   be.PRS.3SG   of   I/me
           lit. *'What is of me?'*

4.2. *Cadê* in the CP layer

— As stated above, the movement of *cadê* to C is indicative of its interrogative nature.
— Because of this, we claim that it has an [iQ] feature.

(29)   Cadê   a   mãe?
        where   the   mother
        'Where is mom?'

Here we may see that the syntactic movement *cadê* undergoes is identical to that of *ecco*, albeit with different semantics and for different featural motives.

4. THE FORMAL GRAMMATICALIZATION OF *CADÊ*

The idea behind the formalization of grammaticalization has been direct in its derivational understanding. Initially formulated in Roberts & Roussou (2003) and continued in Roberts (2007, 2019), grammaticalization from a generative perspective is seen as **the creation of new functional material either out of other functional material or out of lexical material by means of the loss of head-movement** (Roberts 2019: 83).

(30)   Earlier grammar: [FP…[F [H h] F]…[HP…([H h])…]]
        Innovative grammar: [FP…[F h]…[HP…[H h']…]]

The notion of reanalysis as the driving force of grammaticalization and its structural simplification (i.e., fewer features) has led grammaticalization to be seen as movement "upwards in the structural hierarchy of functional categories" (Roberts & Roussou 2003: 36). This conceptualization is theoretically sound when involving **one** lexical item (e.g. English modals V→T > T).

— *Cadê* presents difficulties for that analysis, as we see the phonological reduction of (at least) three lexical items into one.

(31)   **Feature reassembly of *cadê***

Que: [+Q]
é: [Case: NOM]   Cadê: [iQ], [Case: NOM], [+LOC]◄⎤
de: [Case: ACC]   (due to semantic bleaching)

As we show in (29) and (31), *cadê* does not inherently lose features **or** movement properties (*pace* the claims made by Roberts & Roussou 2003, Roberts 2007, 2019).

We claim that this is due to the fact that reanalysis, which is inherently non-directional (Lightfoot 1999), is the driving force behind all grammaticalization; therefore, **not all cases of grammaticalization** entail loss of movement and fewer feature specifications.

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