Complementizer-Alternation in Creole Languages: New Evidence for Spec-Head Agreement

Alternância de complementizadores em línguas crioulas: novas evidências para a concordância spec-núcleo

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Abstract: The topic of this paper is the ki/ma alternation in Cape Verdean Creole (henceforth, CVC) with a focus on the behavior of ki within wh-questions. We argue that ki is a morphosyntactic reflex of Q-agreement between [uQ] on C and a wh-phrase, supporting spec-head agreement in Chomsky (1991), contra the probe-goal agreement system in Chomsky (2000). In so doing, we provide evidence for its position in C and show that in the absence of operator movement and Q-agreement on C, an alternative particle, ma/kuma, appears in C. We show that the symmetric patterns of extraction observed in CVC where the complementizer ki can appear when either the subject or object are extracted, may be in part reducible to a contrast in locality constraints on Agree and can be better explained within a spec-head relation framework for CVC.

Keywords: Cape Verdean Creole; complementizer; spec-head; probe-goal.

1 Marlyse Baptista and Miki Obata are co-first authors on this paper.
Resumo: O foco deste artigo é a alternância ki/ma em Crioulo de Cabo Verde (doravante, CVC), dedicando uma especial atenção ao comportamento do ki em interrogativas-wh. Defendemos que ki é o reflexo morfossintático da concordância-Q entre [uQ] em C e um sintagma-wh, reforçando a ideia de concordância spec-head, de Chomsky (1991), contra o sistema de concordância sonda-alvo, de Chomsky (2000). Ao fazermos isto, fornecemos evidência para a posição de ki em C e mostramos que, na ausência de movimento de operador e de concordância-Q em C, uma partícula alternativa, ma/kuma, ocorre em C. Mostramos ainda que os padrões simétricos de extração observados em CVC, onde o complementador ki pode ocorrer quando quer o sujeito quer o objeto são extraídos, podem ser parcialmente reduzidos a um contraste de restrições de localidade em Agree e podem ser mais bem explicados através de um quadro de relações spec-head em CVC.

Palavras-chave: Crioulo de Cabo Verde; complementizador; especificador-núcleo; sonda-alvo.

1 Introduction

1.1 Objectives

This paper focuses on the particle ki in Cape Verdean Creole (henceforth, CVC) and investigates its behavior within wh-questions. Our main objective is to demonstrate that ki is a morphosyntactic reflex of Q-agreement between [uQ] on C and a wh-phrase, supporting spec-head agreement in Chomsky (1991), contra the probe-goal agreement system in Chomsky (2000). We provide evidence for its position in C and crucially show that in the absence of operator movement and Q-agreement on C, an alternative particle, ma/kuma, appears in C in CVC. We show that the symmetric patterns of extraction observed in CVC where the complementizer ki can appear when either the subject or object are extracted, may be in part reducible to a contrast in locality constraints on Agree and can be better explained within a spec-head relation framework for CVC. With this approach in mind, ki is presented as a reflex of agreement between a complementizer and a wh-phrase, an analysis that was sketched in Baptista (1993) for CVC and more recently in Takahashi & Graçanin-Yuksek (2008) for Haitian Creole².

²For an in-depth comparison of CVC and Haitian Creole, see Obata, Epstein & Baptista (2015).
1.2 Claims

Based on the empirical data we introduce, we make two main claims: The first is that COMP in CVC bears an uninterpretable Q feature \([uQ]\), which causes a COMP-alternation between \(ki\) and \(ma\). This uninterpretable Q feature will account for the dependency between C and a \(wh\)-phrase. The second is that Q-agreement in CVC supports Chomsky’s (1991) spec-head agreement system (contra Chomsky’s (2000) probe-goal system).

2 Extraction patterns and the behavior of ki in Cape Verdean Creole

This section elaborates on some preliminary observations that were made in Baptista (1993) where she explored the behavior of \(ki\) in subject-extraction, object-extraction, short-distance movement and long-distance movement in CVC \(wh\)-questions. She stipulated that \(ki\) appears in Comp whenever a \(wh\)-phrase moves through Spec-CP (within a GB framework) and consequently analyzed \(ki\) as an indicator of spec-head agreement (Baptista 1993: 9) between the \(wh\)-word and Comp, following a similar analysis in Chung and McCloskey (1987) for Modern Irish. The relevant examples are laid out below.

2.1 Wh-Questions in CVC: Subject and object extraction

In \(wh\)-questions\(^3\), a Comp \(ki\) in CVC can be or must be phonetically realized when argument extraction is involved\(^4\). Consider the following examples illustrating subject extraction (1) and object extraction (2) in simple matrix questions:

Subject extraction in matrix question:

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\(^3\)For an in-depth overview and analysis of \(wh\)-questions and extraction patterns in CVC, see Alexandre (2009; 2012), which remain to date the most comprehensive treatment on this topic.

\(^4\)One should note, however that there is considerable dialectal and idiolectal variation in the language with regard to the obligatory use of \(ki\). \(Ki\) tends to be obligatory in the case of subject extraction involving the monosyllabic \(wh\)-phrase \(ken\) in contrast to \(kenhi\). Furthermore, in Veiga (2000: 181), there are attestations of dialectal variation with regard to object extraction. He contrasts the Santiago dialect where \(ki\) is not required to its São Vicente counterpart, in which \(ki\) must appear:

(i) **Kuze \(\emptyset\) bu kre?** (Veiga 2000: 181) Santiago variety
what you want
“What do you want?”

---
(1) a. **Kenhi ki odja João?**
   who ki see João
   “Who saw João?”

   b. **Kuze ki kontise ki po-bu ben kaza es ora**
   what ki happen that put-you come home this hour
   li? (Brüser *et al.* 2002: 370)
   here
   “What happened that made you come home at this time?”

Object extraction in matrix question:

(2) a. **Kuze ki João odja?**
   what ki João see
   “What did John see?”

   b. **Kuze ki nhos fla?** (Brüser *et al.* 2002: 370)
   what ki you say
   “What did you say?”

The same pattern obtains in the case of embedded questions involving subject extraction, as in (3) or object extraction, as in (4):

Subject extraction in embedded question:

(3) **Bu sabe kenhi ki ta bai merkadu manhan?**
   you know who ki MOOD go market tomorrow
   “Do you know who will go to the market tomorrow?”

Object extraction in embedded question:

(4) **Bu sabe kuze ki João kunpra?**
   you know what ki João bought
   “Do you know what John bought?”

(ii) **Keze ke bo kre?** (Veiga 2000: 181) São Vicente variety
   what ke you want
   “What do you want?”

For the purpose at hand, suffice to say that *ki can*, and in some dialects, *must* appear in matrix simple questions as well as embedded questions involving both subject and object extraction.
Relatives involving *wh*-questions also display *ki*:

(5) **João** ka sabe *kenhi* ki *furta* bolsa.

João NEG know who ki steal bag

“João does not know who stole the bag.”

(6) **Mudjer** ki *dja* ka sabeba *kuze* k’ *el* al

woman ki COMP NEG know+ANT what ki she would

**fase...** (Brüser *et al.* 2002: 371)

do

“The woman who did not know what she would do...”

Furthermore, it is worth noting that there is an asymmetry between argument extraction and adjunct extraction in CVC. While *ki* can occur in both subject and object argument extraction, it is often the case that *ki* is preferably absent with adjunct extraction (7a) though it can also be expressed (7b).

(7) a. **Maria** ka sabe *undi* Ø *João* bai.

Maria NEG know where João go

“Maria doesn’t know where João went.”

b. **Maria** ka sabe *undi* *ki* *João* bai.

Maria NEG know where COMP João go

“Maria doesn’t know where João went.”

We will not linger on this asymmetry in this paper but refer the reader to Alexandre (2009; 2012) for an in-depth and comprehensive coverage of *wh*-questions involving argument and adjunct extraction, in addition to restrictive relative clauses in CVC. Her analyses also tackle the thorny issues of gap and resumptive strategies.

Having laid out the behavior of *ki* in both simple matrix and embedded subject and object extraction, the next question to address is the exact position of *ki* in the sentence structure. If *ki* is assumed to be in C, what are the diagnostics for its position in C? This is the topic of the next subsection.
2.2 *Diagnoses of *ki as a complementizer in CVC*

Given that *ki* systematically appears with *wh*-questions, the first candidate that comes to mind as a possible diagnostic for the position of *ki* in C would be *yes/no* questions. We must, however, discard these cases because in contrast to *wh*-questions, *ki* is not allowed to occur in *yes/no*-questions, as shown by the ungrammaticality of (8).

(8) *Ki João kunpra libru?*
   C João bought book

Instead, *yes/no* questions in CVC are only expressed through raising intonation:

(9) João kunpra libru?
    João bought book

As no reliable diagnostic of *ki* as a complementizer can be found in *yes/no* questions, we turn to a more promising diagnostic, that of subject-auxiliary inversion.

2.2.1 Diagnostic for *ki* as a Comp from subject-auxiliary inversion

In CVC, subject-auxiliary inversion can take place in the case of *wh*-questions involving copulas.

(10) a. Undi Ø sta bu libru?
    where is your book
    “Where is your book?” (Veiga 1995: 367)

    b. Undi ki bu libru sta?
    where ki your book is
    “Where is your book?”

If in (10a), the auxiliary *sta* can be assumed to move to C to derive the subject-auxiliary word order, then the piece of data in (10b) naturally ensues from the fact that *ki* appears in C while *sta* remains in situ.

It is worth noting that while copulas can fill C in CVC, main verbs cannot move to such positions, as witnessed by the ungrammaticality of (11):
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(11) a. *Undi ki kume João?
   where ki eat João

   b. Undi (ki) João kume?
      where João eat
      “Where did João eat?”

The fact that inversion is only possible with copulas provides us with a first diagnostic for the position of *ki in C (see Baptista 1997; 2002; Alexandre 2009). Sluicing provides us with another piece of evidence, as examined in the next subsection.

2.2.2 Diagnostic for ki as a Comp from sluicing

In languages which involve overt Comps, Comps cannot survive after sluicing (Merchant 2001), which is interpreted as TP deletion after wh-movement. Given this basic assumption, our prediction is that if CVC is indeed a language which involves overt Comps, then, *ki cannot survive after TP is deleted by sluicing operations.

Consider the data in (12) illustrating a sluicing operation. (12a) shows that after sluicing applies, *ki cannot occur on C; our assumption that *ki is Comp is empirically supported.

(12) a. *João kunpra algun kuza, ma N ka sabe kuze
      João bought some thing but I NEG know what
      ki.
      C
      “John bought something but I don’t know what.”

   b. João kunpra algun kuza, ma N ka sabe kuze.
      João bought some thing but I NEG know what
      “John bought something but I don’t know what.”

We bring further empirical evidence to *ki being in C when we consider in the next section the *ki/ma alternation in CVC where we show that the complementizer ma is in complementary distribution with *ki, hence they occupy the same position in C.

Table 1 summarizes the basic facts regarding the behavior of CVC *ki in the presence of wh-phrase in Spec-CP.
Distribution of \( ki \) in CVC

<table>
<thead>
<tr>
<th>Subject extraction</th>
<th>Object extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>( ki ) can appear in matrix C</td>
<td>+</td>
</tr>
<tr>
<td>( ki ) can appear in embedded C</td>
<td>+</td>
</tr>
</tbody>
</table>

Tab. 1: \( ki \) in CVC.

2.3 Some basic assumptions

We follow partially Takahashi & Graçanin-Yuksek’s proposal for Haitian Creole (see Obata, Epstein and Baptista 2015 for an extensive comparison between CVC, Haitian Creole and other languages) in making the following set of assumptions: we start out by assuming that \( ki \) is a phonological reflex of agreement between the complementizer \( C \) and a \( wh \)-phrase (see Baptista (1993: 9) for a similar analysis). Crucially, we consider Takahashi & Graçanin-Yuksek’s hypothesis that \( C \), in the relevant context, contains an uninterpretable \( wh \)-feature (\( uwh \)) and uninterpretable \( \varphi \)-features (\( u\varphi \)). The \( uwh \)-feature allows for a dependency between \( C \) and a \( wh \)-phrase and the \( u\varphi \) features on \( C \) are motivated by cross-linguistic empirical evidence\(^5\). The \( uwh \) and \( u\varphi \) features allow Takahashi & Graçanin-Yuksek to derive the extraction asymmetry between subject and object \( wh \)-phrases in Haitian, as subject extraction requires the presence of the complementizer \( ki \) in Haitian whereas object extraction forbids it but such an asymmetry does not obtain in CVC, as already shown in examples (1) and (2). At the core of Takahashi & Graçanin-Yuksek’s analysis is the argument that in the case of subject extraction, \( C \) enters an Agree relation with the \( wh \)-phrase in Spec-TP and both \( uwh \) and \( u\varphi \) features on \( C \) are checked and valued by a \textit{single} goal, the subject \( wh \)-phrase. Crucially, Takahashi & Graçanin-Yuksek assume that the complementizer is spelled out as \( ki \) if all its features are checked off by a \textit{single} goal. They assume that the EPP property is a subfeature of the \( uwh \), following Pesetsky & Torrego (2001) (Takahashi & Graçanin-Yuksek 2008: 229).

While subject extraction requires the presence of \( ki \) in Haitian, \( ki \) cannot appear when the object undergoes \( wh \)-movement. Takahashi & Graçanin-Yuksek account for the asymmetry between subject and object extraction by holding the following reasoning: they argue that \( uwh \) and \( u\varphi \) on \( C \) are

able to search the structure independently to look for their own matching features and agree with the closest goal. Since the subject in Spec-TP is the closest constituent involving φ-features to C, uφ on C are checked off by the subject. On the other hand, uwh on C is checked off by the wh-phrase that carries the wh-feature. Therefore the two types of features on C are checked off by different goals in contrast to subject extraction where both uwh and uφ are checked and valued by a single goal. Takahashi & Graçanin-Yuksek’s main claim is therefore that the subject-object asymmetry in the distribution of Haitian ki is reducible to the locality constraint on Agree (Takahashi & Graçanin-Yuksek 2008: 231).

While this analysis elegantly accounts for the Haitian facts, as well as subject extraction in CVC, it falls short of accounting for object extraction in CVC.

Indeed, if we adopt the same approach to subject extraction in CVC, the above analysis follows through. Consider the derivation in (14) featuring subject extraction represented in the example (1) above and repeated here for convenience as (13):

(13) Kenhi ki odja João?
who ki see João
“Who saw João?”

(14) 

In (14), following a similar reasoning to Takahashi & Graçanin-Yuksek (2008: 228) for Haitian (as discussed in Óbata, Epstein and Baptista 2015), we propose that in the case of CVC subject extraction, C enters into an Agree relation with the wh-phrase in Spec-TP and both uwh and uφ features on C are checked and valued by a single goal, in this case the subject wh-phrase. The derivation illustrates our point that it is C and no other element that is spelled out as ki. The complementary distribution between the auxiliary sta and ki, as well as the sluicing tests presented in (10) and (12) respectively, will be further corroborated below by the ki/ma alternation, examined in section 4.

While the probe-goal framework provides a satisfactory analysis for subject extraction based on local dependency relation, the question is how one can account for object extraction in CVC. Recall the example of object extraction in (2), repeated here as (15) for convenience:

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Two possible derivations can be assumed for this sentence. If we follow Takahashi & Graçanin-Yuksek’s (2008) derivation in Haitian for object extraction, we will need to assume that it is possible for the features on C in CVC to be checked by different goals. In this case, the derivation in (16) would obtain:

(16)

Following Takahashi & Graçanin-Yuksek (2008: 231), we could argue that in a probe-goal framework, the only way to account for the behavior of ki with regard to the object *wh*-phrase would be to stipulate the derivation in (16). This derivation illustrates that *uwh* and *uφ* on C are able to look independently from each other for their own matching features and agree with the closest goal. Since the subject *João* in Spec-TP is the closest constituent involving φ-features to C, *uφ* on C are checked off by that subject. On the other hand, *uwh* on C is checked off by the *wh*-phrase in the vP-adjoined position because it is the closest and the only matching goal carrying the same feature. Crucially, *uφ* on C cannot be checked and valued by the *wh*-phrase because it is more distant from C than the subject *João*. Consequently, the two types of features on C are checked off by different goals in (16), unlike in the subject extraction case in (14). Takahashi & Graçanin-Yuksek’s (2008) probe-goal analysis (which we adapted to CVC in (16)) would wrongly predict that the example (15) is ungrammatical in CVC although it rightly predicts that the output is ungrammatical in Haitian, given that *ki* is forbidden from appearing with object extraction in Haitian. In the Haitian case, Takahashi & Graçanin-Yuksek (2008: 231) argue that C cannot be spelled as *ki* in this case, their claim being that the subject-object asymmetry in the distribution of *ki* is reducible to the locality constraint on Agree. No such locality constraint holds up empirically in the CVC case, including in the embedded clauses.

So, the obvious question we face is why the features on C cannot be deleted by different goals or the derivation crashes in Haitian whereas they can be erased by different goals in CVC and yield a grammatical output.

An alternative derivation, that in (17), is based on the assumption that the φ-features on C need not be checked by the closest subject, but can be checked instead by the further subject, the *wh*-phrase:

(15) **Kuze ki João odja?**
“what ki João see
“What did John see?”
In this case, clearly, an account based on locality constraints cannot explain how the subject goal could prevent the object goal from checking the features on the matrix C. It does not explain either why the wh-subject cannot check $\varphi$-features on C in Haitian whereas it can in CVC (as shown in (17)).

We argue in the next section that the distribution of $ki$ in CVC can be naturally accounted for by a unified analysis of spec-head agreement and by postulating a $[uQ]$ that allows a wh-word in CVC to enter into a spec-head agreement with C. We will be able to support our proposal with independent empirical data in CVC such as the $ki$/$ma$ alternation.

### 3 Ki as a reflex of Spec-head agreement in CVC

In an attempt to defend our proposal that the behavior of the complementizer $ki$ is better explained by adopting a spec-head approach, we first present Koopman’s (2006) arguments for spec-head agreement and support them with our own battery of empirical evidence.

#### 3.1 In defense of spec-head: Koopman (2006)

#### 3.1.1 Some basic assumptions

Koopman (2006) makes one of the strongest claims in defense of spec-head agreement when she states that “spec-head agreement, construed as agreement under left to right Merge is not only a possible agreement configuration, but probably the only agreement configuration, contra Agree (Chomsky 2001)” (Koopman 2006: 1).

Koopman rests the spec-head relation on the following assumptions:

(18) a. Agreement is established in a strictly local left right configuration at some point in the derivation, with the trigger to the left of the target.

b. Agreement can be triggered low in the derivation, giving rise to apparent long distance agreement (Koopman 2006: 3).
Koopman’s analysis of the spec-head configuration can be summarized as below:

(19) If Y agrees with XP, XP and Y are or have been in a spec-head relationship in the course of the derivation.

(20) If XP agrees with Y, YP has merged with XP in the course of the derivation (XP being the trigger).

(21) \[ \begin{array}{c}
YP \\
\hline
XP \quad YP \\
\hline
Y
\end{array} \]

(Koopman 2006:4)

For the sake of illustration, we consider in the next section the case of English long-distance agreement as laid out in Koopman (2006). Long-distance agreement is of particular interest to us because the supposed inability of the spec-head approach to account for that particular construction is what originally prompted Chomsky to resort to the apparatus offered by the probe-goal analysis.

### 3.1.2 Rescuing spec-head against probe-goal: Long-distance agreement in English (Koopman 2006)

In an attempt to defend the spec-head approach, Koopman (2006) examines long-distance agreement illustrated in English existential constructions. Consider (22):

(22) a. There seem to be many problems with agreement.

b. There seems to be a problem with agreement.

As stated in Koopman (2006), under Agree, the T is argued to send out a Probe and value the phi- and case features under local c-command. The expletive is merged directly in Spec-TP to satisfy the EPP. This is compatible with the standard small clause analysis of the there-insertion construction. As the spec-head hypothesis was believed to run into problems with agreement, several rescue analyses were proposed: they include case transmission along a CHAIN, covert LF NP movement, replacing the expletive, overt movement of the phi-features of the associate, Agree. In defense of spec-head, Koopman
argues that it must be that there is either overt movement of some category carrying the phi-features or local spec-head relation between there and the associate at some point in the derivation (2006: 22).

Following Moro (1997), Koopman proposes the following analysis for existential constructions involving inverted copulas. Moro argues that there is merged as a predicate and becomes a subject through predicate inversion which targets the clausal subject position. Since predicate inversion requires the presence of a landing site, (23b) and (23d) are out because there is no landing site for predicate inversion:

\begin{enumerate}
  \item Mary believes the cause of the riot to be John.
  \item *Mary believes the cause of the riot John.
  \item I believe there to be a problem.
  \item *I believe there a problem.
\end{enumerate}

The stranded argument behaves like a subject, and disallows extraction. The locative PP in examples like (24a) does not show the behavior of a predicate, which we would expect under the small clause analysis. It behaves like an adjunct, in the sense that it can be optional. PP small clause predicates are always obligatory, but the PP coda in existential constructions is not.

\begin{enumerate}
  \item Many copies of the book were in the studio. (PP small clause is obligatory)
  \item *Many copies of the book were
  \item There were many copies of the book (in the studio). (PP coda is optional)
\end{enumerate}

Since the associate and there are in a spec-head/left right relation at the point of Merge, or at a very early point in the derivation, agreement can be subsumed under local spec-head, with the agreement trigger to the left of the predicate. The associate is stranded low in the structure and has the distribution of the complement of be. There then behaves like a structural subject, because of the effects of predicate inversion. This proposal immediately accounts for the ungrammaticality of partial raising of the associate (25c) (based on Moro 1997: 121, quoted in Koopman 2006: 23).

\begin{enumerate}
  \item There seems \textit{there} to be a man in the room.
  \item I expect [\textit{there} to be a man in the room].
\end{enumerate}
c. *There seems a man to be in the room.

The associate fails to raise, because *there must undergo predicate raising, and gets in the way of NP movement of the associate.

(26) There seems [there to [be [a man there]] in the room].

This outcome is crucial for Koopman’s analysis, as attempts to capture the absence of partial raising under the standard analysis of there insertion constructions all demand additional theoretical apparatus. Chomsky (1995) proposes to block (25c) by the Economy principle Merge over Move. This principle is only [Koopman’s emphasis] motivated by the need to exclude partial movement of the associate. Thus, an analysis in which there starts out in a local relation with the associate early in the derivation and raises to subject position, simply renders Merge over Move superfluous.

In conclusion, predicate inversion accounts for the subject properties of existential *there. However, rather than being merged directly in Spec-TP, *there moves into that position. Long distance agreement in existential constructions is therefore compatible with the very local type of configuration that spec-head imposes.

CVC does not exhibit the agreement patterns present in the expletive constructions just examined and which have been taken to be evidence of probe-goal agreement. Hence, we cannot use such constructions as a test case in the language. However, we will show in the next section that the same local configuration that spec-head requires can be witnessed in both subject and object extraction constructions in CVC. To that effect, we examine further evidence for spec-head agreement in CVC taken from complementizer alternation and distribution. More precisely, we will show that *ki in CVC appears whenever spec-head agreement takes place between a wh-phase and C whereas *ma is substituted to *ki when no such agreement occurs; we will also show, in support of Koopman’s approach, that spec-head agreement can take place early in the derivation.
4 Complementizer Alternation in CVC

4.1 On the alternative Comp ma

This paper has so far only described the behavior of the complementizer ki that appears with both subject and object extraction in CVC. There is, however, an alternative complementizer in the language that occurs in specific environments, the topic of this section. In CVC, whenever verbs taking CP are illocutionary in nature, such as “tell”, “think”, another Comp ma is required to occur in C, particularly in varieties of older generations of speakers.6

(27) João fra-m ma/*ki/*Ø Maria kunpra libru
   João told+me C Maria bought book
   ‘João told me Mary bought the book.’

While illocutionary verbs such as “tell” require C to host ma (not ki), if wh-phrases are pronounced and interpreted at the Spec-CP, then ma changes to ki obligatorily, as shown in (28).

(28) Kenhi ki fra-m kuze ki/*ma/*Ø Maria kunpra.
    who C told+me what C Maria bought
    ‘Who told me what Mary bought?’

Indeed, in (28), the wh-word kuze “what” is pronounced at the embedded Spec-CP. This empirical observation leads us to infer that ki cannot only be viewed as a symptom of spec-head agreement but also of movement of the wh-phrase to a given landing site.

On the other hand, if the embedded wh-phrase stays in situ, as shown in (29), then Comp must be ma, and ki is not allowed (in those varieties).

6It should be made clear, however, that there is a lot of variation in the language on this issue and that there are, indeed, varieties in which ki is allowed after illocutionary verbs. Its use is widespread among the younger generation of speakers and it may be due to the influence of the Portuguese complementizer que, that is allowed to occur after illocutionary verbs in that particular language: dizer que... “to say that...”. Dialectal variation is, however, beyond the scope of this paper, so we will not linger here on this matter.
(29) Kenhi ki fra-m ma/*ki/*Ø Maria kunpra kuze?
   who C told+me C Mary bought what
   ‘Who told me Mary bought what?’

Furthermore, if wh-phrases move through the embedded Spec-CP but does not land, the selected comp is ma, not ki, as shown in (30).

(30) Kuze ki João fra-m ma/*ki/*Ø Maria kunpra
    what C João told+me C Maria bought
    ‘What did John tell me Mary bought?’

So the preceding data lead us to formulate the following generalizations, the topic of the next section.

4.2 Some basic generalizations

So far, we have been able to make the following observations:

- If an illocutionary verb is used and no wh-word appears in Spec-CP, ma is obligatorily selected, not ki.
- If a wh-word appears in Spec-CP after the illocutionary verb, then ki must appear in C, not ma.
- If a wh-phrase remains in situ and no movement occurs, ma is selected by the illocutionary verb. No ki can appear.
- If a wh-word moves through spec-CP and crucially does not stay in C, ma is selected by the illocutionary verb, not ki.

This summary is schematized in Table 2; note that <WH> stands for an unpronounced copy.

One can find an answer to the observed comp-alternation in CVC by formulating the generalization in (31):

(31) The complementizer ma changes to ki iif and only if a wh-phrase is interpreted at its Spec position.

This generalization can be tested against all four cases laid out in Table 2. In Case 1, repeated as (32), ma is selected instead of ki because no wh-phrase is interpreted at the embedded Spec-CP. **CASE 1:** no WH (=27)
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CASE 1: no WH (=27)
tell [CP ma/*ki [TP . . . ]]

CASE 2: WH at Spec-CP (=28)
tell [CP WH [ki/*ma [TP . . <WH> ]]

CASE 3: WH in situ (=29)
tell [CP ma/*ki [TP . . WH ]]

CASE 4: WH moving through Spec-CP (=30)
tell [CP <WH> [ma/*ki [TP . . <WH> ]]

Tab. 2: Complementizer-alternation with ma/ki.

(32) João fra-m ma/*ki/*Ø Maria kunpra libru.
told +me C Maria bought book
‘John told me Mary bought the book.’

In Case 2 repeated here as (33), ki is selected as C instead of ma because the wh-phrase kuze is interpreted as the embedded question at the embedded Spec-CP.

CASE 2: WH at Spec-CP (=28)

(33) Kenhi ki fra-m kuze ki/*ma/*Ø Maria kunpra?
who C told+me what C Maria bought
‘Who told me what Mary bought?’

In Case 3, repeated here as (34), ma is selected instead of ki because the wh-phrase kuze is NOT interpreted as the embedded question at the embedded Spec-CP but as the matrix question by interacting with the matrix C.

CASE 3: WH in situ (=29)

(34) Kenhi ki fra-m ma/*ki/*Ø Maria kunpra kuze?
who C told+me C Mary bought what
‘Who told me Mary bought what?’
Finally, in Case 4 repeated here as (35), ma is selected instead of ki because the wh-phrase kuze only moves through the embedded Spec-CP, so that it is NOT interpreted as the embedded question but interpreted as the matrix question.

**CASE 4:** WH moving through Spec-CP (=30)

(35) Kuze ki João fra-m ma/*ki/*Ø Maria kunpra?

what C João told+me C Maria bought

‘What did John tell me Mary bought?’

Based on the empirical data above, we are able to formulate several important generalizations regarding the CVC comp-alternation: The complementizer ma changes to ki iff a wh-phrase is interpreted at its Spec position; in other words, if a wh-phrase is interpreted in the embedded Spec-CP, then ki must appear. This is shown in (33). A correlated generalization is that ki does not appear in the embedded Spec-CP if no wh-phrase is interpreted at the embedded Spec-CP, as seen in (32). If as in (34) illustrating an in-situ case, the wh-phrase kuze is NOT interpreted as the embedded question at the embedded Spec-CP but as the matrix question by interacting with the matrix C, then ki cannot appear. Finally, in overt movement cases, as shown in (35), if the wh-phrase kuze only moves through the embedded Spec-CP, so that it is NOT interpreted as the embedded question but interpreted as the matrix question, ki cannot appear either.

Based on these data and the previous generalizations, we argue in this paper that the best way to explain the observed comp-alternation is to postulate an uninterpretable Q feature on C or [uQ] on C, which is equivalent to [uwh] on C in Takahashi and Graçanin-Yuksek (2008). More precisely, we propose that given that the complementizer ma changes to ki if a wh-phrase is interpreted at its Spec position, the trigger of the comp-alternation is Q-agreement between C and a wh-phrase. The same type of agreement has been observed in other languages such as Irish (Chung and McCloskey 1987) and Kilega (Carstens 2005), also see Baker (2008).

4.3 *Towards a spec-head agreement analysis*

Our basic analysis can be summarized as follows: The ki/ma-alternation is a morphosyntactic reflex of Q-agreement between [uQ] on C and a wh-phrase (contra Chomsky 2007).
4.3.1 Some evidence from *wh at Spec-CP and *wh in-situ

If the current analysis of the CVC comp alternation as Q-agreement is on the right track, it implies that the agreement is carried out under the spec-head Agreement, not through the probe-goal system.

In order to strengthen our position, let us revisit Cases 2 and 3 laid out above and repeated here for convenience as (36) and (37):

CASE 2: WH at Spec-CP (=28)

(36) Kenhi ki fra-m kuze ki/*ma/*Ø Maria kunpra?
    who C told+me what C Maria bought
    ‘Who told me what Mary bought?’

CASE 3: WH in situ (=29)

(37) Kenhi ki fra-m ma/*ki/*Ø Maria kunpra kuze
    who C told+me C Maria bought what
    ‘Who told me Mary bought what?’

Both (36) and (37) show that only when Spec-CP hosts an overt *wh-phrase (=spec-head), does the comp alternation occur. The implication of this is that the probe-goal system wrongly predicts that Q-agreement with an in-situ *wh-phrase is possible.

The CVC comp alternation supports the spec-head agreement (Chomsky 1991) but runs against the probe-goal system (Chomsky 2000). Our analysis finds further empirical support from yes/no and echo questions.

4.3.2 Some further evidence from yes/no and echo questions

Recall (section 2.2.) that yes/no questions in CVC do not allow the occurrence of *ki in C, as shown in (8), repeated here for convenience.

(38) *Ki João kunpra libru?
    C João bought book
    ‘Did John buy the book?’
    [cf. English: *(Did) John buy the book?]

It is also the case that *ki is not allowed to appear with echo questions, as shown in (39):
Given our spec-head analysis, we can account for the two pieces of data in (38) and (39) by postulating that in the case of yes/no questions in (38), there is no wh-phrase at the Spec of C which has [uQ], so that unvalued [uQ] causes crash. In similar ways, in the case of the echo question in (39), the wh-phrase is in-situ, hence the spec-head configuration is not established. Consequently, the [uQ] on C is not valued and causes crash.

5 Findings and conclusion

There are a few generalizations to be made about the behavior of CVC ki.

In CVC, ki appears in cases of subject extraction. The derivation in (14) shows that, as there is a spec-head configuration between C and the wh-word, ki is expected to appear and does so. In the case of object extraction, the wh-word does not start out in a spec-head relation with C but as we have proposed earlier in this paper, if we assume that Comp in CVC bears an uninterpretable Q feature on C [uQ], this then causes the wh-phrase to check that feature and by doing so moves into Spec-CP and establishes the spec-head relation necessary to the phonological realization of ki. The same uninterpretable Q-feature also accounts for an independent set of data in the language, the observed COMP-alternation between ki and ma, as ki appears in embedded C only if a wh-phrase is interpreted at its Spec.

This set of empirical data allows us to argue that spec-head agreement is a necessary condition to the occurrence of ki in CVC. CVC ki can readily appear in a spec-head configuration with a wh-phrase or be triggered by movement of a wh-phrase to Spec-CP by virtue of the uninterpretable Q-feature on C. This makes CVC a spec-head agreement language.

In summary, this paper has highlighted three main points:

- COMP in CVC bears [uQ] triggering Q-agreement and is the single feature accounting for the distributional behavior of CVC ki.
- The ki/ma-alternation in CVC is a morphosyntactic reflex of Q agreement between [uQ] on C and a wh-phrase. Crucially, our analysis relies on morpho-syntactic features with consequences for learnability.
- Q-agreement in CVC supports Chomsky’s (1995) and Koopman (2006) spec-head Agreement system (contra Chomsky’s (2000) probe-goal system) for languages like CVC.
Abbreviations

C: Complementizer; COMP: Complementizer; CVC: Cape Verdean Creole; GB: Government and Binding; LF: Logical Form; TP: Tense Phrase; EPP: Extended Projection Principle; PP: Prepositional Phrase.

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