

# Information structure, functional left peripheries, and the history of a Hungarian interrogative marker

## 1. Introduction

The present article provides an analysis for the diachronic development of the Hungarian interrogative marker *-e* in embedded questions. I show that its appearance and grammaticalisation in a verb-adjacent position is the direct result of the evolution of functional left peripheries in Old Hungarian (ca. 9th–16th centuries), and the grammaticalisation of marking the interrogative nature of the clause, given here as [Q],<sup>1</sup> at the left edge of the functional vP-periphery (as opposed to the CP-periphery).

The example in (1) illustrates Modern Hungarian embedded yes-no interrogatives:

- (1) Azt kérdeztem, **(hogy)** megérkezett-e Mari.  
that.ACC asked.1SG that PRT.arrived.3SG-Q Mary  
'I asked if Mary had arrived.'

As can be seen, the subordinate clause is introduced by the complementiser *hogy* 'that', the overt presence of which is optional (see Kenesei 1994: 341); furthermore, the subclause contains the interrogative marker *-e*, which is obligatory. By contrast, Old Hungarian embedded yes-no interrogatives show the following configuration (cf. Kenesei 1994: 341):<sup>2</sup>

- (2) mōgadīng nēkōnc **ha** te vag x<sup>c</sup> istēnn<sup>c</sup> fia  
tell.IMP.2SG.PRT we.DAT if you are Christ God.DAT son.POSS  
'tell us whether thou be the Christ, the Son of God'  
(*Munich Codex* 33va; from 1466)

The example in (2) shows on the one hand that the presence of the interrogative marker *-e* is not attested in embedded yes-no interrogatives in Old Hungarian; on the other hand, the complementiser is *ha* ‘if’, which shows no alternation with a zero counterpart.

Hence, the change from structures like (2) to structures like (1) has two main aspects. First, there is a change in the complementiser from *ha* ‘if’ to an optional *hogy* ‘that’. Second, there is a change in that the element *-e* appears. Regarding the status of the element *-e*, it has frequently been analysed as a Focus head, for instance by Van Craenenbroeck and Lipták (2008). This is problematic inasmuch as the element *-e* cannot be directly tied to the notion of focus since it can appear in sentences not containing a focussed constituent, see (1) above, and hence the generation of a designated FocP is not expected. Another possibility would be to analyse *-e* as the head of an IntP in the sense of Rizzi (2001): in that case, the position of *-e* would be appropriately linked to that of other interrogative elements, but at the same time one would be forced to assume that non-interrogative elements (focussed constituents) can move to the specifier of IntP.

I am going to propose that *-e* is the head of a functional projection (FP) on the functional vP-periphery: as such, this position is not directly tied to either focussing or [Q]; this projection is always generated in interrogative clauses in Hungarian but its specifier regularly hosts the focussed constituent in non-interrogative clauses, too. In this way, the generation of *-e* in F and the movement of a focussed constituent to [Spec,FP] are independent from each other. I argue that the necessity of generating the FP in interrogatives is due to the fact that the overt marking of [Q] has grammaticalised on the lower periphery in Hungarian: that is, a [Q] C head passes on its features to the F head, and the [Q] feature is checked off by overt elements in this lower projection.<sup>3</sup> The relevant changes are parallel with the evolution of functional left peripheries: this can be linked to the major word order change from SOV to “Top Foc V

X” (É. Kiss 2013), which was chiefly responsible for the appearance of head-initial functional projections and the of the FP as a landing site for left-peripheral foci.

The present article is structured as follows. Section 2 briefly presents interrogatives in Modern Hungarian; section 3 describes the most important diachronic changes affecting embedded yes-no interrogatives between Old and Modern Hungarian, to be followed by a detailed investigation of Old Hungarian interrogatives in section 4. Finally, section 5 presents a theoretical analysis for the change, accommodating it into a cross-linguistic framework on the relation between clause-typing and functional left peripheries.

## 2. Clause-typing and interrogatives in Modern Hungarian

In Modern Hungarian, main clause questions are marked by a distinctive intonation pattern. In addition, in *wh*-interrogatives a *wh*-element is present, which is also an overt marker of the [Q] nature of the clause. Consider:

- (3) **Ki** érkezett meg?  
**who** arrived.3SG PRT  
‘Who has arrived?’

As can be seen, in (3) the *wh*-element *ki* ‘who’ appears at the front of the clause. In yes-no interrogatives, the interrogative marker *-e* appears optionally (see Kenesei 1994: 339–340),<sup>4</sup> as demonstrated by (4):

- (4) Megérkezett(-e) Mari?  
PRT.arrived.3SG-Q Mary  
‘Has Mary arrived?’

The chief difference between main clause questions and embedded questions is that embedded questions do not have a distinctive [Q] intonation pattern in Hungarian, and hence the [Q] nature of the clause has to be marked in a different way. In *wh*-interrogatives, an overt *wh*-element is present anyway; in addition, the complementiser *hogy* ‘that’ may also appear optionally. Consider:

- (5) Azt kérdeztem, **(hogy)** **ki** érkezett meg.  
 that.ACC asked.1SG **that** **who** arrived.3SG PRT  
 ‘I asked who had arrived.’

In yes-no interrogatives, the appearance of the interrogative marker *-e* is obligatory, and the complementiser *hogy* is optionally present:

- (6) Azt kérdeztem, **(hogy)** megérkezett-e Mari.  
 that.ACC asked.1SG **that** PRT.arrived.3SG-Q Mary  
 ‘I asked if Mary had arrived.’

The patterns represented by (5) and (6) show a great deal of similarity. It has to be noted that the complementiser *hogy* in Hungarian is a general subordination marker and it is not sensitive to [ $\pm$ Q], see É. Kiss (2002), hence its availability in [Q] environments. Considering all this, the embedded interrogative patterns can be described as follows: the optional complementiser *hogy* is a subordination marker, and [Q] has to be marked overtly by a different element, which is a *wh*-phrase in *wh*-interrogatives and *-e* in polar questions. Regarding the position of these various elements, *hogy* as a complementiser is located in a C head; *wh*-operators, however, are located considerably lower in the structure. Operator movement in Hungarian targets different positions for relative operators and *wh*-operators (Horvath 1986); relative operators target a [Spec,CP] position (see also Kántor 2008 and Bacskai-Atkari 2014a), while *wh*-operators target the functional vP-periphery, namely the

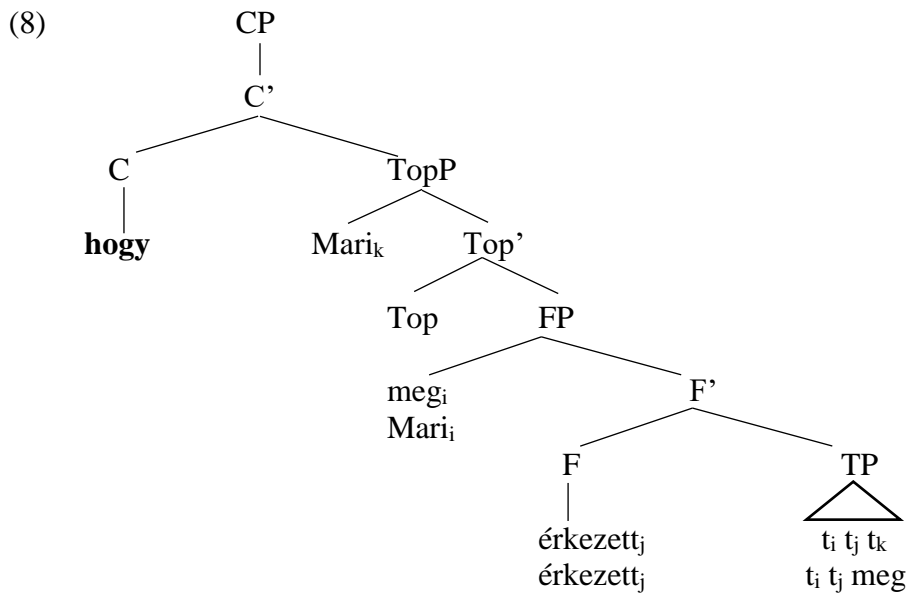
“focus position” (see É. Kiss 2002). In sum, Hungarian operator movement differs crucially from languages like English and German, where both relative operators and *wh*-operators target a [Spec,CP] position.

The position of *wh*-phrases in Hungarian can be easily detected if one considers their similarity with focussed constituents. As is known, focus movement in Hungarian targets a preverbal position adjacent to the verb.<sup>5</sup> Consider the following examples:

- (7) a. *Mari* megérkezett.  
Mary PRT.arrived.3SG  
'Mary has arrived.'
- b. **MARI** érkezett meg.  
Mary arrived.3SG PRT  
'It is Mary who has arrived.'
- c. Tudom, hogy *Mari* megérkezett.  
know.1SG that Mary PRT.arrived.3SG  
'I know that Mary has arrived.'
- d. Tudom, hogy **MARI** érkezett meg.  
know.1SG that Mary arrived.3SG PRT  
'I know that it is Mary who has arrived.'

The clause in (7a) and represents the neutral “verbal particle + verb” order, whereby the verbal particle (*meg*) is located immediately before the lexical verb (*érkezett*); the subject (*Mari*) is in a left-peripheral topic position. By contrast, in (7b) the subject is focussed and therefore it occupies the preverbal position, which hence cannot be filled by the verbal particle at the same time: this results in the inverted “verb + verbal particle” order. The same differences apply to the embedded versions given in (7c) and (7d).

The structures for the subclauses in (7c) and (7d) are given in (8) below:



The topic projection (given here as TopP) is generated only in (7c) and its main clause counterpart. If there is no preverbal focus, the verbal particle (here: *meg*) moves to the [Spec,FP] position. If there is a focussed constituent moving to this position, the verbal particle remains in TP.<sup>6</sup> Further, the representation in (8) indicates the position of the FP in the clause with respect to other projections: it is above the TP and below the CP, and while the FP will always be immediately generated above TP. There are various projections, such as topics, which can move in between the FP and the CP and which are not themselves related to clause typing.<sup>7</sup>

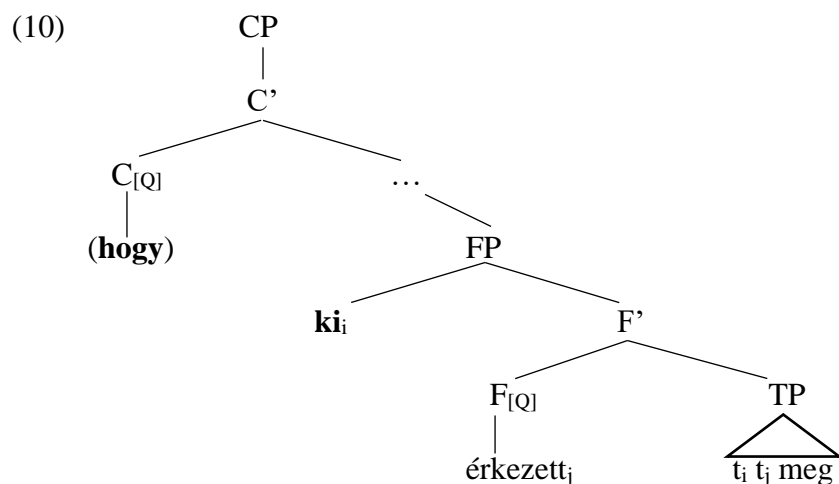
As shown by (9), *wh*-elements target the same position as focussed constituents:

- (9) a. \***Ki** megérkezett?  
 who PRT.arrived.3SG  
 ‘Who has arrived?’
- b. **Ki** érkezett meg?  
 who arrived.3SG PRT  
 ‘Who has arrived?’

The *wh*-element has to be in the position immediately preceding the lexical verb, as in (9b): a higher position is not permitted, as shown by the ungrammaticality of (9a).<sup>8</sup> If *wh*-elements in

Hungarian were located in the [Spec,CP] position, (9a) should be well-formed; since this is obviously not the case, it can be concluded that the overt marking of [Q] is associated with a lower functional projection, which is identified here as FP.

The structure of embedded *wh*-clauses, see (5), is sketched in (10) below:



As can be seen, [Q] is marked on the F head immediately above the VP, and the specifier of FP hosts the *wh*-element (e.g. *ki* ‘who’); the verb moves up to the F head. In addition, the subordinating complementiser (*hogy* ‘that’) may be overt in the topmost CP layer; note that other projections may appear in between the CP and the FP (such as topics), as was seen above, but these are not relevant in terms of clause typing. Since the [Spec,FP] position is occupied by the *wh*-element, the verbal particle (*meg*) remains in the VP in a postverbal position.

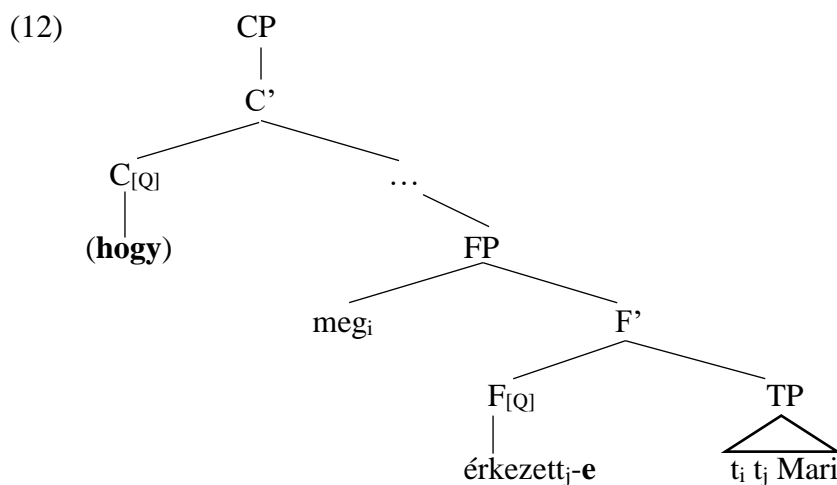
Regarding the patterns with the interrogative marker *-e*, there is either a focussed XP or verum focus. Consider:

- (11) a. Azt kérdeztem, **(hogy)** megérkezett-e Mari.  
 that.ACC asked.1SG **that** PRT.arrived.3SG-Q Mary  
 ‘I asked if Mary had arrived.’

- b. Azt kérdeztem, **(hogy)** MARI érkezett-**e** meg.  
 that.ACC asked.1SG **that** Mary arrived.3SG-Q PRT  
 ‘I asked if it was Mary who had arrived.’

In (11a), there is verum focus with the neutral “verbal particle + verb” word order, while in (11b) the subject *Mari* is focussed, and hence the word order is the inverse “verb + verbal particle”. In both cases, the complementiser *hogy* is optionally present, and the interrogative marker *-e* is attached to the lexical verb. The element *-e* as an interrogative marker occupies the F head position, and the lexical verb moves up to adjoin it: adjunction takes place regularly in that the element moving to a lower position adjoins the higher one from the left (see Kayne 1994 for the Linear Correspondence Axiom, and Baker 1985, 1988 for the Mirror Principle).

Hence, the structure for the subclause in (11a) can be represented as follows:

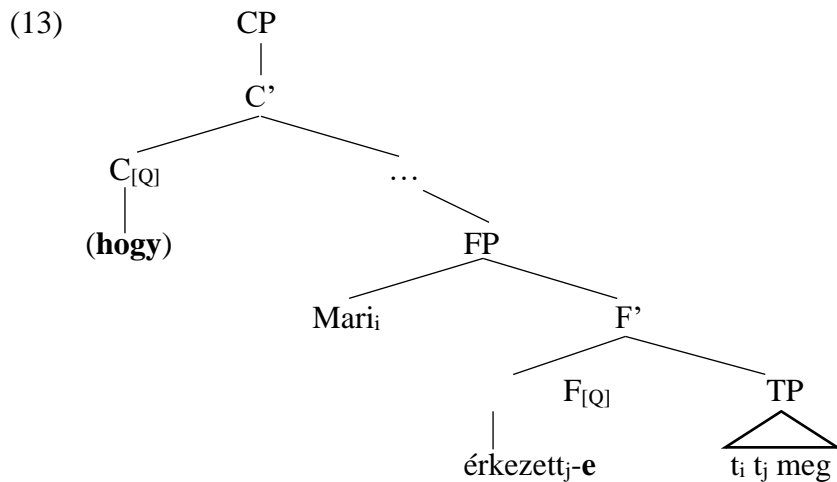


As there is no focussed constituent, the verbal particle can move to the [Spec,FP] position.

The C head can be filled by the overt complementiser *hogy*, just like in (10).

The structure for the subclause in (11b) is given in (13):





Just as in (12), the F head is filled by *-e* and the lexical verb moves up to it via head movement; the overt complementiser *hogy* is licensed again. The difference from (12) is that the subject DP is focussed and hence it occupies the [Spec,FP] position.

Based on the data presented in this section, it can be concluded that in Modern Hungarian: the marking of subordination is linked to the CP-periphery, while the overt marking of [Q] is associated with the functional vP-periphery.

### 3. Diachronic changes in Hungarian embedded yes-no interrogatives

In this section, I am going to review the typical patterns attested in embedded polar questions throughout the history of Hungarian. The three major periods are as follows: Old Hungarian (ca. 9th–16th centuries), Middle Hungarian (ca. 16th–18th centuries), and Modern Hungarian (from the end of the 18th century onwards).

As was mentioned before, Old Hungarian embedded polar questions were introduced by the complementiser *ha* ‘if’, as illustrated by the examples in (14):

- (14) a. Kèrdlec teged az elõ istènnè hog mōgadīng nèkõnc **ha** te  
 ask.1SG you.ACC the living God.SUB that tell.IMP.2SG.PRT we.DAT **if** you  
 vag x<sup>c</sup> istènn<sup>c</sup> fia  
 be.2SG Christ God.DAT son.POSS

‘I adjure thee by the living God, that thou tell us whether thou be the Christ, the Son of God.’

(*Munich Codex* 33va; from 1466)

- b. & a vacnac kezet foguan viue õtet az vćan  
 and the blind.DAT hand.POSS.ACC holding took.3SG he.ACC the street.SUP  
 kuuõl Es õ zemèibè hagapuan õ kezeit reia  
 outside and he eyes.POSS.ILL spitting he hands.POSS.ACC he.SUB  
 vètuen kèrde õtèt **ha** mit latna  
 putting asked.3SG he.ACC **if** what.ACC see.COND.3SG

‘And he took the blind man by the hand, and led him out of the town; and when he had spit on his eyes, and put his hands upon him, he asked him if he saw ought.’

(*Munich Codex* 44ra; from 1466)

The Middle Hungarian pattern is demonstrated in (15);<sup>9</sup> as can be seen, Middle Hungarian still used the complementiser *ha* ‘if’ but the interrogative marker *-e* was already present:

- (15) a. kèrdette tülle **ha** nyughatike  
 asked.3SG (s)he.ABL **if** rest.POSSIB.3SG.Q  
 ‘(s)he asked him/her whether (s)he could rest’  
 (*Witch Trial* 13; from 1724)

- b. el hozvan a vajat Macskával próbáltatta **ha** meg eszi é de  
 off bringing the butter.ACC cat.INS tried.3SG **if** PRT eats Q but  
 a Macska nem is nyúlt hozzá  
 the cat not even touched.3SG it.ALL  
 (*Witch Trial* 1a; from 1736)

Finally, in Modern Hungarian the interrogative marker *-e* is obligatory in embedded polar questions; the complementiser *hogy* may be optional, as in (16a), but certain matrix predicates (such as adjectives) may require its overt presence, as in (16b):<sup>10</sup>

- (16) a. Azt kérdeztem, (**hogy**) Péter szereti-e a lazacot.  
 that.ACC asked.1SG that Peter likes-Q the salmon.ACC  
 ‘I asked if Peter likes salmon.’

- b. Kérdéses,      **\*(hogy)** Péter szereti-**e** a lazacot.  
 questionable    that    Peter likes-Q    the salmon.ACC  
 ‘It is a question if Peter likes salmon.’

The changes in embedded interrogatives can be summarised as follows:

- (17)  $ha_{[Q]} \rightarrow ha_{[Q]} + -e_{[Q]} \rightarrow (hogy) + -e_{[Q]}$

In the first stage, [Q] is marked by the complementiser *ha*; in the second stage, [Q] it presumably marked both by the complementiser and by the interrogative marker *-e*; finally, [Q] is exclusively marked by *-e*, as the optional complementiser *hogy* is insensitive to [ $\pm$ Q]. Hence there is a major change from encoding [Q] at the CP-periphery to encoding [Q] at the functional vP-periphery.

#### 4. The Old Hungarian pattern

Regarding Old Hungarian, so far I have discussed only embedded polar questions; in this section I am going to show how these fit into the system of marking [Q] in Old Hungarian.

Let us start with main clause questions. In Old Hungarian main clause *wh*-interrogatives, the *wh*-element is regularly present as the overt marker of [Q]. An example is given in (18) with the *wh*-element *mi* ‘what’:

- (18) Auag **mi**    valtfagot    ad    ember    o,    lèlkèiert  
 or    **what**    exchange.ACC    gives    human    (s)he    soul.POSS.FIN  
 ‘or what shall a man give in exchange for his soul?’  
 (*Munich Codex 23a*; from 1466)

Main clause polar questions in Old Hungarian very often contained a clause-initial interrogative marker (such as *nemde* ‘isn’t it’), and the clause-final interrogative marker *-e*: both of these were optional on their own, but whenever *-e* appeared clause-finally (unambiguously as a C head), the operator was always present and is assumed to have been obligatory in these cases (É. Kiss 2014: 16). Consider:

- (19) *nēde tū incab nagobbac vattoc azocnal è*  
 Q you rather greater.PL are.3PL those.DAT Q  
 ‘Are ye not much better than they?’  
 (*Munich Codex* 12vb; from 1466)

As can be seen, the interrogative marker *-e* appears in a clause-final position (cf. Kenesei 1994: 341–342): it is not adjacent to the verb, and thus it cannot be located in an FP in the same way it is in Modern Hungarian. Note that as soon as the FP is generated, the finite verb moves up to the F head (see section 2; presumably due to a [fin] feature, see Bacskai-Atkari to appear), hence *-e* cannot be in the F head without the verb moving there, which rules out the possibility of a head-final FP.<sup>11</sup>

Turning now to embedded questions, in embedded *wh*-interrogatives the *wh*-element is naturally present; in addition, the complementiser *hogy* ‘that’ may also optionally appear, similarly to the Modern Hungarian pattern. The example in (20) show the overt presence of *hogy* and the *wh*-element *mi* ‘what’:

- (20) *kèrdezkeđuē / hog mi volna micor halottaibol felkèlend*  
 asking that what be.COND.3SG when dead.ELA up-rises  
 ‘questioning what the rising from the dead should mean’  
 (*Munich Codex* 44vb; from 1466)

Finally, as has already been mentioned, embedded yes-no questions were introduced by the complementiser *ha* ‘if’:

- (21) mōgadm̄g      nèkõnc    **ha** te    vag   x<sup>c</sup>    istènn<sup>c</sup>    fia  
 tell.IMP.2SG.PRT   we.DAT   **if**   you   are   Christ   God.DAT   son.POSS  
 ‘tell us whether thou be the Christ, the Son of God’  
 (*Munich Codex* 33va; from 1466)

Regarding the system of marking [Q] in Old Hungarian, there are two important observations to be made here. On the one hand, it should be obvious that the double encoding pattern attested in Modern Hungarian embedded interrogatives was already present in Old Hungarian embedded *wh*-questions: that is, the marking of subordination and the marking of [Q] are associated with distinct functional projections. On the other hand, the interrogative marker *-e* was already available in Old Hungarian in main clauses, as the head of a head-final CP, as will be discussed in the next section in more detail.

The changes attested from Old Hungarian to Middle Hungarian hence involve a change in the position of *-e* (from clause-final C into a clause-internal F), and the appearance of *-e* in embedded clauses (as opposed to main clauses, where *-e* was present anyway). Neither of these changes was abrupt: as was shown in section 3, the appearance of *-e* in embedded clauses started in clauses still introduced by *ha*, leading to a double overt marking of [Q], and the marker in the CP-periphery disappeared only after the grammaticalisation of marking [Q] in the FP. Similarly, the change in the position of *-e* in main clauses was presumably not the result of the original C head of a head-final CP directly grammaticalising into an F head (of a head-initial FP): there was an intermediate stage involving doubling. Consider (example from É. Kiss 2014: 16, ex. 17):

- (22) Mínemde    elfelethet<sup>hí</sup>-e                      az    aña    v    kis    germõket-e  
 Q                    off.forget.POSSIB.3SG-Q    the   mother   she   small   child.POSS.ACC-Q  
 ‘Can the mother forget her small child?’  
 (*Nádor Codex* 26r; from 1508)

In this case, there is one *-e* in the F head, resulting in *-e* appearing right next to the finite verb, and there is also a second *-e* in a clause final position, in the C head of a head-final CP. In such constructions, the [Q] property is marked twice overtly: both [Q] functional heads, the C and the F, are lexicalised. The grammaticalisation of [Q] in the FP contributed to the ultimate disappearance of clause-final *-e*, and cases like (22) were crucial in terms of reanalysis in that the shift from the C head as the primary marker into the F head as the primary marker could take place in a gradual fashion. On the other hand, ambiguous constructions (verb-final TPs and elliptical clauses) were also crucial in terms of reanalysis (see the discussion in section 5). In these instances, it is impossible to tell from the surface patterns whether *-e* is underlyingly a C or an F head, and the lack of environments where *-e* is unambiguously the head of a head-final CP contributed to the gradual disappearance of the corresponding structures.

## **5. Clause-typing and functional left peripheries**

In this section, I am going to present my analysis for the diachronic changes attested in Hungarian polar interrogatives. Section 5.1 briefly describes the relevant theoretical background; section 5.2 presents the results of a corpus study of Old Hungarian texts; finally, section 5.3 provides an analysis based on the empirical data.

### **5.1. The theoretical background**

In order to provide a theoretical account for the changes described above, let us first overview some basic assumptions concerning the marking of [Q] and of subordination cross-linguistically. A fairly traditional assumption is that clause-typing and the marking of subordination alike are associated with the CP-periphery (Rizzi 1997); with respect to overt

marking, however, there is considerable parametric variation. As far as embedded interrogatives are concerned, there are two major types of encoding these properties: single encoding and double encoding.

In single encoding, there is one element responsible for marking clause type and subordination overtly. This can be observed, for instance, in the case of German *ob* ‘if’ (or English *if*):

(23) Ich weiß nicht, **ob** er kommt.  
I know.1SG not if he comes  
‘I don’t know if he is coming.’

In double encoding, there are different elements responsible for the overt marking of clause type and of subordination. Note also that the element overtly marking the type of the clause may also be an operator (e.g. a *wh*-operator or a relative operator). This can be attested in embedded *wh*-interrogatives in certain German dialects (cf. Weiß 2013: 777–778), and similar patterns can be observed in many non-standard varieties of English, and also Middle English. The example in (24) shows the co-occurrence of the *wh*-element *wer* ‘who’ and the complementiser *dass* ‘that’ in Bavarian (original example from Weiß 2013: 778, ex. 15a, written here in Standard German spelling and with English glosses):

(24) Ich weiß auch nicht, **wer dass** da gewesen ist.  
I know.1SG too not who that there been is  
‘I don’t know who was there either.’

The example in (24) is similar to Modern Hungarian in that the *wh*-element co-occurs with a general subordination marker. The chief difference is that while in German they are located in the same CP projection (the *wh*-element in the specifier, the complementiser *dass* in the head,

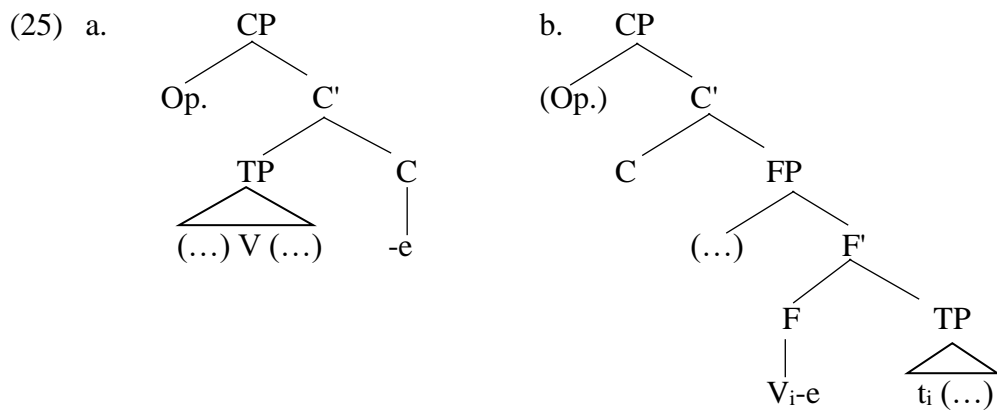
resulting in a doubly filled COMP),<sup>12</sup> in Hungarian the two elements are associated with different projections, moreover, with different functional layers.

Considering the question of single versus double encoding throughout the history of Hungarian, the following can be observed in embedded interrogatives. In *wh*-interrogatives, double encoding is attested in all periods: an optional overt C head (*hogy* ‘that’) marks subordination, and the marking of [Q] is carried by the *wh*-element itself. Double encoding can also be observed in yes-no interrogatives in Modern Hungarian: the optional overt C head (*hogy*) marks subordination, and the [Q] property is marked by *-e*. Single encoding was present in Old Hungarian yes-no interrogatives: the C head *ha* ‘if’ marked both subordination and [Q], similarly to *ob* ‘if’ in German. Middle Hungarian thus represents an intermediate stage in the transition from single to double encoding.

Let us now examine how this is related to functional left peripheries. In embedded interrogatives, the overt marking of subordination is associated with the CP-periphery in all periods. The overt marking of [Q] is linked to the FP in Modern Hungarian entirely: this is the result of the evolution of functional vP-periphery during Old (and partially Middle) Hungarian. Initially, however, [Q] was marked by *ha* ‘if’ at the CP-domain, and the clause-final *-e* was a head of a head-final CP, hence this element was also initially associated with the CP-layer.

As discussed in sections 3 and 4, there is evidence for *-e* as the head of a head-final CP in Old Hungarian, the period which also saw the appearance of the clause-internal *-e* as an F head (see also the arguments against a head-final FP in the same sections). The changes are attested not only merely within the period of late Old Hungarian, but potentially also within a single text. Before turning to the results of my corpus study, let me first briefly highlight what the exact structures are and which surface patterns reflect them. Consider first the minimal tree representations in (25) below:





The trees are minimal in the sense that they contain only the projections obligatorily present in the relevant structures: a CP and a TP in (25a), and an additional FP in (25b); of course, as was discussed in section 2, there are other possible projections between the CP and the FP, but these do not matter here. The denotation “(…)” refers to optionally realised additional phonologically visible material that may appear in the constructions. In both cases, an operator may appear in [Spec,CP]: this is optional in (25b), while it is assumed to have been obligatory in (25a), see the discussion in section 3. However, since there is no direct evidence for the ungrammaticality of clause with a clause-final *-e* and with no overt operator, I will not consider the absence of the overt operator to be a diagnostic of identifying structures like (25b). In (25a), *-e* is a clause-final C head and it cliticises onto the last element in the TP: this may be the verb itself but it may be another constituent following the verb as well. In (25b), *-e* is a clause-internal F head and it cliticises onto the verb.

Essentially the following four surface strings have to be considered:

- (26) a. (...) V ... -e  
 b. (...) V -e ...  
 c. (...) V -e  
 d. ... -e

Again, “...” denotes overtly realised material that is not the finite verb (V) or the interrogative marker (-e): if this is given in brackets, it indicates that the presence or absence of such a string is not relevant for the properties of the given type in (26). The presence or absence of this string is crucial after the verb, since it determines whether the verb and the interrogative marker are syntactically adjacent or not. By contrast, it is usually immaterial before the verb, unless there is no overt verb of course (in which case some other element is obligatory, since the interrogative marker is a bound morpheme that has to be attached to some phonologically visible element).

The surface pattern in (26a) indicates an unambiguous head-final C status for -e, which is clearly not adjacent to the verb: this pattern is excluded in Modern Hungarian, while all the other three are permitted. This pattern can only arise in structures like (25a), since in this case there is no F head to hold both the verb and -e.

The surface pattern in (26b) indicates an unambiguous head-initial F status for -e, which cannot be clause-final since there is material following it. This pattern can only arise in constructions like (25b), since the TP would not follow -e otherwise. Note that there is also no reason to believe that the string following -e would be extraposed either: there are several examples (not just in the Vienna Codex) where the material following the verb cannot be assumed to be extraposed, as illustrated in (27) below. Such instances include bare nouns, as in (27a), pronouns, as in (27b) and verbal particles, as in (27c). Consider:

- (27) a. **Wagene bor**  
is.Q wine  
'Is there wine?'  
(*Hungarian Manual of the Scribe János Rotenburg* 62b; from 1418–1422)

- b. Minēdè hirtèlèn tamadnac **é fel**  
 Q suddenly arise.3PL Q up  
 ‘Shall they not rise up suddenly?’  
 (*Vienna Codex 272*; from the middle of the 15th century)
- c. zǵz vagÿe **teh**  
 virgin be.2SG.Q you  
 ‘Are you a virgin?’  
 (*Booklet on the Dignity of the Apostles 18v*; from 1521)

Turning back to (26), the pattern in (26c) is ambiguous. On the one hand, it is possible that the interrogative marker would be attached to the verb anyway, corresponding to the structure given in (25b). On the other hand, it is also possible that the adjacency of the verb and the interrogative marker is the result of the verb being the clause-final element in a construction like (25a), where the string following the verb (V) is optional.

Similarly, the pattern in (26d) is ambiguous: these are cases where the verb is not overt (mostly elliptical constructions, but note that the 3rd person copulas are also zero in the present tense). On the one hand, it is possible that the interrogative marker would attach to the verb in the full structure and cliticise to the material in [Spec,FP] only as a last resort, in line with the representation in (25b). On the other hand, it is also possible that it would be clause-final as in (25a), where the presence or the absence of V does not change the fact that *-e* attaches to the last phonologically visible element in TP.

## 5.2. The data

Let me now turn to the results of my corpus study. I conducted a corpus search based on the normalised part of the Old Hungarian Concordance corpus (the token numbers given below always refer to the normalised version without punctuation marks). As of 14 September 2016, the search gave altogether 300 hits for the interrogative marker in altogether 8 texts (many other texts in the normalised corpus seem to contain no instances of *-e*, but this is in line with

the fact that *-e* was used only in main clauses in Old Hungarian, and it was also optional).

Note also that the corpus is restricted to Old Hungarian only.

The highest number of examples is attested in the Munich Codex (1466; token number: 63990), and all the possible surface patterns are attested, as given in Table 1:

Table 1: Patterns of *-e* in the Munich Codex

Surface pattern	Underlying structure	Number of occurrences
(...) V ... <i>-e</i>	unambiguous → head-final C	<b>14 (8.97%)</b>
(...) V <i>-e</i> ...	unambiguous → (head-initial) F	<b>65 (41.67%)</b>
(...) V <i>-e</i>	ambiguous → head-final C or (head-initial) F	61
... <i>-e</i>	ambiguous → head-final C or (head-initial) F	16
<b>TOTAL</b>		<b>156</b>

The Vienna Codex (middle of the 15th century; token number: 55346) also has a high number of examples, and again all the possible surface patterns are attested, as given in Table 2:

Table 2: Patterns of *-e* in the Vienna Codex

Surface pattern	Underlying structure	Number of occurrences
(...) V ... <i>-e</i>	unambiguous → head-final C	<b>7 (10.61%)</b>
(...) V <i>-e</i> ...	unambiguous → (head-initial) F	<b>32 (48.48%)</b>
(...) V <i>-e</i>	ambiguous → head-final C or (head-initial) F	18
... <i>-e</i>	ambiguous → head-final C or (head-initial) F	9
<b>TOTAL</b>		<b>66</b>

As shown by Table 1 and Table 2, the number of unambiguous head-initial F occurrences for *-e* is quite high, and amounts to slightly more than 40% of all the cases attested in the Munich Codex and to almost 50% in the Vienna Codex. This suggests that *-e* by the middle of the 15th-century was predominantly used as the F head (contrary to the assumption of Kenesei 1994: 342). Still, the previous stage was co-present for a while, as also indicated by the relatively high number (amounting to around 10%) of *-e* as a clause-final C head.

Apart from the Munich Codex and the Vienna Codex, there was only one text in the normalised corpus that contained instances both of unambiguous final C and of F: this is the Guary Codex (before 1508; token number: 20126). The data are given in Table 3 below:

Table 3: Patterns of *-e* in the Guary Codex

Surface pattern	Underlying structure	Number of occurrences
(...) V ... <i>-e</i>	unambiguous → head-final C	<b>1 (14.29%)</b>
(...) V <i>-e</i> ...	unambiguous → (head-initial) F	<b>1 (14.29%)</b>
(...) V <i>-e</i>	ambiguous → head-final C or (head-initial) F	3
... <i>-e</i>	ambiguous → head-final C or (head-initial) F	2
<b>TOTAL</b>		<b>7</b>

Since the total number of occurrences is low, there is not much to say about this particular data set; however, it can be concluded that the appearance of both patterns is not restricted to the Munich Codex and the Vienna Codex (the two, together with the Apor-codex, are frequently referred to as the ‘Hussite Bible’ in the literature, indicating a historical and linguistic relatedness).

The remaining texts in the normalised corpus do not show any instances of unambiguous head-final C uses of *-e*: the texts contain unambiguous F uses and a number of ambiguous

patterns, hence the absence of clear cases of head-final C does not necessarily mean that this pattern was excluded from the given texts. The results for the Booklet on the Dignity of the Apostles (“Könyvecse”, from 1521; token number: 9757) and the Jókai Codex (around 1140; token number: 23194) are given in Table 4 below:

Table 4: Patterns of *-e* in the Booklet (“Könyvecse”) and the Jókai Codex

Surface pattern	Underlying structure	Booklet	Jókai Codex
(...) V <i>-e</i> ...	unambiguous → (head-initial) F	<b>23 (53.49%)</b>	<b>3 (37.50%)</b>
(...) V <i>-e</i>	ambiguous → head-final C or (head-initial) F	9	3
... <i>-e</i>	ambiguous → head-final C or (head-initial) F	11	2
<b>TOTAL</b>		<b>43</b>	<b>8</b>

The results for the Kazinczy Codex (1526–1541; token number: 20027) and the Miskolc Fragment (1525; token number: 886) are given in Table 5:

Table 5: Patterns of *-e* in the Kazinczy Codex and the Miskolc Fragment

Surface pattern	Underlying structure	Kazinczy Codex	Miskolc Fragment
(...) V <i>-e</i> ...	unambiguous → (head-initial) F	<b>2 (28.57%)</b>	<b>1 (50.00%)</b>
(...) V <i>-e</i>	ambiguous → head-final C or (head-initial) F	5	1
<b>TOTAL</b>		<b>7</b>	<b>2</b>

Finally, there are texts that contain instances of unambiguous F head uses of *-e* only: these are the Bod Codex (first half of the 16th century; token number: 8754) and the Hungarian Manual of the Scribe János Rotenburg (1418–1422; token number: 95). The results are summarised in Table 6:

Table 6: Patterns of *-e* in the Bod Codex and the Hungarian Manual

Surface pattern	Underlying structure	Bod Codex	Hungarian Manual
(...) V <i>-e</i> ... = <b>TOTAL</b>	unambiguous → (head-initial) F	<b>6</b>	<b>3</b>

It seems that the head-final C use of *-e* was quite infrequent in Old Hungarian, and the text that contains the most instances thereof (in the normalised corpus) is considerably earlier than the other ones. Note that texts outside the scope of the searchable normalised corpus may contain relevant examples: the Apor Codex (end of the 15th century – beginning of the 16th century) can be mentioned, which is standardly grouped together with the Munich Codex and the Vienna Codex, and the Nádor Codex (1508) also belongs here, see the examples given by É. Kiss (2014: 16).

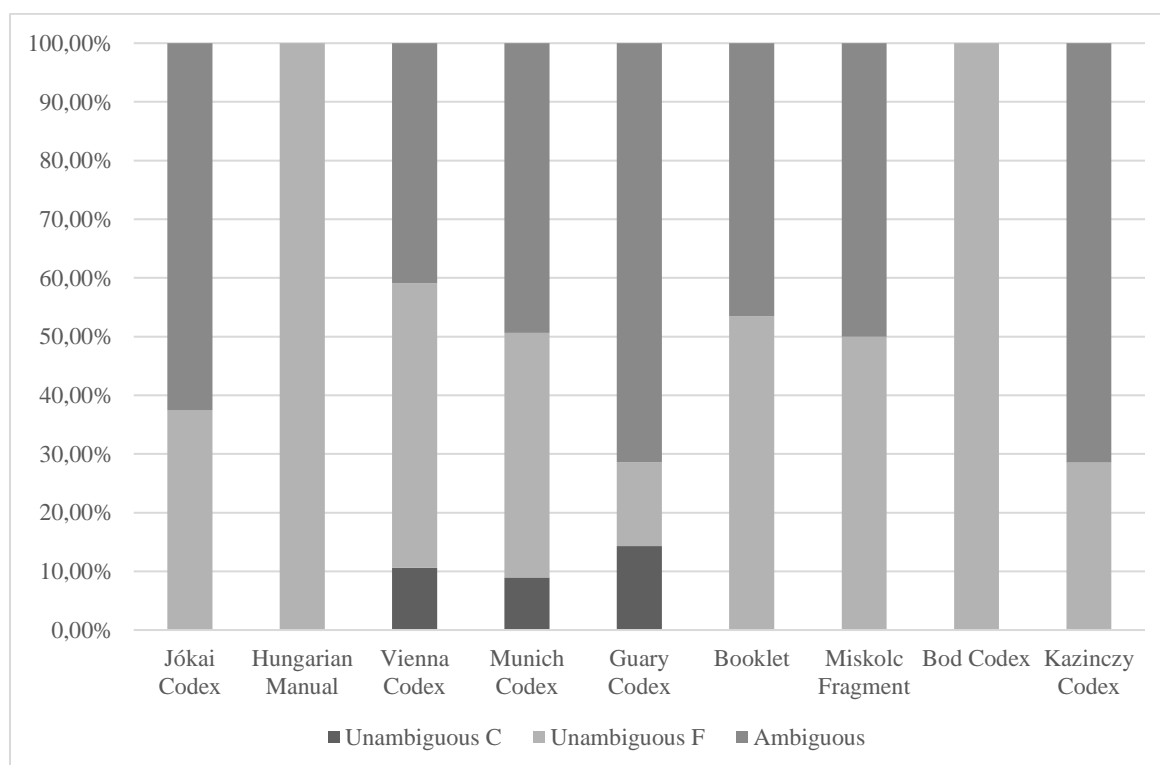
Of course, the development in this period involves the co-existence of both major patterns for a while and thus the process cannot be modelled in a purely linear fashion. Based on the approximate dates of the individual texts given above, the chronological order is reflected in Table 7 below. In order to represent the differences more clearly, this chart includes only the two unambiguous patterns under scrutiny, while the two ambiguous patterns (discussed above) are subsumed as ambiguous.

Table 7: The distribution of unambiguous patterns

Text	Unambiguous C	Unambiguous F	Ambiguous
Jókai Codex	0.00%	37.50%	62.50%
Hungarian Manual	0.00%	100.00%	0.00%
Vienna Codex	10.61%	48.48%	40.91%
Munich Codex	8.97%	41.67%	49.36%
Guary Codex	14.29%	14.29%	71.42%
Booklet	0.00%	53.49%	46.51%
Miskolc Fragment	0.00%	50.00%	50.00%
Bod Codex	0.00%	100.00%	0.00%
Kazinczy Codex	0.00%	28.57%	71.43%

The differences are visualised in Figure 1 below.

Figure 1: The distribution of unambiguous patterns





As can be seen, the development shows considerable variation in this period and a substantial portion of the available data contains ambiguous patterns. The percentage of unambiguous head-final C patterns is very low and occurs only in texts dating before 1508. It seems to be a fair conclusion that late Old Hungarian is precisely the period when the end of the change from head-final C into head-initial F can be observed.

### 5.3. Discussion

The question arises why the change took place. In Old Hungarian, a major typological change in word order can be observed from Proto-Hungarian SOV to “Top Foc V X” in Old Hungarian (see É. Kiss 2013). The change can partially be observed in Old Hungarian, too. On the one hand, this involved a change from predominantly head-final to predominantly head-initial projections. On the other hand, an increased preference of finite over non-finite subordination can be detected (see Bacskai-Atkari and Dékány 2014), which was also crucial in the evolution and reinforcement of functional left peripheries both in the CP-domain and in the functional vP-domain.

The effects of these major changes can also be detected in embedded yes-no-questions. The main triggers of the change from marking by *ha* ‘if’ to the combination of *hogy* ‘that’ + *-e* are hence the following. First, an increased role of the general finite subordination marker (*hogy* ‘that’) can be observed during Old Hungarian, in line with the increased role of finite subordination and the evolution and strengthening of the (head-initial) CP-periphery (see Bacskai-Atkari 2012, 2014a, 2014b). This was a crucial factor in the appearance of *hogy* in embedded [Q] clauses, first in *wh*-interrogatives and later in yes-no questions.

Second, the overt marking of [Q] grammaticalised on the functional vP-periphery: in this respect, an analogy from *wh*-questions into yes-no questions can be observed. This caused the reanalysis of *-e* into an F head: as described at the end of section 4, it is supposed that *-e* was

reinterpreted from a head-final C into a head-initial F head in two facilitating environments: doubling constructions and elliptical constructions. The change happened in parallel with the evolution of the functional vP-periphery. Doubling is illustrated in (22), repeated here as (24) for the sake of convenience (É. Kiss 2014: 16, ex. 17):

(28) *Mínemde* *elfelethethí-e* *az* *anya* *v* *kis* *gyermeket-e*  
Q off.forget.POSSIB.3SG-Q the mother she small child.POSS.ACC-Q  
'Can the mother forget her small child?' (Nádor Codex 26r; from 1508)

As can be seen, one *-e* is attached to the verb, and another one appear clause-finally, hence as a head of a head-final C; furthermore, the interrogative marker *minemde* 'isn't it' appears clause-initially, just as *nemde* did, see section 4.<sup>13</sup>

Third, the changes in the expression of focus also contributed to the change observed in embedded interrogatives. The major typological change from SOV to "Top Foc V X" resulted in the establishment of a preverbal focus position: sentential stress regularly falls on the left edge of the relevant Intonational Phrase, which is either the verb, or the element located in the immediate preverbal position, as described by Szendrői (2001). However, the [Spec,FP] position can be occupied by elements other than focus, too: for instance, by negatives or by verbal particles (see É. Kiss 2008b), hence there is no reason to believe that this position is directly linked to the notion of focus. The element *-e* is the head of this FP, and as it is clearly not a focus marker, it should be treated as an interrogative marker in polar questions.

## Conclusion

This article examined the diachronic changes in embedded yes-no interrogatives in Hungarian, with particular attention paid to the typological differences between Old

Hungarian and Modern Hungarian. While in Old Hungarian embedded yes-no interrogatives were marked by the complementiser *ha* ‘if’, in Modern Hungarian they are marked by an optional complementiser *hogy* ‘that’ for subordination and by the interrogative element *-e* for [Q]. It was shown that embedded polar questions in Hungarian underwent a change from single encoding to double encoding, with respect to the overt markers of subordination and the [Q] property.

The particular change is also linked to a number of more general factors in the language. Among others, it is related to the issue of clause-typing, and the grammaticalisation of [Q] at the functional vP-periphery in particular. In addition, the evolution of functional left peripheries also played a crucial role, on that it strengthened the head-initial CP layer, and saw the rise of the functional vP-layer. Finally, the role of information structure must also be considered: the establishment of the focus position at the functional vP-periphery contributed to the reinforcement of that periphery.

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<sup>1</sup> The feature specification of interrogative clauses – either constituent questions or polar questions – is slightly more complex: while the feature [Q] is responsible for typing the clause as interrogative, there is a [wh] feature that is responsible for marking the scope of the *wh*-element (see Ginsburg 2009). As pointed out by Bayer (2004), while the overt marking of the two features coincides in several languages (including English and German), there are also many languages where the two are separated, resulting in doubling patterns in constituent questions (this applies to Japanese and to certain non-standard dialects of Dutch). The point is that in languages like English or Hungarian, the *wh*-element in constituent questions is both [wh] and [Q], that is, it does not only take scope over the clause as an indefinite but it is also able to type the clause as interrogative overtly, hence no additional element is needed. In constituent questions, the operator is necessarily overt since it carries non-recoverable information and it is also focussed. Polar questions also contain a *wh*-type operator corresponding to *whether*: this operator turns the proposition into a ‘proto-question’ (Bayer 2004, following Karttunen 1977), and it marks the scope of a covert *or* (Larson 1985). It is recoverable; hence, in many cases it is not overt at all, since the type of the clause can be marked by the complementiser as well. Hence, constituent questions and polar questions differ primarily in the semantic properties of the operator and not in the presence of absence of the morphosyntactic features [Q] and [wh]. In this article, I will concentrate on the issue of marking the clause type interrogative and will not be dealing with the exact role of the operator in polar questions, therefore I will merely use the [Q] feature in all the representations. (Alternatively, if one has to deal with a single interrogative clause-typing

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feature, one could naturally adopt [wh] as the general interrogative feature, as is customary in the literature, see for instance Kenesei 1994 and Zimmermann 2013.) Note that “Q” in the glosses merely refers to ‘question particle’ and should not be confused with the clause-typing feature [Q].

<sup>2</sup> The Old Hungarian data are taken from the searchable (normalised) database of the Old Hungarian Concordance, available at <http://omagyarkorpusz.nytud.hu/en-intro.html>. The metadata given in this paper – date, token numbers – for the individual texts are also taken from there.

<sup>3</sup> This means that *-e* is base-generated as an F head and not as a C head, contrary to Kenesei (1994), who assumes that the Q element has to lower from the C to some clause-internal functional projection to adjoin to the verb. In my analysis, no lowering is necessary, which is favourable on general theoretical grounds. On the other hand, I do adopt the idea of Kenesei (1994: 341–343) that the element *-e* has to be a head.

<sup>4</sup> See also Gyuris (2017) on the pragmatic differences between clauses with and without *-e*.

<sup>5</sup> Note that not all foci have to undergo leftward movement in Hungarian: in situ foci are also possible. Horvath (1986) identifies exhaustivity as the key property of preverbal foci. The cross-linguistic study of É. Kiss (1998) argues that foci undergoing leftward movement are identificational (and therefore exhaustive; this type is also referred to as structural focus as it has a syntactic reflex and the focussed constituent takes scope), while in situ foci are instances of information focus. For the present investigation, the exact nature of fronted foci is not relevant; what matters is that if a focussed constituent moves to the left periphery, then it lands in a relatively low functional projection and is adjacent to the finite verb, while topics and elements in the CP obligatorily precede such focussed constituents. In the present discussion, the notions “focus” and “focussed constituent” refer to this particular type of focussing.



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<sup>6</sup> I adopt the analysis given by É. Kiss (2008a), who argues that focussed elements move from within the VP first to a PredP, then to the TP, and finally to an FP, while the verb moves to the heads of the same projections. See also Surányi (2011) on the relation between TP and focussing; cf. Brody (1990), Kenesei (1989), Surányi (2009) on the role of TP regarding finite verb movement and elements such as verb modifiers appearing in [Spec,TP], showing that [Spec,TP] is not a canonical subject position). Since in this paper the projections below TP are not relevant, I will consistently use a triangle for TP.

<sup>7</sup> As should be clear, the relative position of the FP is fixed, hence preposed foci cannot move higher than topics. This is demonstrated in the example below, where the sentence is fine with the first interpretation where *Mari* ‘Mary’ is focussed but not with the second interpretation where *tegnap* ‘yesterday’ should be focussed:

- (i) Tegnep **MARI** érkezett meg.  
yesterday Mary arrived.3SG PRT  
‘It was Mary who arrived yesterday.’  
# ‘It was yesterday when Mary arrived.’

In order to derive the second interpretation, the order of *tegnap* and *Mari* has to be changed:

- (ii) Mari **TEGNAP** érkezett meg.  
Mary yesterday arrived.3SG PRT  
‘It was yesterday when Mary arrived.’

Naturally, the sentence in (ii) would not be compatible with an interpretation where the subject is focussed.

<sup>8</sup> Apart from the interaction with the preverbal element, the strictly verb-adjacent position of the *wh*-phrase can be detected in clauses containing an additional focussed element. Consider:

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- (i) **TEGNAP ki** érkezett meg?  
yesterday who arrived.3SG PRT  
'Who arrived YESTERDAY?'
- (ii) \***Ki** **TEGNAP** érkezett meg?  
who yesterday arrived.3SG PRT  
'Who arrived YESTERDAY?'

As can be seen, the *wh*-constituent must follow the focussed constituent. The data indicate that the FP is iterable; however, if the F head encodes [Q], it must attract an interrogative constituent to its specifier (if there is no interrogative element in the head itself) to check off this feature, and a non-interrogative focussed constituent cannot do this job. Once the feature is checked off, the FP can naturally project further and be iterated; the necessity of operator movement to the lowest projection can also be observed in the CP-domain (cf. Bacskai-Atkari 2016a), and it follows from the Minimal Link Condition (see Fanselow 1990, 1991; Chomsky 1995). The point is that *wh*-phrases in Hungarian do not merely move below the CP-domain, they move specifically to the lowest functional projection above TP.

<sup>9</sup> The Middle Hungarian data are taken from the searchable (normalised) database of the Historical Corpus of Private Correspondence (“Történeti Magánéleti Korpusz”), available at <http://tmk.nytud.hu/>.

<sup>10</sup> The factors determining whether *hogy* has to be overt are independent of the [Q] nature of the clause; see Kenesei (1994) for an analysis of *hogy*-deletion in Hungarian.

<sup>11</sup> In addition, there are several reasons to believe that there was no head-final FP at all in the history of Hungarian. As shown by É. Kiss (2014), there are various factors indicating that Proto-Hungarian was a language with head-final CP, TP and VP projections, the properties and the basic SOV order inherited from the Proto-Ugric stage. However, by the end of Proto-Hungarian a major word order change took place, which resulted in the reinterpretation of surface SOV orders as “Top Foc V X”, and this process involved the emergence of the FP

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position as a landing site for preposed foci, including the movement of the verb to the F head position. That is, the FP projection arose as a head-initial projection, fitting into the context of the general change from head-final to head-initial functional projections in the language. In cases like (19), then, if one were to pursue an analysis of *-e* as an F head in a head-final FP, this would be highly problematic for the following reasons. First, the FP appeared in the language already as a head-initial projection. Second, the analysis of clause-final *-e* as a C in a head-final CP is well supported by the closest related languages, where its cognates are likewise clause-final interrogative C heads (see É. Kiss 2014). Third, even a head-final FP would require verb movement to the F head, hence the verb should be adjacent to *-e*.

<sup>12</sup> Patterns like (24) challenge the universal applicability of the so-called “Doubly Filled COMP Filter” (DFCF) of Chomsky and Lasnik (1977). There have been several attempts in the literature to analyse constructions like (24) in a way that avoids the violation of the DFCF, including minimalist approaches such as Baltin (2010). However, there are a number of problems with these approaches. In particular, they are unable to handle certain asymmetries attested in several dialects (see Bayer and Brandner 2008 on these), and they are unable to exclude the possibility of doubling structures in polar interrogatives in the same dialects in a principled way (see Bacskai-Atkari 2016a, 2016b on these problems and their resolution in a feature-based approach). On the other hand, the very notion of the DFCF is highly problematic as its application domain within a single language should also be restricted (see Bacskai-Atkari 2016a, 2016b), and at best it can be thought of as the reflex of general economy principles. In short, the analysis of (24) as involving a single CP is favourable both on theoretical and empirical grounds.

<sup>13</sup> At this point, one might wonder whether the reanalysis from C to F constitutes a counterexample for the upward grammaticalisation theories of Roberts and Roussou (2003) and van Gelderen (2004, 2009) as the element *-e* clearly changes to a lower position. In my

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view, this is not necessarily the case. It should be kept in mind that the reanalysis of *-e* does not involve actual grammaticalisation in the sense of feature loss (which would predictably be coupled with upward reanalysis, as also discussed by van Gelderen 2004, 2009). Rather, as demonstrated by examples like (28), there were two candidate positions for the same function (marking interrogative clause type overtly), and the change in the preference towards the lower position (and the ultimate loss of the higher position) presumably went along the changes in where main stress was assigned. The two positions are functionally equivalent and belong to two different peripheries (note also that clause type is still encoded by C), that is, they are not adjacent projections where a classical pattern of elements climbing upwards during grammaticalisation could be expected in the first place. Robert and Roussou (2003: 207) suggest that while upward reanalysis can change the category, downward reanalysis normally only involves the loss of movement but no categorial change. As shown by Quinn (2009), such a stance is clearly too restrictive as in some cases downward reanalysis involves category change and de-grammaticalisation. She argues that this is the case in New Zealand English, where stative *have* has undergone reanalysis from a Pred into a V head, most probably due to analogy (with canonical possessive constructions). While the de-grammaticalisation part does not apply to *-e*, analogy seems to have played an important role here as well: as discussed previously, the overt marking of the interrogative nature of the clause was already tied to the FP in constituent questions.