

The Structure of Finnish CP and Feature Inheritance*

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According to the feature inheritance hypothesis, functional heads inherit grammatical features from higher phase heads. Finite tense T, for example, inherits phi-features and/or the topic feature from C, while V inherits features from v^* . Here we argue, based on new observations concerning the Finnish CP, relative clauses in particular, that feature inheritance applies also one step higher. Specifically, we argue that the lower Focus/operator head inherits features from the higher Force-head within the CP-layer. A new analysis of the structure of the Finnish CP is presented. The proposal is then positioned within a cross-linguistic theory of the CP-cartography. An analysis is presented where Finnish utilizes overt morphology and relatively few syntactic positions to express linguistic notions that in several other languages (e.g. Italian) are expressed by means of projecting distinct syntactic positions.

Keywords: *feature inheritance; Finnish; CP; cartography; relative clauses*

1 Introduction

It has gone previously unnoticed that while Finnish relative clauses are, in some sense, full CPs, they lack much of the discourse-oriented left-peripheral structure of other CPs. Here is a way to illustrate the phenomenon. In Finnish, both *wh*-pronouns (1a), relative pronouns (1b) and focused phrases (1c) occupy a left-peripheral operator position (Huhmarniemi 2012, Huhmarniemi & Brattico 2013a). In addition to *wh*-pronouns and relative pronouns, elements suffixed with left-peripheral discourse clitic particles occur in the same position (1d-h) (Vilkuna 1989, Vainikka 1989, Kenesei 1994, Koskinen 1998, Huhmarniemi 2012). The discourse particles and *wh*-pronouns can also be combined, that is, suffixed to the same host word, as long as the host occupies the single left peripheral position (1i-j).¹

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¹ We use the following abbreviations in this article: σ = head hosting various operator-like elements in Finnish; Λ = relative operator; 3SG = number and person features; ACC = accusative Case; C = complementizer; CP = complementizer phrase; EPP = extended projection principle; Fin = finiteness head; FOC = contrastive focus feature; Force = force head; hAn = the hAn-particle, expressing familiarity; ID = a feature involved in reference identification; kO = the kO-particle, representing yes/no interrog-

- (1) a. *Kenet Merja tapasi ___?* (*interrogative*)
 who Merja met
 ‘Who did Merja meet?’
- b. *jonka Merja tapasi ___* (*relative clause*)
 who merja met
 ‘who Merja met’
- c. *Kotiin Merja lähti ___* (*contrastive focus phrase*)
 Home Merja went
 ‘It was home that Merja went (not to work).’
- d. *Pekan-han Merja tapasi ___* (*discourse particle -hAn*)
 Pekka-*hAn* Merja met
 ‘It was Pekka that Merja met.’
- e. *Pekan-ko Merja tapasi ___?* (*yes/no particle*)
 Pekka-*kO* Merja met
 ‘Was it Pekka who Merja met?’
- f. *Kenet-hän Merja tapasi ___?* (*interrogative and -hAn*)
 who-*hAn* Merja met
 ‘(I wonder) who Merja met?’
- g. *Merjan-pa Pekka tapasi ___* (*discourse particle -pA*)
 Merja-*pA* Pekka met
 ‘It was Merja who Pekka met.’
- h. *Kuka-s siellä on?* (*interrogative and discourse particle -s*)
 who-s there is
 ‘Who’s there?’
- i. *Minne-kö-hän Merja lähti ___?* (*yes/no particle and -hAn*)
 where-*kO-hAn* Merja went
 ‘(I wonder) where Merja went?’
- j. *Pekan-pa-s Merja tapasi ___* (*particles -pA and -s*)
 Pekka-*pA-s* Merja met
 ‘It WAS Pekka that Merja met.’

Crucially, the left-periphery of a relative clause does *not* have room for discourse particles, question particles or focused phrases:

- (2) a. **mies, jonka-han Merja näki ___*
 man, who-*hAn* Merja saw

ativization; Neg = negation head; NOM = nominative Case; PAR = partitive Case; pA = pA-particle, a illocutionary force particle expressing assertion; phi = phi-features such as number and person; s = the s-particle; T = tense, Top = topic.

- b. **mies, jonka-ko Merja näki* ____
man, who-*kO* Merja saw
- c. **mies, jonka-s Merja näki* ____
man who-s Merja saw
- d. **mies, jonka-ko-han Merja näki* ____
man, who-*kO-hAn* Merja saw
- e. **mies, jonka Merja-han näki* ____
man who Merja-*hAn* saw
- f. *?*paikka, jossa; Merjan_i Pekka tapasi* _____i _____j
place where Merja.ACC.FOC Pekka met
- g. **mies, jonka-pa-s Merja näki*
man, who-*pA-s* Merja saw
- h. **mies, jonka Merja-pa-s näki*
man, who Merja-*pA-s* saw

If all the left-peripheral elements (e.g. (1)) target the same left-peripheral operator position under the same movement operation, as claimed by previous research, why are discourse particles, focused or interrogativized phrases ungrammatical when they occur inside relative clauses? In addition, previous research has established that this pattern is not cross-linguistically valid, so a question arises what makes Finnish different from, say, Italian (Rizzi 1997).

We propose an analysis of this phenomenon that takes advantage of feature inheritance (Chomsky 2008, Miyagawa 2010) and adopts some ideas from Jiménez-Fernández & Miyagawa (in press). The gist of our analysis is that while Finnish CPs and relative clauses have one operator position available for \bar{A} -movement, as indicated by the above evidence and the references cited above, many left-peripheral properties of full clauses and complement clauses are not inherent properties of that syntactic projection; instead, they belong to the higher Force projection and are *inherited* from there into the lower \bar{A} -position. That is, the Force projection licenses certain additional properties to the projection it selects. In Finnish, these inherited features get stacked into the one operator position, for which all operator-like \bar{A} -elements compete; in other languages, such as in Italian, they are realized by means of separate projections. This amounts to a “syntax-morphology complementarity,” in which overt morphological suffixes and syntactic positions complement each other in serving the same function.

This article is organized as follows. After presenting the theoretical background in section 2, we discuss the core evidence from Finnish: properties which relative clauses and other types of finite CPs share (section 3), as well as properties on which they differ, and various “full clause phenomena” which are the privilege of full CPs and which relative clauses do not manifest (section 4). After looking at such evidence, we present our analysis involving feature inheritance in section 5. Towards the end of section 5, we will then

position our findings within a larger cross-linguistic theory of the CP-cartography.

2 Background

Here we provide some background to assist in understanding our data and analysis. We will first sketch the analysis of Rizzi (1997), after which we illustrate the known properties of Finnish left edge on the basis of what previous research there is. We will then delve into the details of Finnish, and return to the cross-linguistic picture later on.

The CP-layer has been traditionally conceived as the locus of complementizers and various “relocated” operator-like elements, such as *wh*-phrases. As research on such phenomena has progressed, it has become clear that there is more than just one functional projection inside the CP-layer. A useful entry-point to the contemporary cartography of the CP is provided by Rizzi (1997). In Rizzi’s system, the left periphery of the finite clause contains a projection for Force, and an optional Focus-projection in between recursive (indicated by star *) Topic projections:

- (3) . . . Force (Topic*) (Focus) (Topic*) Fin ...

The head Force represents clause type and, according to Rizzi, tells whether the clause is a declarative, interrogative, exclamative, comparative, adverbial, or a relative clause. The Fin head encodes properties of finiteness, such as full phi-agreement (subject-verb agreement). The Topic/Focus-layers contain additional left-peripheral positions associated with topicalization and focusing, respectively. The traditional view is that the topic of a sentence expresses an entity that the sentence is “about”, while the rest of the structure makes a comment about the topic (4a)(Reinhart 1981). The theory of topic-hood has nuances that we ignore here (see Bianchi & Frascarelli 2010 for review), but return to them later on. The focus, on the other hand, introduces new information (4b). In (a), the topicalized element occupies the specifier of TopicP, and in (b), the focalized element occupies the Spec,FocusP.

- (4) a. *Your book you should give ___ to Paul.*
 b. *YOUR BOOK you should give ___ to Paul (not his book).*

In Rizzi’s system, there is one Focus projection, but the Topic-projection is recursive and can appear both before and after the Focus-position. The reason for this assumption is that in Italian, it is possible to stack several topics to the front of the verb cluster and to both sides of the focused phrase. Some or all of these projections may not be present in a sentence.

Turning now to Finnish, here the situation is actually more in line with the traditional, monostratal CP-analysis. Of the many positions posited by Rizzi, previous research indicates that there is one topic position in Finnish, the Spec,FinP, which belongs to the

finite portion of the clause (Holmberg & Nikanne 2002). It is, then, a lower topic position associated with finiteness and the Fin-head (see Haegeman 2004). Semantically, it is best associated with a familiar or “given” entity that the sentence is about. That position is in Finnish structurally dominated by the focus position (the traditional Spec,CP position) (Vilkuna 1989, Vainikka 1989, Kenesei 1992, Koskinen 1998, Huhmarniemi 2012). There is currently no evidence for a further topic *position* between Fin and Focus (cf. Rizzi’s analysis of the Italian left periphery), less so for a recursive topic system. Is there any reason to assume, following Rizzi’s analysis, a higher topic position inside the CP-layer? The evidence indicates that we must perhaps answer in the negative. Candidate sentences such as (5a–b) are either extremely awkward or ungrammatical.

- (5) a. **Pekka, Merja rakastaa* ____
 Pekka.NOM Merja loves
- b. ??*Pekka, Merja rakastaa häntä.*
 Pekka.NOM Merja loves him
 Intended: ‘As for Pekka, Merja loves him.’
- (6) a. *Pekkaa Merja rakastaa* ____
 Pekka.PAR Merja loves
 ‘It is Pekka who Merja loves.’
- b. **Pekkaa, Merja rakastaa häntä*
 Pekka.PAR Merja loves him

In (6a), which is grammatical, the fronted phrase receives contrastive focus reading. Contrastive focus reading arises here because the sole operator position is associated with the contrastive focus reading whenever the phrase appears without a morphological suffix (e.g. *-hAn, -pA, -s*). In addition, in Italian and other Romance languages, creation of such topic constructions can be assisted by adding a clitic to the source position (Cinque 1990, Rizzi 1997), a mechanism that is unavailable in Finnish and might play a part in explaining why the positions are absent.² Finally, Finnish does not seem to have a “root only” topics like English, again speaking against postulating a high topic position. In conclusion, we are aware of no analysis of the Finnish left periphery that would assume phrasal positions above the “focus” position, the sole left edge position hosting all kinds of \bar{A} -moved phrases. Finnish left periphery is poor in structural positions if compared to languages such as Italian; so poor, in fact, that we could, in theory, describe it in terms of just one CP-projection.

However, there is evidence that Rizzi’s Force is part of the Finnish left edge. The presence of a Force projection above FocusP was first proposed for Finnish by Huhmarniemi

² While Cinque (1990) argues that Romance Clitic Left Dislocation (CLLD) is not derived by wh-movement, it is debated how, exactly, they are derived. We set this problem aside, since the corresponding construction does not exist in Finnish.

the specifier of this projection hosts the topic of the clause. In addition, both full clauses and relative clauses contain one projection that functions as a landing site for left-peripheral \bar{A} -movement. In short, we show that relative clauses have the two left peripheral positions of (7): topic position (spec,FinP) and the operator \bar{A} -position (spec,FocusP).

Both relative clauses and full clauses contain syntactic markers for finiteness, such as nominative subjects and phi-agreement. Finnish is a SVO language where the syntactic subject usually occurs in the nominative and agrees with the finite element. Genitive or partitive subjects do not agree with the finite verb.

- (8) a. *Merja tapasi Pekka*
 Merja.NOM met.3SG Pekka.ACC
 ‘Merja met Pekka.’
 b. *mies, jonka Merja tapasi* ___
 man, who.ACC Merja.NOM met.3SG
 ‘a man who Merja met

At this juncture we assume, following Holmberg & Nikanne (2002), that a finite clause is headed by a Fin^0 -head (their F-head). This head is responsible for nominative Case assignment and full verbal phi-agreement. Later in this article we revisit this hypothesis, as the matter becomes relevant once we adopt the feature inheritance analysis. More important, though, is the observation that Holmberg & Nikanne (2002) argue, convincingly to us, that the Spec,FinP position is associated with the *topic* in Finnish.⁴ This position may be filled by the agreeing nominative subject, but also by other phrases, such as the accusative object, as shown in (9). Thus, sentence (9b) means that “the book has been previously introduced in the discourse while the identity of the author is new information” (Holmberg & Nikanne 2002:78).

- (9) a. *Graham Greene on kirjoittanut tämän kirjan*
 Graham.NOM Greene.NOM has written this.ACC book.ACC
 ‘Graham Greene has written this book.’
 b. *Tämän kirjan on kirjoittanut Graham Greene*
 this.ACC book.ACC has written Graham.NOM Greene.NOM
 ‘This book was written by Graham Greene.’

Notice that both Finnish examples are in the active voice; the structure corresponding to (9b) does not exist in English, but is best translated by using the personal passive. In the topic typology of Bianchi & Frascarelli (2010), the phrase in Spec,FinP corresponds to the G-Topic: something that is familiar or given in the context. This aligns perfectly with their claim that, cross-linguistically, G-topics are placed to a low position in the CP-hierarchy.

⁴ Specifically, they assume that every argument is marked for $\pm\text{Foc(us)}$, and that the Spec,FinP position checks the $-\text{Foc}$ feature. This captures the “Finnish EPP-feature,” accounting for the topic-prominence property of Finnish. There are many twists in this story that we cannot review here, however.

Do relative clauses have syntactic space for topicalization? Evidence indicates that they do. It is possible to relativize both sentences in (9a–b).

- (10) a. *mies*, [_{FocusP} *joka* [_{FinP} ____ *kirjoitti tämän kirjan*]]
 man who.NOM wrote this.ACC book.ACC
- b. *mies*, [_{FocusP} *joka* [_{FinP} *tämän kirjan kirjoitti* ____]]
 man who.NOM this.ACC book.ACC wrote
- c. *teos*, [_{FocusP} *jonka* [_{FinP} ____ *kirjoitti Graham Greene*]]
 book which wrote Graham.NOM Greene.NOM
- d. *teos*, [_{FocusP} *jonka* [_{FinP} *Graham Greene kirjoitti* ____]]
 book which.ACC Graham.NOM Greene.NOM wrote

We therefore conclude that relative CPs have the low topic position. That makes sense on independent grounds, since, if the topic is associated with FinP, we expect to see topic shifts in relative constructions which are, fundamentally, finite clauses. Evidence in (10) shows that this position is not the target of typical \bar{A} -movement of interrogative pronouns and relative pronouns. Relative pronouns (and wh-pronouns) occupy a higher position.

Rizzi (1997) shows that also in Italian, relative clauses have topics which are situated below the relative pronoun. Rizzi concludes that the relative operator occupies the highest position in the clause, Spec,ForceP. Here, however, there are differences which prompt us to reject that analysis. Because in Finnish the topic position is lower in the clause structure, namely in the Fin-layer, the fact that relative clauses have topics does not require the assumption that the relative pronoun would occupy a high position in the clause. It is also unclear whether Finnish has the higher topic-positions assumed in Rizzi's system in addition to the lower topic position. We will see, specifically, that it is not possible to stack fronted elements below the relative pronoun. However, the most important reason for not assuming that the relative pronoun is in Force in Finnish concerns the data documented later: relative clauses are more “naked” than other finite CPs, so we are led to conclude that the relative clauses do not even have Force. We return to the cross-linguistic picture once we have analyzed the Finnish facts.

The second similarity is that all finite CPs have one syntactic position available that serves as the landing site for \bar{A} -movement (cf. examples in (1)). Previous research indicates – as already discussed above – that interrogative pronouns (11a), relative pronouns (11b), focused elements (11c) and elements with discourse particles (11d) all land in the same position (Vilkuna 1989 1995).

- (11) a. [_{FocusP} *Kenet* [_{FinP} *Pekka näki* ____]]?
 who.ACC Pekka saw
 ‘Who did Pekka see?’

- b. $[_{FocusP} \textit{jonka}] \quad [_{FinP} \textit{Pekka näki} ___]]$
 who.ACC Pekka saw
 ‘who Pekka saw’
- c. $[_{FocusP} \textit{Merjan}] \quad [_{FinP} \textit{Pekka näki} ___]]$
 Merja.ACC Pekka saw
 ‘It was Merja who Pekka saw.’
- d. $[_{FocusP} \textit{Merjan-han}] \quad [_{FinP} \textit{Pekka näki} ___]]$
 Merja.ACC-*hAn* Pekka saw
 ‘It was Merja who Pekka saw.’

In embedded CPs this position is located below the complementizer *että* ‘that’:

- (12) a. *Raine ihmetteli, että* $[_{FocusP} \textit{kenet}] \quad [_{FinP} \textit{Pekka näki} ___]]?$
 Raine wondered that who.ACC Pekka saw
 ‘Raine wondered who Pekka saw?’
- b. *Raine väitti, että* $[_{FocusP} \textit{Merjan}] \quad [_{FinP} \textit{Pekka näki} ___]]$
 Raine claimed that Merja.ACC Pekka saw
 ‘Raine claimed that it was Merja who Pekka saw.’
- c. *Raine väitti, että* $[_{FocusP} \textit{Merjan-han}] \quad [_{FinP} \textit{Pekka näki} ___]]$
 Raine claimed that Merja.ACC-*hAn* Pekka saw
 ‘Raine claimed that it was Merja who Pekka saw.’

Examples (13a–c) illustrate that it is impossible for two \bar{A} -moved elements to target the position above the subject position. In other words, all finite clause types have only one \bar{A} -position at their left periphery above the FinP.

- (13) a. **Mitä Merjalle-han* $[_{FinP} \textit{Pekka antoi} ___ ___]]?$
 what.ACC Merja.to-*hAn* Pekka gave
- b. **Lahjan Merjalle-pa* $[_{FinP} \textit{Pekka antoi} ___ ___]]$
 present.ACC Merja.to-*pA* Pekka gave
- c. **Lahjan-pa Merjalle-han* $[_{FinP} \textit{Pekka antoi} ___ ___]]$
 present.ACC-*pA* Merja.to-*hAn* Pekka gave

Comparison with Rizzi’s (1997) system suggests that this position is similar to Rizzi’s Focus projection, which is likewise associated with focus and occurs above Fin but below Force. We will, in fact, end up following Rizzi’s analysis here, but maintain that the landing site of \bar{A} -movement (at Spec,FocusP in examples above) is not necessarily associated with focus interpretation. In Finnish, there being just one position, different types of phrases utilize the same region. As a consequence, the association with Focus is lost. For example, the discourse particles in (11c–f) do not necessarily encode focus, and the relative pronoun in (11b), we show, *cannot* represent focus. We will therefore refer to the position as σP from now on, which is intended to steer interpretation away from notions such as focus.

In addition, complementizers in Finnish occur higher than σ , further suggesting that σ is situated between Force and Fin; this will be discussed in the following sections. We will end up claiming that focus is a *feature* that can be realized at σ in Finnish.

4 Discrepancies between relative clauses and full CPs

4.1 Clause type and sentential force

The second step in our argumentation constitutes a demonstration that full CPs have certain properties related to their left periphery that relative CPs do not have. In the following sections, we will investigate syntactic and semantic properties of full CPs that involve \bar{A} -movement to the left periphery and compare them to relative clauses. We will point out several differences between the two clause types and eventually propose that the differences can be reduced to the lack of Force-projection in relative clauses.

One point of divergence concerns the fact that relative clauses cannot be used inside propositional attitude contexts. They are not used to assert, question or order, for example. A direct way to observe the limitations of clause type is to use a yes/no interrogative. In Finnish, a yes/no interrogative is formed with a yes/no clitic particle *-kO*, associated with interrogative clause type. The suffix can be attached to almost any word, e.g. verbs, nouns, adjectives, the negation and pronouns. We can therefore attempt to form a “yes/no relative clause” by suffixing the yes/no particle to the relative pronoun, but this procedure produces gibberish:

- (14) **mies, jota-ko Merja rakasti* ____
 man who-*kO* Merja loved

The problem here is the interrogative clause type, or the interrogative force, that is carried by the *-kO*-suffix: it does not fit inside the relative clause. According to a long semantic tradition, relative clauses are *predicates* (Quine 1960). Restrictive relative clauses are therefore used in making a reference, not in making a claim, asking a question or issuing a command. If this is true, then we can say, tentatively, that the relative clause might lack the grammatical head licensing these structures inside propositional attitude contexts.

4.2 Discourse particles

We have seen so far (examples (11)) that the Spec, σ P hosts several types of elements that bear special morphology in Finnish, such as wh-words or the discourse particles *-hAn*, *-pA* and *-s*. All these elements have a specific connection to the discourse properties of (or the background assumptions underlying) the sentence. Finnish left-peripheral discourse particles therefore provide a particularly informative test case for the presence of discourse-related functional material within finite clauses. We already know that the discourse particles

can occur inside full clauses (15a–b), but not at all inside relative clauses (15c–f).

- (15) a. *Pekan-han Merja tapasi* ____
 Pekka-*hAn* Merja met
 ‘It was Pekka that Merja met.’
- b. *Pekan-pa Merja tapasi* ____!
 Pekka-*pA* Merja met
 ‘It was Pekka who Merja met!’
- c. **mies, jonka-han Merja näki* ____
 man, who-*hAn* Merja saw
- d. **mies, jonka-pa Merja näki* ____
 man, who-*pA* Merja saw
- e. **mies, jonka Merja-han näki* ____
 man who Merja-*hAn* saw
- f. **mies, jonka Merja-pa-s näki* ____
 man who Merja-*pA*-s saw

Finnish discourse particles *-hAn*, *-pA* and the yes/no question particle *-kO* can attach to several types of phonological words: finite and non-finite verbs, nouns, adverbs, adjectives, sentential negation and prepositions. Once they are suffixed, however, the host word, or a constituent containing the host, must be relocated to the left edge. In addition, only one host can bear these suffixes per each sentence (CP), although several suffixes are possible for that one host (Hakulinen 1976, Vainikka 1989, Nevis 1986, Holmberg 2000). The behavior of these suffixes thus resemble that of wh-pronouns which, after the word is endowed with a wh-feature, exhibits upward mobility and must be ‘checked’ at the left edge. We return to the semantics of these particles later on. However, these data show that whatever is responsible for checking the discourse features, that entity must be missing in relative clauses.

The correct descriptive generalization here is that all \bar{A} -moved elements compete for the same position, and because the position is reserved by the relative pronoun, other elements are denied entry. But the fact that the discourse particles, or focus features, do not combine with the relative pronoun cannot be explained by using the same logic. Thus, relative clauses genuinely lack something that full CPs have. These results, by itself, are surprising and not obvious on any a priori grounds. There is no trivial semantic or syntactic explanation for the fact that the discourse particles could not be part of the syntactic and/or semantic representation of relative clauses, given that topics can still fit in.

4.3 Contrastive focus

In addition to the discourse properties encoded by wh-words and discourse particles, the left periphery of a full CP may encode contrastive focus. If a bare element (whether a head

or a phrase) moves to σ , then contrastive focus interpretation is triggered (16).

- (16) *Pekkaa Merja rakasti (ei Jukkaa).*
 Pekka.PAR Merja.NOM loved (not Jukka.PAR)
 ‘It was Pekka who Merja loved, not Jukka.’

However, the contrastive interpretation does not arise if the position is occupied by a relative pronoun; making the set of alternatives explicit in a relative clause produces gibberish (17a). Furthermore, example (b) shows that there is no room for \bar{A} -moved phrase between the relative pronoun and the nominative subject.

- (17) a. **mies, jota Merja rakasti ___ (eikä Jukkaa)*
 man who.PAR Merja.NOM loved (not Jukka)
 b. **mies, jolle kirjan Merja antoi ___ ___ (eikä lehteä)*
 man who.to book.ACC.FOC Merja.NOM gave (not magazine)
 Intended: ‘the man, who Merja gave A BOOK to, not a magazine’

Whatever is responsible for the contrastive focus interpretation at the left periphery of the full clause is not part of the representation of relative clauses. More importantly, contrastive focus cannot be an inherent property of the one left peripheral position hosting various \bar{A} -moved elements. This is ultimately why we label it as σ instead of Focus.

Here it is important to realize that a focused phrase *can* occur inside the relative clause if it stays *in situ* and is created by prosodic emphasis (18).⁵

- (18) *Minä vierailin saarella, jossa PEKKA asui, ei Merja.*
 I visited island, where PEKKA lived, not Merja
 ‘I visited the island where PEKKA lived, not Merja.’

This shows, once again, that the left periphery of relative clauses is missing something in its syntax that full CPs have. There is no obstacles in creating the focus interpretation per se inside a relative clause. Later it will become important to make a distinction between the two contrastive focus strategies, movement and the *in situ* strategy.

4.4 Complementizers

In this section, we examine the role of complementizers in full embedded clauses and show that whereas embedded interrogatives enable the presence of a complementizer in Finnish,

⁵ Semantically, the focused relative construction can be interpreted either as causing a reference shift, in which the reference of the whole DP is changed in comparison to some previous reference (‘an island where Merja lived’ → ‘an island where Pekka lived’), or as an attribution shift, in which the reference remains but it is attributed another property (‘Pekka lives there, not Merja’). This distinction might derive from the restrictive-appositive ambiguity, so that focusing a restrictive relative clause induces a reference shift while focusing an appositive relative clause induces an attribution shift.

relative clauses do not. Finnish complementizer *että* ‘that’ coexists with wh-pronouns (19a) and with left-peripheral clitic particles (19b):

- (19) a. *Pekka pohti, että ketä Merja rakastaa* ____
 Pekka wondered that who Merja loves
 ‘Pekka wondered who Merja loves.’
 b. *Pekka ymmärsi, että Merja-han ____ rakastaa Timo.*
 Pekka realized that Merja-h_{AN} loves Timo
 ‘Pekka realized that Merja loves Timo.’

Thus, Finnish full embedded clauses are like root clauses in this respect: both have the single operator position for \bar{A} -elements. Note, further, that the complementizer differs from its English cousin, which cannot occur together with the wh-pronoun. The situation is different in Finnish relative clauses; example (20a) shows that Finnish complementizer *että* ‘that’ cannot coexist with a relative pronoun. In addition, *että* cannot function as a relative pronoun in Finnish (b).

- (20) a. **mies, että jota Merja rakastaa* ____
 man that who Merja loves
 b. **se mies, että Merja rakastaa* ____
 the man that Merja loves

Again, we note a contrast with the English complementizer, which can be used in a relative clause:

- (21) *a man that Pekka knew*

But why, then, does the Finnish complementizer co-occur with wh-pronouns in interrogative clauses but not with relative pronouns in a relative clause (22a–c)?

- (22) a. *Pekka pohti, että kuka nukkuu*
 Pekka wondered that who sleeps
 ‘Pekka wondered who sleeps.’
 b. *Pekan poika, (*että) joka nukkuu*
 Pekka’s son (that) who sleeps
 ‘Pekka’s son who sleeps.’
 c. **Pekan poika, että (joka) nukkuu*
 Pekka’s son that (who) sleeps

According to our working hypothesis, adopted from (Huhmarniemi 2012), Finnish left edge is consists of three layers ‘Force - σ - Fin’. A rather obvious explanation is that the Finnish complementizer *että* ‘that’ occurs (and is optionally spelled out) at the Force-head, while interrogatives occupy Spec, σ P. This provides a straightforward analysis for how and why the complementizer co-occurs with interrogatives. Why relative clauses lack the complementizer will be considered later; here it suffices to notice that they do.

4.5 Head movement to the left periphery

So far, we have only considered phrasal movement to the left periphery of a finite clause. In this section we discuss head movement triggered by discourse particles and contrastive focus. We show that whereas head movement is present in full clauses, it is absent in relative clauses. First, the same discourse particles that attach to phrases induce head movement in Finnish. When the main verb, sentential negation (which functions like a verb in Finnish), or an auxiliary is suffixed with a discourse particle, it moves:

- (23) a. *On-ko Pekka ___ lähtenyt matkalle?*
 has-*ko* Pekka left trip.to
 ‘Has Pekka left for a trip?’
- b. *Ei-hän Pekka ___ lähtenyt matkalle!*
 not-*hAn* Pekka left trip.to
 ‘Pekka didn’t leave for a trip!’
- c. *Lähti-pä Pekka ___ matkalle!*
 left-*pA* Pekka trip.to
 ‘Pekka did leave for a trip.’
- d. *Lähti-pä-s Pekka!*
 left-*pA-s* Pekka
 ‘Pekka did leave!’

If there is head movement to σ without any apparent or overt discourse trigger, the operation leads to the contrastive focus reading (Vainikka 1989):

- (24) a. *On Pekka ___ lähtenyt matkalle!*
 has Pekka left trip.to
 ‘Pekka really has left for a trip.’
- b. *Lähti Pekka ___ matkalle!*
 left Pekka trip.to
 ‘Pekka DID leave for a trip.’

Importantly, head movement and phrasal movement to the left periphery are mutually exclusive throughout the Finnish grammar (see also Koskinen 1998, Huhmarniemi 2012:90):

- (25) a. **On matkalle-han Pekka ___ lähtenyt ___!*
 is trip.to-*hAn* Pekka left
- b. **Mihin on-ko Pekka ___ lähtenyt ___?*
 where is-*ko* Pekka left
- c. **Matkalle on-han Pekka ___ lähtenyt ___!*
 trip.to has-*hAn* Pekka left

Similarly, since Finnish relative clauses are introduced by phrasal movement of the relative pronoun, the relative clause does not permit head movement to left periphery:

- (26) a. *Pekka lähti matkalle, jota hän oli suunnitellut kauan.*
 Pekka left trip.for which s/he had planned for.long
 ‘Pekka left for a journey which he had planned for a long time.’
 b. **Pekka lähti matkalle, jota oli hän ___ suunnitellut kauan.*
 Pekka left trip.for which had s/he planned for.long

There thus seems to be only one feature/position that requires or implements feature checking. If the checking configuration is established via head-movement, further phrasal movement is impossible; if the checking configuration is established via phrasal movement, head movement is blocked. So far we have assumed that the landing site of phrasal \bar{A} -movement is Spec, σ P. The evidence above suggest that the target of cliticization-induced head movement in (23)–(25) is therefore head σ . In other words, the relevant feature(s) is/are checked at the σ -projection, but they might be checked either by head movement or by phrasal movement.

4.6 Interim summary

Before leaving the data, we state the documented properties of relative and full CPs in a concise fashion. In addition, here we deal with certain objections that can be presented against our way of sorting out the facts.

Property	full CP	REL-CP
Finiteness (NOM/EPP/ ϕ)	✓	✓
Topic position	✓	✓
One \bar{A} -position (phrase or head)	✓	✓
Clause type (declarative, interrogative, imperative)	✓	–
Wh-pronoun	✓	–
Yes/no question particle <i>-kO</i>	✓	–
Discourse particles <i>-hAn, -pA, -s</i>	✓	–
Left-peripheral contrastive focus	✓	–
Complementizer <i>että</i> ‘that’	✓	–

Table 1: Comparison between relative and full CPs

All the observations have been gathered into Table 1. Examining closely the data in Table 1 suggests that the full CP is made of the relative clause CP plus something else.

They both have certain core features, while the full CPs contain many more in addition. This will be the analysis we present in the next section.

However, before we discuss our analysis, we must deal with an objection that arises from the way we have sorted out the data in Table 1.⁶ There are two main approaches to the analysis of relative clauses: the raising analysis (Bianchi 1999, Manninen 2003, Vergnaud 1974, Kayne 1994) and the matching analysis (Chomsky 1965, Chomsky & Lasnik 1977, Jackendoff 1977). The latter builds on the similarity between relative clauses and wh-movement. Accordingly, like a wh-pronoun, the relative pronoun moves to the edge of the relative clause, and then the resulting clause is merged with its (usually nominal) head, either into a complement position or into an adjunct position. In the raising analysis, in contrast, the relative head is base-generated inside the relative clause and it rises from there to a position outside the relative clause. In example (27), both the head *mies* ‘man’ and the relative pronoun are first merged to the object position inside the relative clause (___) and are subsequently raised. The resulting clause is then merged with D = *se* ‘it’.

- (27) *se* [[*mies jonka*] *Merja tapasi* ___]
 the/that man who Merja met
 ‘the man who Merja met’

Manninen (2003) presents such a raising analysis for Finnish relative clauses. The relevant point in the present context is that even though it is not possible to combine the relative pronoun with any of the discourse suffixes, as shown in Table 1, it *is* possible to use these suffixes with the head (28).

- (28) a. *se* [[*mies-kö jonka*] *Merja tapasi* ___]
 the/that man-*kO* who Merja met
 ‘was it the man who Merja met who..?’
 b. *se* [[*mies-hän jonka*] *Merja tapasi* ___]
 the/that man-*bAn* who Merja met
 ‘it was the man who Merja met who..?’
 c. *se* [[*mies-pä jonka*] *Merja tapasi* ___]
 the/that man-*pA* who Merja met
 ‘it was the man who Merja met who..?’

If the head now originates inside the relative clause, as claimed by the raising analysis, then we must conclude that the relative clause can host such features, contrary what we have said so far. We present two points against this objection.

First, even if we would accept the raising analysis, the discourse features in (28) are not associated with, and do not represent, properties of the relative clause. Thus, example (28) makes a yes/no question about some man, who Merja met; it does not ask whether

⁶ This concern was raised by an anonymous FULL reviewer.

Merja met a man. In other words, the question presupposes that the man under discussing has been met by Merja, and then asks something about that man. We can show the same point syntactically. In Finnish, discourse features force their host to move to the left edge of a clause, where the features are checked (Huhmarniemi 2012). The complex noun phrases in (28) must likewise move to the left peripheral position of the *matrix* clause (29).

- (29) a. **Jukka vihasi [sitä miestäkö, jonka Merja tapasi ____]*
 Jukka hated the/that man-*kO* who Merja met
- b. *[Sitä miestäkö, jonka Merja tapasi ____] Jukka vihasi ____?*
 the/that man-*kO* who Merja met Jukka hated
 ‘Was it that man who Merja met, that Jukka hated?’

Example (29) shows that the discourse features suffixed to the head must be checked by the matrix CP. They are not checked at the relative clause left edge. Thus, even if the raising analyses were true, the left edge of the relative clause is not checking these features and represents them neither syntactically nor semantically.

On the other hand, we believe that the raising analysis is not true. The argument was presented in full in Huhmarniemi & Brattico (2013b), so we repeat the main point only. The raising analysis makes the following prediction. It predicts that the head is initially merged inside the relative clause and it then \bar{A} -moves to its left periphery. Now, in Finnish many properties of the \bar{A} -moved DPs are determined, at least in part, by their initial position and not (only) by their landing position at the left edge. Such properties include structural Case, long distance Case assignment, case concord, binding, polarity and quantifier scope. Huhmarniemi & Brattico (2013b) report that all these properties behave as if the head were never inside the relative clause. Rather, the evidence suggest that the head is always part of the matrix clause. In addition, they show that the raising analysis would violate several well-known island constraints and Case assignment principles of Finnish. Hence, we believe that the raising analysis should be rejected. But notice that even if it were accepted, our general points would hold.

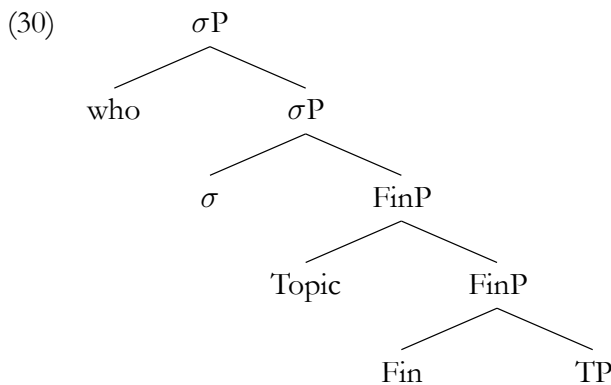
5 The feature inheritance analysis

5.1 Introduction

Comparison of full CPs and relative CPs reveals that full CPs are able to host more grammatical features than relative clauses. We will therefore propose an analysis in which full CPs are built from relative CPs by adding something extra. Specifically, we claim that relative clauses lack Force.

5.2 Relative clauses are σ Ps

Relative clauses behave like full clauses with respect to the fact that they are headed by an operator \bar{A} -position. Specifically, in relative clauses it is the relative pronoun that fills this position. We will therefore assume that relative clauses involve the grammatical skeleton exhibited by (30), and that there is no higher structure beyond σ . The assumption that there is no syntactic structure above σ is based on the fact that *no* element can occur above the relative pronoun in a relative clause. Full CPs have additional structure since, for instance, complementizers can occur above whatever fills in the Spec, σ P.



We follow much of Adger & Ramchand (2005) (A&R for short) in how we work out Finnish relativization. Operator σ corresponds to lambda abstraction and hosts something akin to the lambda-operator (Heim & Kratzer 1998). Specifically, A&R assume that a complementizer can host a lambda-abstraction feature Λ , which we assume to reside in σ . On these grounds, we will treat the σ P as an *operator phrase*. The operator requires the presence of a variable. According to A&R, the operator-variable link is created by Agree (probe-goal in Chomsky 2008). Thus, $\sigma(\Lambda)$ establishes a *probe-goal* relation with the variable it c-commands. The variable is designated by feature ID/ Λ (ID standing for reference identification). Symbol ID/ Λ means that its reference is IDentified by, or depending on, the operator Λ and is not established independently. The semantic-grammatical constitution of the operator is such that it requires the presence of a matching variable. That is, the relative clause operator Λ cannot occur alone without a matching variable, and vice versa, so they are coupled together by means of probe-goal relation.

Normally, the one and the same element cannot satisfy several probes' desires to locate a matching goal. For example, one wh-pronoun cannot mark several interrogatives. In addition, the probe requires quite specific element as its goal. It is not the case that just any DP can head an interrogative clause. These facts can be captured in terms of grammatical features. If the operator is defined by Λ , and the variable is defined by possessing ID/ Λ , A&R assume that both the operator and the variable are also endowed with uninterpretable shadow features of their counterparts. Thus, the operator bears [uID] (un-

interpretable ID) while the variable bears (u Λ)(uninterpretable Λ).⁷ Following Chomsky (2008), we say that the uninterpretable feature [uID] at $\sigma(\Lambda)$ constitutes the *probe*, or the probe-feature, while the uninterpretable [u Λ] at the relative pronoun renders the pronoun *active*. They match under probe-goal (Agree). Matching is based on feature-identity, which now applies due to the uninterpretable shadow features. The probe-goal relation then *deletes* the uninterpretable counterparties, leaving only the interpretable ones. This has the desired consequence: the probe does its thing only once, and the goal participates in a probe-goal relation only once, ceasing to be active once the probe-goal relation is established (31).

- (31) a. σ *Mary loves who*
 [uID, Λ] [ID,u Λ]
 b. σ *Mary loves who*
 [\bar{u} ID, Λ] [ID, \bar{u} A]

We follow A&R and assume that the meaning of ‘ Λ ...ID’ is (32).

- (32) λx . Mary loves x

Next we tackle the issue of movement. A&R assume that some languages adopt the base-generation strategy illustrated above, while in other languages the operator-variable construction is generated by movement. Specifically, they claim that in wh-movement languages, such as English, the wh-pronoun carries the operator feature, and movement of the wh-pronoun creates the operator-variable link. In Finnish, too, the goal is moved to the Spec, σ P.

- (33) *ketä* σ *Merja rakastaa* ____
 who Merja loves
 ‘Who does Merja love?’

A&R thus propose that movement creates operator-variable constructions. In this paper, we depart from this view and propose, instead, that movement is a consequence of probe-goal/Agree mechanism, where Agree establishes the operator-variable link. In addition, we assume that overt phrasal movement is caused by a formal EPP-feature at the probe (34).

- (34) *who* σ *Mary loves* ____
 [ID] [A,EPP]

The reason why we do not assume that movement by itself can create operator-variable constructions is that it does not make semantic sense when we look at additional facts concerning Finnish pied-piping. Since these facts are relevant to our analysis of EPP,

⁷ A&R assume that the variable contains an *unvalued* ID-feature, which is valued by [Λ]. For simplicity, we assume here that the variable has an uninterpretable counterparty of the operator, [u Λ].

they bear some emphasis here. As first documented by Huhmarniemi (2012), before the relative pronoun can appear at the left edge of a relative clause, it must often perform several iterative successive-cyclic \bar{A} movement/pied-piping iterations (35)(see also Huhmarniemi & Brattico (2013ab)).

- (35) *Tuolla on se saari [[AdvP [PP jota kohti ___] soutamalla ___] pääsemme
 there is the/that island which towards by.rowing we.get
 kotiin ___]
 home
 ‘There is the island by rowing towards which we can get home.’*

If we assume that the relative pronoun (or a phrase containing the relative pronoun) that occurs at the left edge of a phrase constitutes an operator binding its trace, we get lambda-abstraction at every step. The meaning of (35) is, however, ‘an island x such as we got home by sailing towards x ’, where it is relative pronoun’s first-Merge position which expresses where the variable is, and something at the left edge of the whole clause represents the operator. This conclusion would be avoidable if it could be shown that intermediate movement in (35) is not \bar{A} -movement, or if it could be shown that it differs in some sense from the final movement step, but the facts are the exact opposite (Huhmarniemi & Brattico 2013a). Thus, Huhmarniemi & Brattico (2013b), following Chomsky (2008), propose that movement is due to a formal *edge feature* (EPP in the older parlance), here located at several phrase heads (36).

- (36) *saari [[AdvP [PP jota kohti ___] soutamalla ___] σ pääsemme
 island which towards.EPP by.rowing.EPP EPP we.get
 kotiin ___]
 home
 ‘The island by rowing towards which we can get home.’*

Suppose that the successive-cyclic movement exhibited by (35) is literally cyclic: once the relevant domain is derived, movement to the edge occurs. Then such movement *cannot* be caused by the operator at σ , since it is not (yet) part of the structure. Once the operator is merged, it (=probe) locates the relative pronoun (=goal), deletes the uninterpretable feature(s), and moves the phrase containing the goal due to the Spec-filling requirement EPP. Thus, in example (35), the σ -probe locates the goal deeply embedded inside the adverbial, where the relative pronoun is already located at the edge of the adposition phrase.

- (37) *[σ Pääsemme kotiin [AdvP [PP jota kohti ___] soutamalla ___]]
 [Λ ,uID] we.get home which [$u\Lambda$,ID] towards by.rowing
 Agree([Λ ,uID],[$u\Lambda$,ID])*

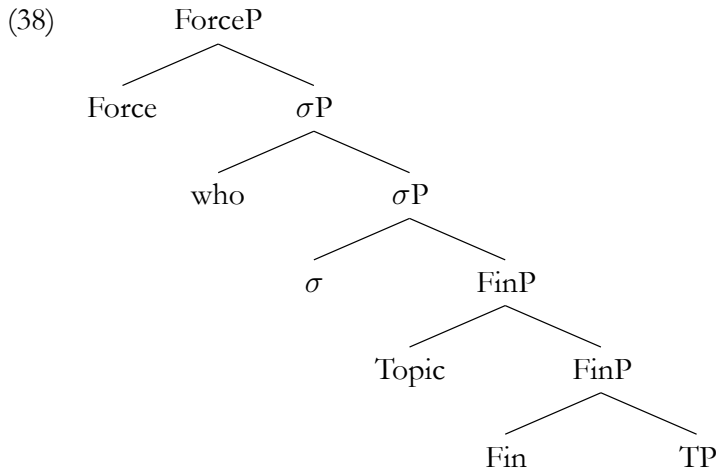
Movement to Spec, σ P is then triggered due to EPP at σ , which results in (35). The reason why the relative pronoun ceases to move after it lands into Spec, σ P is due to the

probe-goal/Agree mechanism discussed earlier: after uninterpretable features have been matched and deleted, the phrase cannot satisfy the EPP property of another head. It becomes invisible for the EPP. Similarly, there is only one EPP-feature per functional head in Finnish, which prevents one functional head to move elements over and over again.

One possible improvement to the present analysis would be to assume that there is no separate σ -head; instead, that head is simply Λ . The problem with this simplification is that there are constructions where Spec, σ P does not create an operator-variable link. For instance, if σ is targeted by head movement, there is no motivation to postulate an underlying operator-variable structure. Furthermore, base-generated sentential adverbs in Finnish can fill in the σ -position (Holmberg, personal communication), pointing towards the same conclusion: σ is not necessarily an Operator position, but it may host an Operator, thus the operator feature Λ . We think that a generalization can still be maintained which says that whenever Spec, σ P is targeted by phrasal movement, an operator-variable construction is implied. That is, phrasal \bar{A} -movement + $\sigma(\Lambda)$ = operator phrase. Phrasal movement can thus be analyzed here as a consequence of an operator-variable construction (first probe-goal/Agree, combining the operator with a variable, then EPP).

5.3 Full CPs are ForcePs

Full clauses can take several forms in Finnish: declaratives, interrogatives and imperatives. In addition, they have room for the complementizer *että* ‘that’. We now assume that both types of elements originate at the Force-head. Force is merged above σ P.

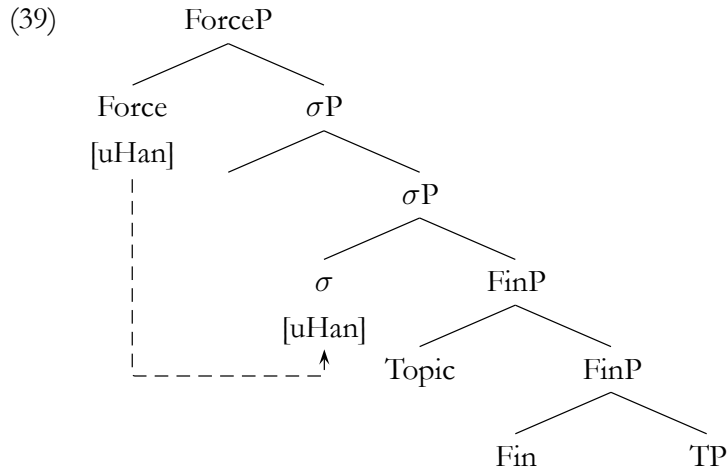


We assume that clause type is a constitutive feature of Force: there is no such head unless the clause is typed in some manner. But if the interrogative force originates in Force, why do all wh-pronouns move to Spec, σ P? Why are they not checked at Spec,ForceP? Moreover, full CPs have room for several discourse features, as well as for the yes/no question particle *-kO*, which are likewise checked inside σ P. But if they are part of σ , why

are they not available in relative clauses? The evidence suggests that all these features are part of Force, but grammatically ‘active’ at σ P one step lower. We propose, therefore, that these features are *inherited* from Force and end up at σ .

Note that, regardless of whether the structure is a relative clause or a full CP, operators and other elements are \bar{A} -moved to the same position Spec, σ P. The range of elements that can be moved to this position in a relative clause is different from those that can be moved in full CPs. In particular, we have seen that many features that have to do with Force are absent in relative clauses, but they are present in full CPs (e.g., the interrogative particle *-kO*). This pattern is exactly what the feature inheritance model predicts: a head A becomes “richer” in content when selected by another head B.

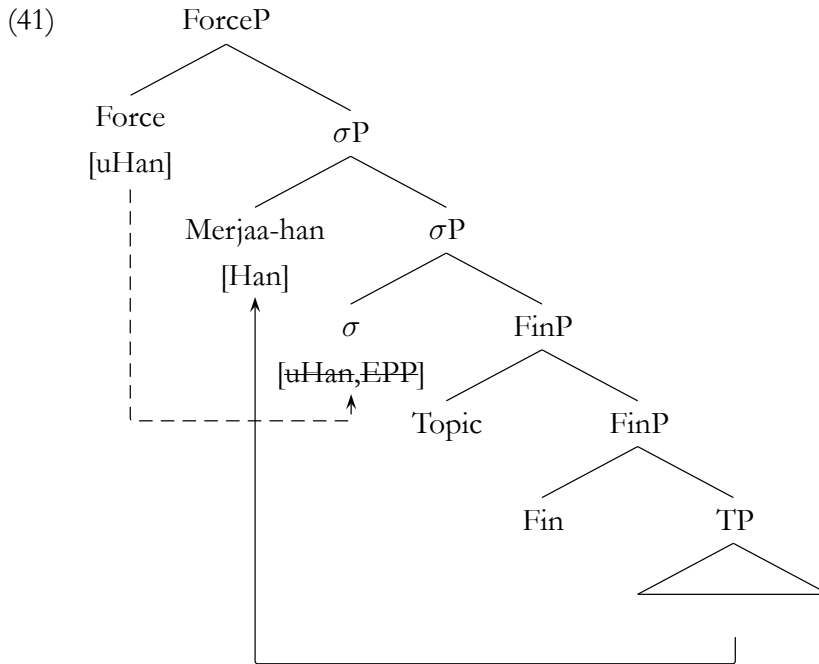
To show how these assumptions work, suppose that the Force-head contains the discourse feature [Han], corresponding to the Finnish *-hAn*-suffix. This feature is inherited by σ , as shown in (39). The same story applies to *wh*-features.



Once the relevant features are inherited by σ , they enter into the probe-goal/EPP mechanisms explained earlier. Thus, the probe [uHan] will search for a phrase or a word containing the particle [Han], resulting in Agree, match and deletion. Then, the element hosting the particle moves due to the EPP mechanism. The sentence (40) thus contains two [Han]-features: one at Force and another suffixed to the proper name.

- (40) *Merjaa-han Pekka rakastaa ___!*
 Merja.PAR-*hAn* Pekka.NOM loves
 ‘It is Merja who Pekka loves!’

The derivation of (40) is provided in (41). Feature checking takes place by probe-goal/Agree, while movement due to the EPP brings the probe and the goal together. Successive cyclic movement works as we detailed in the previous section, thus, if the constituent bearing the *-hAn* suffix/feature is embedded inside certain kinds of phrases, it will move “by itself” before the matrix operator is part of the construction (Huhmarniemi 2012). We ignore these operations for now.



This analysis predicts that it should be possible to combine an overt complementizer with the force features. This prediction is borne out (42).

- (42)
- a. *Pekka pohti, että mitä Merja osti* ____
 Pekka wondered that what.ACC Merja bought
 ‘Pekka wondered that what Merja bought.’
 - b. *Pekka ajatteli, että auton-han Merja osti* ____
 Pekka thought that car.ACC-*hAn* Merja bought
 ‘Pekka thought that it is a car that Merja bought.’
 - c. *Pekka ajatteli että Merja-pa nukkuu.*
 Pekka thought that Merja-*pA* sleeps
 ‘Pekka thought that it is Merja who sleeps.’
 - d. *Jukka ajatteli, että Pekkaa Merja rakastaa* ____
 Jukka thought that Pekka.PAR.FOC Merja loves
 ‘Jukka thought that it was Pekka who Merja loves.’

Let us examine other possible analyses of the same data and spell out our reasons for not adopting them. The first possible alternative is to start from the assumption that in full CPs, phrasal movement targets the Spec,ForceP position. This would allow us to leave the features at Force. The reason this will not work is because complementizers occupy the Force-head (the highest possible position in a Finnish CP), yet they still co-occur with *wh*-interrogatives and other full clause left-peripherals. In addition, the complementizer is the highest element in any type of clause, and never follows \bar{A} -moved elements. Thus,

there is an absolute cap which limits the structure so that the complementizer/Force must occur above everything else.

Another analysis might be that there is another position between Force and σ , and that this position serves as the landing site for full clause \bar{A} -movement, while relative pronouns land at Spec, σ P. This hypothesis would allow us to avoid feature inheritance by putting the full CP features at the extra projection between Force and σ . The problem is that this hypothesis predicts that full clauses have two \bar{A} -positions available in contrast with relative clauses, but there is no evidence to sustain such claim. Both full CPs and relative CPs have exactly one syntactic target position for \bar{A} -movement—the Spec, σ P position posited in the present analysis.

A third possible hypothesis is that the features we have located at Force are in reality features of σ , and that there is no separate Force-head.⁸ But the syntax of Finnish complementizer *että* ‘that’ suggests that there is a head above σ that hosts the complementizer. First, the complementizer occurs above the σ P in embedded clauses. In addition, complementizers display properties of heads in how they interact with head movement. Finnish negation *e-* is able to undergo head movement and adjoin to the complementizer, as in (43).⁹

- (43) *Pekka näki ett-ei Merja ___ rakasta Timoa*
 Pekka saw that-not Merja love Timo
 ‘Pekka saw/believed that Merja didn’t love Timo.’

However, the cliticization of the negation is blocked if there is a wh-interrogative, hence an additional head σ , between the host of the complementizer and Neg (44a–b) (cf. Kenesei 1994:p. 8).

- (44) a. *Pekka pohdi, että miksi Merja ei rakasta Timoa*
 Pekka wondered that why Merja not love Timo
 ‘Pekka wondered why Merja did not love Timo.’
 b. **Pekka pohdi, ett-ei miksi Merja ___ rakasta Timoa*
 Pekka wondered that-not why Merja love Timo

In example (45), the negation adjoins instead to the more local wh-interrogative:

- (45) *Pekka pohdi, että miks-ei Merja ___ rakasta Timoa*
 Pekka wonder that why-not Merja love Timo

This evidence suggests that the movement of the negation cannot cross an intervening head (Travis 1984, Rizzi 1990). In addition, the complementizer is the highest head

⁸ Yet a further alternative is to assume that *että*, ‘that’, is generated as the second specifier of σ , where it functions like an expletive. This was the position of Brattico & Huhmarniemi (2006). The hypothesis is problematic because the complementizer *että* behaves like a head.

⁹ Note that this type of movement is not associated with contrastive focus on the negation. For example, negation can adjoin to the complementizer in contexts that do not permit contrastive focusing (Hakulinen et al. 2004:§143).

that participates in selection and must, therefore, contain some features representing clause type. We return to this issue in the next section.

A fourth possible analysis is to follow Rizzi (1997) and assume that the relative operator is at Force. Rizzi's analysis says that the relative pronoun moves to Spec,ForceP. To explain why complementizers and discourse features do not occur in relative clauses, we could rely on feature incompatibility and say that the relative operator Λ is not compatible with the complementizer, clause type features and the discourse features. The difficulty with this line of thinking is that relative clauses in Finnish do not have room for \bar{A} -moved phrases between the relative pronoun and the Fin-head, as would be predicted were relative pronouns at Spec,ForceP. We repeat the evidence in (46).

- (46) a. **ravintola, jossa leivän Pekka söi* ____
 restaurant where bread.ACC Pekka ate
 'A restaurant, where Pekka ate the bread.'
- b. **ravintola, jossa leivän-hän Pekka söi* ____
 restaurant where bread.ACC-*hAn* Pekka ate

In other words, the relative pronoun competes for the same position as other \bar{A} -moved elements in Finnish, suggesting that the relative pronoun is not in Spec,ForceP. There are also semantic considerations, reviewed in the next section, suggesting that the locus of the relative pronoun and the relative operator Λ is not Force.

In sum, the hypothesis that the "missing features" of relative clauses are inherited from Force in full CPs thus fits all the data we have, and it is difficult to construct an alternative at present. Relative clauses are finite clauses, but they have much less grammatical structure than full clauses. The hypothesis finds further support from semantic considerations, discussed in the next section.

Before we move on, one additional empirical detail merits consideration. Recall that in Finnish, there are two ways to represent contrastive focus: by moving a phrase or a head to the operator position Spec, σ P, or by prosodic emphasis *in situ*. Since the former option consumes the operator position, which is not, however, necessarily associated with focus (e.g., relative pronouns, non-contrastive discourse features), it is only natural to assume that there is a focus feature which descends from Force to σ . In Finnish, this focus feature has no phonological exponent. We will later see evidence that it can accumulate into the same host constituent with other, overt features. But if the overt focus feature descends from Force to the operator position, how is the *in situ* strategy implemented?

There is evidence that the *in situ* strategy is related to the same left peripheral Force feature. First, normally it is possible to focus only one constituent per clause. Thus, if somebody says "Raine bought a car," it would be odd to reply "No, PEKKA bought a BIKE." We can show that in Finnish, the two focus strategies compete in this way, so that both cannot occur inside the same clause (47). Thus, if somebody says that Raine met Merja in the bar, it is not felicitous to reply:

- (47) #*Pekan Merja tapasi* ___ *KIRJASTOSSA*
 Pekka.ACC.FOC Merja.NOM met in.library
 ‘It was PEKKA who Merja met in LIBRARY’

Another observation is that the *in situ* focus has a scope much like focus created by movement. In (48a), the scope is the matrix clause, and in (48b), where the focused element occupies the edge of the embedded clause, the scope is either over the embedded clause or over the matrix clause. Example (49) shows that *in situ* focus can take either scope.

- (48) a. *Pekkaa Raine usko, että Merja rakastaa* ___
 Pekka.PAR.FOC Raine believes that Merja loves
 ‘It is PEKKA who Raine believes that Merja loves.’
 b. *Raine usko, että Pekkaa Merja rakastaa* ___
 Raine believes that Pekka.PAR.FOC Merja loves
 ‘Raine believes that it is Pekka who Merja loves.’
 ‘It is PEKKA who Raine believes that Merja loves.’
- (49) *Raine usko, että Merja rakastaa PEKKA*
 Raine believes that Merja loves PEKKA
 ‘It is PEKKA who Raine believes that Merja loves.’
 ‘Raine believes that it is PEKKA who Merja loves.’

We will therefore assume that the prosodically emphasized *in situ* phrase can check the focus feature. In fact, we have all the equipment at hand to do this: the focus feature will descend from Force to σ , act like a probe, and check the *in situ* focus feature by means of probe-goal (50).¹⁰

- (50) Force σ *Pekka rakastaa MERJAA*
 [uFocus] \rightarrow [uFocus] Pekka loves Merja.PAR[Focus]
 Agree(uFocus, Focus)

It is only the movement component that does not necessarily take place. What nullifies the EPP-feature at the left edge? Now recall that it is one characteristic property of Finnish that quite often movement to the final left edge position is preceded by several more local movement and pied-piping operations. None of these successive-cyclic movement steps are necessary for the prosodically emphasized phrase. There is, in other words, something about the prosodically emphasized but morphologically unmarked phrase (e.g., *MERJAA* ‘Merja.PAR’ in (50)) that makes the EPP-movement cycle optional, independent of an EPP-feature at the final left edge position.

¹⁰ Note that as we have argued that relative clauses in Finnish lack Force, the possibility of *in situ* Focus in relative clauses – combined with the impossibility of other Force-related phenomena – suggests that *main clause* Force is responsible for the relative clause *in situ* Focus. We leave for future research the semantic consequences of this assumption for Finnish.

There is another argument which supports this contention. Suppose it were claimed that the EPP-feature and the prosodic emphasis are grammatically equivalent in function, so that one could do ‘the same thing’ either by moving the phrase or using prosodic emphasis. Perhaps fronting is a subtype of prosodic emphasis, as it affects the prosodic contour of the clause and thus the prosodic status of the moved element. This would not explain, however, why prosodic emphasis fails to stop *wh*-interrogatives or phrases suffixed with the discourse particles from moving. These phrases must move independently of whether they have any kind of prosodic emphasis or not. Thus, movement is not a form of prosodic emphasis. In addition, the prosodic theory has very little to offer to explain why so many intermediate movement operations and pied-piping steps are required, once movement commences.

It still remains valid to say that the two strategies – movement and *in situ* prosodic emphasis – are the two options available for expressing focus in Finnish. Moreover, underlying both strategies is the probe-goal relation illustrated in (50). Finally, prosodic emphasis has no effect on other features triggering \bar{A} -movement. We will, given that focus is exceptional in this respect, assume that prosodic emphasis expresses a weak focus feature [Focus*] which is targeted by EPP optionally. The weak focus feature is, thus, literally an *in situ* focus feature.¹¹

5.4 What is Force?

In this section we clarify our analysis concerning the Force head. In our analysis, the Force head hosts two types of features: (A) a feature that encodes the *clause type*, and (B) discourse features encoded by the discourse particles *-hAn*, *-pA*, and *s*, and contrastive focus. In this section we will discuss the semantics of the discourse features and explain why these discourse features are all situated at Force.

Let us first consider the clause type feature, which has three values in Finnish: declarative, interrogative, and imperative. These are mutually exclusive, and thus, we assume that they represent values of one feature and constitute a closed and universal system (Portner 2005, Sadock & Zwicky 1985). In embedded contexts, the clause type enters into selec-

¹¹ There is independent evidence for such notion. For example, in Finnish multiple questions, only the first *wh*-element is required to move to the left periphery. The second cannot move to the same position as the first one, but it may take secondary movement steps within the sentence (see Huhmarniemi & Vainikka 2010).

- (1) a. *Kuka pääsi televisioon tekemällä mitäkin?*
 who got television.to by.doing what
 ‘Who got to the television by doing what?’
 b. *Kuka pääsi televisioon mitäkin tekemällä ___?*
 who got television.to what by.doing
 ‘Who got to the television by doing what?’

However, the second *wh*-phrase must follow all the principles and constraints of \bar{A} -movement. It must be a weak element in the same sense.

tion. The selection by a predicate can be seen to represent the relation between a clause and an external entity, typically a intentional agent or a thinker. For example, in a sentence *John thinks that Mary loves him*, the verb *think* selects the declarative clause *Mary loves him* and expresses a relation between John and the proposition that Mary loves him. What kind of relation this is depends on the type of predicate that enters into selection (e.g., verbs such as *think/ claim/ say/ believe/ wonder*). Different predicates carry different background assumptions and presuppositions. Some such predicates are compatible with some clause type features, but there are much more propositional attitudes than there are clause type features. Every full CP must have a value for the clause type feature. We therefore propose that Force hosts the clause type feature.¹²

Finite clauses may have illocutionary force. The Force head, however, does not by itself commit the thinker/speaker to an illocutionary speech act or illocutionary force (Portner 2005). For example in referring expressions *the thought that Pekka loves Merja* and *the question whether Pekka loves Merja*, the embedded clause is headed by Force that encodes the clause type. However, these embedded clauses do not claim, assert or question. In addition, there is no explicit thinker who maintains the proposition, and no implicit thinker seems to be required. Therefore, the clause type affects the semantic type of the proposition, which is potentially selected by a higher head, such as *thought/to think* or *question/to question*. Selection is possible, because the clause type is located in the Force head, which is the highest head within the clause.

According to our analysis, the Force head also hosts features associated with various discourse particles (*-hAn*, *-pA*, and *-s*) and the morphologically covert focus feature. These features differ from the clause type feature in a couple of respects. First, they are not all mutually exclusive. Hence, they do not represent values of a single feature, but, instead, express semantically interpretable features of their own. In addition, we have seen no evidence that would suggest that these discourse features are obligatory. Moreover, there is no evidence that the same features should be grammaticalized in all languages. We thus believe that Force head is embodies the clause type feature, and it may host other features optionally.

It is well-known that discourse particles and contrastive focus encode presuppositions of the thinker and involve information about the discourse (Stalnaker 1987, Heim

¹² One argument for positing the clause type feature to Force is that Finnish imperative sentences involve movement of the imperative verb, as proposed in Huhmarniemi (2012:75), see examples below. We hypothesize that this movement targets the σP .

- (1) a. *Sinä muutat kaupunkiin*
 you.NOM move city.to
 ‘You will move to the city.’
 b. *Muuta (sinä) kaupunkiin!*
 move.IMP you.NOM city.to
 ‘(You,) move to the city!’

1982, Roberts 2004, Krifka 2007). For example, contrastive focus represents the fact that the sentence is contrasted against some prior notion of the thinker and the *-hAn* particle expresses (among others) the contextual familiarity of the proposition in question (Karttunen 1975, Hakulinen 1976). The interpretation of discourse particles is thus connected to the presence of a thinker. According to Karttunen (1975), the *-hAn*-particle is possible in embedded contexts only when the matrix verb permits the access to the speaker's viewpoint. For example in (51a), the speaker knows that the proposition expressed by the embedded clause is true, but Pekka failed to realize that. However, factive verbs, such as *tietää*, 'know' in (51b), do not permit access to the speaker's viewpoint and the particle has no interpretation in this context.

- (51) a. *Pekka ei älynnyt, että Suomi-han on pieni maa.*
 Pete not realized that Finland-*hAn* is small land
 'Pete did not realize that Finland is actually a small country.'
- b. **Pekka tietää, että Suomi-han on pieni maa.*
 'Pekka knows that Finland is a small country, after all.'

Similarly, when a sentence with discourse particle(s) is embedded under contexts where the thinker is not present, or even metaphysically required, interpretation of the sentence becomes difficult. Consider (52a–b).

- (52) a. *Luin kirjasta väitteen, että maa-han kiertää aurinkoa*
 read from.book claim that earth-*hAn* rotates sun
 'I read from a book the claim that it is earth that rotates the sun.'
- b. *Luin netistä huhun, että Pekka-han rakastaa Merjaa*
 read from-internet rumor that Pekka-*hAn* loves Merja
 'I read a rumor from the internet that Pekka loves Merja.'

Sentences (52a–b) have a felicitous interpretation (i) where the embedded sentence is interpreted against speaker's background assumptions. We may ask whether these sentences are felicitous with the interpretation in which the claim/proposition is marked against somebody else's background assumptions, not mentioned (ii), and/or in which there is no such thinker at all (iii). Our judgement is that (iii) is impossible, (ii) is not felicitous or it is hard to get, and (i) is the most natural interpretation. It follows that the discourse particles, unlike the clause type, are necessarily related to the background assumptions of an external thinker.

Semantically, the clause type determines the type of the proposition, while discourse features express background assumptions of the thinker related to the proposition. These two notions are united in that both clause typing and thinker's background assumptions concern propositions with which a thinker can, in principle, have a propositional attitude-like relation. We maintain that the *reason* why discourse features originate in Force is because

they can take scope over full propositions.¹³ Under the current assumptions, relative clauses lack the Force head. This is possible because relative clauses do not enter into propositional attitudes; instead, they represent predicates.

Thus far, the exact semantics of the Finnish discourse particles *-hAn*, *-pA*, and *-s* has remained at the background. To prepare the cross-linguistic analysis, we will clarify their semantic content. A potential problem must be mentioned, however. The problem is that these features can be combined with each other and with the clause type features, so that they create an ever increasing set of possible meanings. For instance, it is possible to create a yes/no interrogative by raising a verb suffixed with the question particle *-kO* to Spec, σ P and attach the *-hAn* suffix to the *-kO*-particle. This is a way to create ‘a question with a background assumption of the familiarity of the matter’ (Hakulinen et al. 2004:798). Another difficulty is that since the phrase with *-hAn* must move to the left peripheral position, it can potentially be mixed with contrastive focus interpretation that arises from the same position, but is not overtly visible as a suffix. In addition, quite often these particles freeze into lexicalized or semi-lexicalized expressions, which are interpreted idiomatically.

These reservations aside, one function of *-hAn* is to express familiarity of the proposition (53a) or of the denotation of the phrase where the suffix appears (53b) (Hakulinen 1976, Hakulinen et al. 2004) (examples (53a–b) are adopted from Hakulinen et al. (2004:797)).

- (53) a. *Me-hän tiedettiin kaikki, mikä hänen asemansa oli*
 We-*hAn* knew all what his position was
 ‘We all knew what his position was, after all.’
- b. *Mikko-han se siinä*
 Mikko-*hAn* it there
 ‘It’s Mikko alright!’
- c. *Mikko-han se taas siinä*
 Mikko-*hAn* it again there
 ‘It’s Mikko again!’

We thus propose to identify *-hAn* as a familiar topic, or G-Topic in the topic typology of Bianchi & Frascarelli (2010), see also (Frascarelli & Hinterhölzl 2007, Givón 1983, Schwarzschild 1999) (G from “givenness”). In some contexts, familiarity is combined with contrastive focus interpretation, but this results from the combination of focus and *-hAn*. Consider examples in (54).

- (54) a. *Pekkaa Merja rakastaa ____*
 Pekka.PAR Merja loves
 ‘It is Pekka who Merja loves.’

¹³ ForceP is the smallest unit which can have an independent truth-value, thus it is the smallest unit able to represent a simple proposition.

- b. *Pekkaa-ban Merja rakastaa __, ei Jukkaa*
 Pekka.PAR-*hAn* Merja loves not Jukka.PAR
 It is Pekka, who Merja loves, not Jukka.’
- c. *Muistatte varmaan, että Pekkaa-ban Merja rakastaa __*
 you.remember certainly that Pekka.PAR-*hAn* Merja loves
 ‘You surely remember that it was Pekka who Merja loves.’

The hypothesis that G-topic and contrastive focus may combine predicts that (54a) must always have contrastive focus interpretation, while (54b) is ambiguous and implies either that a familiar person was contrastively focused (focus + *-hAn*), or that the person or the proposition was familiar but not contrasted (*-hAn*). These predictions are borne out. The latter interpretation is provided in (54c). In short, then, we propose that *-hAn* is a feature associated with G-Topic. This would mean that Finnish full CP can have two G-Topics, the higher one, marked with *-hAn*, and the lower one, which is morphologically unmarked but located at Spec,FinP (55b), as we recall from Holmberg & Nikanne (2002) (and example (9) above).

- (55) a. *Pekkaa-ban Merja rakastaa __*
 [1st G-topic] [2nd G-topic] loves
 ‘It is Pekka who Merja loves’
- b. *Graham Greene-hän_i tämän kirjan_j kirjoitti ___i ___j*
 [1st G-topic] [2nd G-topic] wrote
 Graham Greene.NOM-*hAn* this book.ACC wrote.

This proposal does not disagree with Bianchi & Frascarelli (2010), who claim that the G-Topic system is, in fact, recursive. In Finnish, a full CP can host at least two G-Topics. The two topics differ at least in that the higher topic can be associated with additional focus, while focusing the lower topic requires prosodic emphasis. In addition, the higher G-topic is evaluated against the background context, whereas the lower G-topic is not (thus, it sits comfortably inside logical propositions and relative clauses).¹⁴

A possible problem for this analysis is constituted by the fact that it is possible to use the *-hAn*-particle with quantifiers and DPs which have no denotation and cannot, therefore, be familiar (56).

- (56) *Kukaan-ban ei tullut juhliin*
 nobody-*hAn* not come to.party
 ‘??It was nobody who came to the party.’

However, semantically the familiarity is here associated with the whole proposition, not with the quantifier. Thus, the above sentence makes a claim and assumes that the

¹⁴ One possibility is that the lower G-topic is involved in proposition-internal predication (Kiss 2002), while the latter is involved in explicating something about the background of the whole proposition.

addressee is already familiar with the fact, not that she or he would be familiar with ‘nobody’. We do not know at present how this difference is represented in grammar.¹⁵ However, if the *-hAn* attaches to a head, it usually marks familiarity of the whole proposition.

We thus claim that *-hAn* expresses a higher G-topic and, thus, it makes sense that it originates from Force. The semantic function of the discourse particle *-pA* is more difficult elucidate. According to Hakulinen et al. (2004:799), one of its functions is to emphasize contrastive interpretation. Example (57a) means that the proposition is contrasted with prior knowledge, example (57b) has the implication that the speaker is directly contradicting some previous claim. However, in (57c), the addressees role is emphasized in a more general sense, but there is no contrast.

- (57) a. *Pekkaa Merja rakastaa* ____
 Pekka.PAR Merja loves
 ‘It is Pekka, not somebody else, that Merja loves.’
- b. *Pekkaa-pa Merja rakastaa* ____
 Pekka.PAR-*pA*(s) Merja loves
 ‘No! It is PEKKA that Merja loves!’
- c. *Sinä-pä osaat!*
 you-*pA*(s) can
 ‘You can!’

The clue to the interpretation of the *-pA*-particle comes from the fact that particle *-pA* is incompatible with yes/no interrogatives (58a–b), odd with interrogative pronouns in genuine interrogatives (58c) and non-referential QNPs and DPs (58d), and it cannot appear as an answer to a question (58e).

- (58) a. **On-ko-pa kylmä?*
 is-*kO-pAs* cold?
- b. **Pekka-ko-pa rakastaa Merjaa?*
 Pekka-*kO-pAs* loves Merja
- c. *??Kuka-pa rakastaa Merjaa?*
 who-*pAs* loves Merja
 (interpreted as an interrogative)
- d. **?Kukaan-pa ei tule!*
 nobody-*pAs* not come

¹⁵ One possibility is that the interpretation depends on the locus of the interpretable [Han]-feature. The interpretable [Han]-feature represents the G-topic, thus hosting this feature at Force would give rise to an interpretation in which the whole proposition is marked as the topic. More needs to be said, however, since it is not clear how such an analysis would fit into the probe-goal framework introduced earlier.

- e. – *Kuka tulee?* – **?Merja-pa*
 Who comes? Merja-*pA*
 ‘– Who is coming? – Merja.’

Moreover, the particle is compatible with contexts where the thinker is asserting or confirming some proposition, but not felicitous if there is hesitation, doubt, or if the proposition is declared as false.

- (59) a. *Tiedän varmasti, että Pekka-pa voittaa kilpailun*
 I.know for.sure that Pekka-*pA* wins competition
 ‘I know for sure that Pekka will win the competition.’
 b. *?*En usko, että Pekka-pa voittaa kilpailun*
 I.not believe that Pekka-*pA* wins competition
 c. *?*Ei ole totta, että Pekka-pa voittaa kilpailun*
 not be true that Pekka-*pAs* wins competition

We propose that *-pA* expresses thinker’s conviction towards the truth of the proposition, and is therefore best described as representing assertive illocutionary force. The usage of the assertive force is most common when somebody wants to emphasize his own assertion or command (60).

- (60) *Mennään-pä kauppaan!*
 go.1PL-*pA* to.shop!
 ‘Let’s go to the shop!’

In this function, the *-pA*-particle also marks a move in the conversation by emphasizing speaker’s commitment to the truth of the proposition. In sum, *-hAn* represents G-topic, while *-pA* is an illocutionary force feature. Both *-hAn* and *-pA* are force-level features, as they can take the whole proposition within their scope. Thus, they are optionally merged at Force.

The *s*-particle has somewhat different syntactic properties. Unlike *-hAn* and *-pA*, it is unable to trigger \bar{A} -movement alone (61a), but like the other discourse features, it must still occur in the left periphery. Furthermore, it can combine with interrogatives (61b), the yes/no particle *-kO* (61c) and with *-pA* (61d), but not with relative pronouns, focused phrases (61a) or *-hAn* (61e). It can also be suffixed to the imperative verb (61f).

- (61) a. **Pekkaa-s Merja rakastaa* ____
 Pekka.PAR-s Merja loves
 b. *Kuka-s rakastaa Merjaa?*
 who-s loves Merja.PAR
 ‘Who loves Merja?’

- c. *Tulee-ko-s Merja?*
 come-*kO*-s Merja
 ‘Is Merja coming?’
- d. *Pekka-pA-s rakastaa Merjaa ___?*
 Pekka-*pA*-s loves Merja.PAR
 ‘Pekka loves Merja.’
- e. **Pekka-hAn-s rakastaa Merjaa*
 Pekka-*hAn*-s loves Merja.PAR
- f. *Tule-s tänne!*
 come-s here
 ‘Come here!’

Thus, the particle *-s* can co-occur with an element fronted to σ P except for the bare DP in (61a) and the particle *-hAn* in (61e); we leave open the question of why *-s* is restricted in this way. The *-s*-particle typically brings a casual or informal tone to the expression (Karttunen 1975, Hakulinen et al. 2004:§837). A way to show that the *s*-particle is related to the sentence background and/or thinker is to place it in an impersonal embedded context. As predicted, the particle cannot be used in such context (62a) and to the extent it can be interpreted, it scopes out and expresses speaker’s attitude toward the clause (62b–c). Thus, in examples (62b–c), the interpretation where the sentence is completely unrelated to the speaker-addressee situation is very hard to conceive.

- (62) a. ??*Artikkelissa kysyttiin (että) mitä-s merkitys on*
 in.article was.asked (that) what-s meaning is
 ‘It was discussed in the article, what is meaning?’
- b. ??*He pohjivat (että) minne-s matkustaisivat lomalla.*
 They wonder (that) where-s to-travle in-holiday
 ‘The were wondering where to travel during the holiday’
- c. ??*Siellä keskusteltiin että koska-s tulee sade*
 There was.discussed that when-s comes rain
 ‘There was a discussion about when it will rain.’

These observations, we believe, support the notion that the *-hAn*, *-pA* and *-s* features originate from Force and are inherited one step lower, and thus also why they do not fit into relative clauses.

5.5 Feature inheritance

In this section we clarify how the feature inheritance mechanism of our analysis works. We will also revise the status of the Fin-head. Feature inheritance itself is like reversed head-movement or very local head-to-head Agree: it brings features from a higher head to a

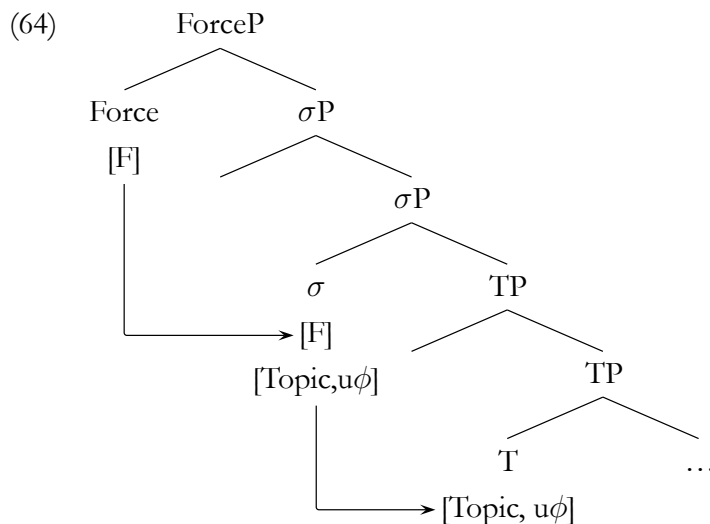
head one step lower. It can be best understood in the context of the theory of phases. A long-standing hypothesis among generativists has been that the derivation of expressions (or, operations more generally) proceeds in cycles. Thus, expressions are derived in smaller packages, called ‘phases’ in today’s jargon. Chomsky (2001) proposes that CPs and v*Ps are phases (among others, such as DPs, which are not discussed here). An additional assumption is that uninterpretable features, such as an unvalued phi-set, Case and EPP, are properties of the phase heads C and v*. A problem with this view is that it is the finite T which manifests these properties, not C. Finite T possesses the EPP feature requiring a subject at Spec,TP, and it is finite verbs which manifest phi-agreement and nominative Case assignment. Thus, Chomsky proposes that T inherits these features from the phase head C, observing that “for T, φ -features and Tense appear to be derivative, not inherent: basic tense and also tense-like properties [...] are determined by C [...] or by selecting V [...] or perhaps even broader context. In the lexicon, T lacks these features. T manifests the basic tense features if and only if it is selected by C (default agreement aside); if not, it is a raising (or ECM) infinitival, lacking φ -features and basic tense” (Chomsky 2008:146). The idea goes back to Holmberg & Platzack (1989).

We consider whether there is independent evidence for such an operation in Finnish. Brattico & Huhmarniemi (2006) discuss evidence that suggest a positive answer. In Finnish, the negation word *e-* inflects in full phi-features of the subject argument and appears before the main verb or any verbal elements (63).

- (63) *Pekka ei syö leipää.*
 Pekka not.3SG eat bread
 ‘Pekka doesn’t eat bread.’

If it were shown that the negative particle does occupy its own head Neg between C and T, the feature inheritance model would make a clear prediction. It would predict that the features of finiteness should appear at the negation, now inheriting features from C, and not at T, not selected by C anymore. If there were no feature inheritance, on the other hand, negation should behave like a particle, properties of finiteness accumulating at T. Brattico & Huhmarniemi (2006) first argue that the negation does occupy its own projection NegP between C and T, and then they argue that the finiteness properties accumulate at Neg and not at T, exactly as predicted by the C-T feature inheritance hypothesis. Specifically, the negation shows full phi-agreement, contrary to T, and it participates in nominative Case assignment and bears the finite clause EPP-feature. Tense is still expressed at T, which occurs lower. Furthermore, Brattico & Saikkonen (2010) show that in negated clauses in child Finnish, the thematic subject raises to Spec,NegP if and only if an overt C-head is present. Otherwise the subject DP remains in a lower position. They suggest that the EPP-property is activated if and only if the C-head is merged above NegP, providing yet another type of evidence that the finiteness properties have something to do with the development of C.

Brattico & Huhmarniemi (2006) further propose that what is inherited from C is the nominative Case feature, while the EPP and phi-agreement emerge as a consequence. Chomsky, in contrast, assumes that it is the uninterpretable phi-set which percolates downwards in the structure, while EPP/nominative Case assignment is seen as a consequence of phi-agreement and Move. Here we follow the latter system (Chomsky 2008, Richards 2007). Specifically, we assume that finite $u\phi$ -features originate from σ , not Force, because such features occur in Force-less relative clauses. Finite $u\phi$ -features are inherited by the highest functional projection selected by σ . That would be either Neg or T in Finnish, deriving the empirical facts correctly. In addition, we follow Miyagawa (2010) and Jiménez-Fernández & Miyagawa (in press) and assume that also the lower topic feature percolates from the CP-region into Neg/T, accounting for the fact that Finnish topics occur in this position. The sum of these properties is illustrated in (64), where [F] represents the various force features (clause type, focus, G-topic, illocutionary force, yes/no interrogative) and TP can be replaced by NegP.



This claim would put Finnish into the middle position between discourse-prominent languages, where T inherits only discourse features (Japanese, Korean), and agreement-prominent languages, where T inherits only $u\phi$ -features (English). In Finnish, both features are inherited, since the position for topics and full agreement is the same. However, the two can also be dissociated, as we have seen (see Brattico 2012 for a minimalist analysis of what happens to the phi-features at T/Neg). Thus, Finnish would, according to Jiménez-Fernández & Miyagawa (in press), be a discourse-prominent *and* agreement-oriented language.

This analysis has an interesting implication that the separate Fin-head could, in principle, be now dispensed with, its properties being promulgated to σ . The question is empirical, and hinges on whether the extra adjunction and specifier sites provided by Fin can be demonstrated. They are extra positions below the operator position but higher than the

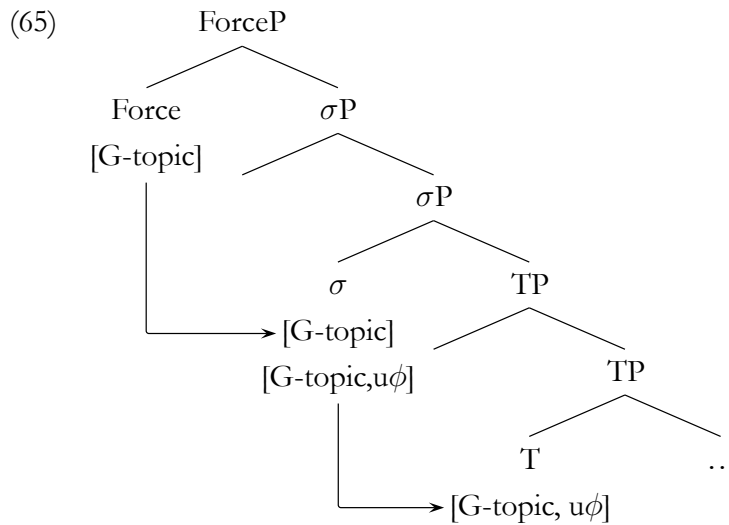
grammatical subject position. At the present writing, we are aware of no evidence which requires the presence of these specifier positions and adjunction sites. This compels us believe that it might be useful to entertain an analysis according to which the properties of finiteness are originally at σ , and percolate to Neg/T, and there is no Fin-head. On the other hand, if the extra positions posited by the Fin-head were shown to exist, our hypothesis would be entirely compatible with an analysis where the finite portion of the clause is headed by a dedicated Fin-head.

5.6 Crosslinguistic considerations

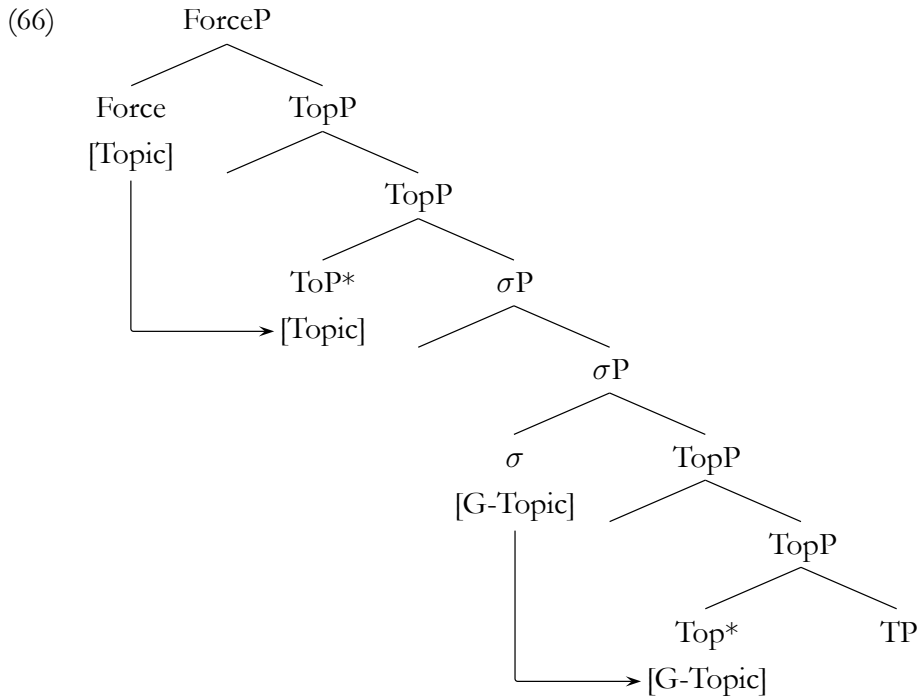
We conclude our investigation by touching a crosslinguistic issue. The general line of thought we want to pursue here is that what in many other languages is expressed by means of several syntactic positions, is expressed in Finnish by means of several suffixes. Since several left peripheral features can be expressed in Finnish by stacking overt suffixes (e.g. *poika-ko-han* 'boy-*kO-hAn*'), the cartography of syntactic positions can be correspondingly smaller.

Rizzi (1997) lays out much the basis for the modern theory of Italian CP-cartography. In fact, we adopted several features from this analysis into our analysis of the Finnish left edge. To establish the common ground, we take notice of the similarities. First, we haven't been able to discover any difference in syntactic position between the Italian high complementizer *che* and the Finnish high complementizer *että* 'that', so we will assume that they are both overt exponents of Force. Rizzi's Focus position is near-identical to the σ as proposed here: there is only one such position per clause, both focus phrases and wh-phrases compete for the same position, it creates quantificational constructions, is filled by movement, and precedes topics. These similarities suggest that we are seeing the same position, as manifested in two different languages. Our analysis differs in that in Finnish, this position is not constituted by the focus interpretation; rather, it can host the focus feature among other discourse features.

Rizzi assumes that the Italian Focus projection – our σ P – is sandwiched between recursive topic positions. We found no evidence for such positions from Finnish. Cinque (1990) shows that these topic positions can be generated by taking advantage of pronominal clitics and not by means of wh-movement. Finnish does not utilize pronominal clitics. However, our analysis found evidence for corresponding topic *features*. The high G-topic, encoded by the *-hAn* suffix, originates from Force and ends up at σ , while the low G-topic originates at σ at ends up at T (65).



Remember that the two G-topics are not semantically equivalent: the high topic is pragmatically active, while the former is involved in proposition-internal predication. Accordingly, the difference with respect to the Italian CP-cartography is that whereas in Finnish the topic features accumulate into two projections, in Italian they generate additional syntactic positions (between Force and σ , and between σ and Fin/T). Following Giorgi & Pianesi (1992), we propose that this difference is due to how features are ultimately expressed. Recall that, in Finnish, most discourse functions are expressed by means of overt suffixes, and that these features can be stacked on top of each other, whereas in Italian, they are not expressed by means of suffixes, let alone by means of stacked suffixes. Thus, where Italian makes use of several separate *positions*, one per feature, Finnish makes use of separate overt *suffixes*, one for each feature and, thus, requires fewer syntactic positions. We might at least tentatively speculate that they are originally merged at the same positions (Force, σ). This hypothesis gives (66) for the Italian left periphery, where the inherited topic features create separate projections instead of stacking at σ . These projections make room for distinguished topic specifier positions, as suggested by Rizzi (1997). Head σ is the operator/focus position.



An alternative analysis is to assume that the Italian topic features are base-generated to the topic heads, so there would be no feature inheritance. This might be Rizzi's position, to the extent that he is concerned with this matter at all. The feature inheritance analysis makes the prediction that the higher topics would be contingent on the presence of ForceP, whereas the lower topics are contingent on the presence of σ . Under our analysis, the prediction is that – if the relative clause operator Λ is located at σ , and if relative clauses do not project Force, as we have assumed here – relative clauses should not have high topics. This prediction is borne out (67).

(67) (Rizzi 1997:298)

- a. *Un uomo a cui, il premio Nobel, lo daranno senz'altro*
'A man to whom, the Nobel Prize, they will give it undoubtedly.'
- b. **Un uomo, il premio Nobel, a cui lo daranno senz'altro*
'A man, the Nobel Prize, to whom they will give it undoubtedly.'

Another prediction is that interrogatives, which do have Force, should have room for such high topics in Italian but not in Finnish. We have argued here for the latter claim, the former is shown by (68).

(68) (Rizzi 1997:298)

- a. *A chi, il premio Nobel, lo daranno*
'To whom, the Nobel prize, will they give it?'

- b. *Il premio Nobel, a chi lo daranno?*
 ‘The Nobel prize, to whom will they give it?’

Example (68b) is impossible in Finnish due to the lack of separate high topic positions. Italian contrasts with Finnish, however, in that Italian relative clauses are compatible with fronted focus elements (69a, from Rizzi 1997:298), while Finnish relative clause are not (69b). Instead, in Finnish, a focused element must be emphasized prosodically and remain *in situ* (69c).

- (69) a. *Ecco un uomo a cui IL PREMIO NOBEL dovrebbero dare (non il premio X)*
 ‘Here is a man to whom THE NOBEL PRIZE they should give (not prize X)’
 b. **Hän on mies, jolle Nobelin palkinto heidän pitäisi antaa __, ei palkintoa X*
 ‘Here is a man to whom THE NOBEL PRIZE they should give (not prize X)’
 c. *Hän on mies, jolle heidän pitäisi antaa NOBELIN PALKINTO, ei palkintoa X*
 ‘Here is a man to whom THE NOBEL PRIZE they should give (not prize X)’

In addition, in Italian interrogatives, such focused constituent are ungrammatical (70). In this respect the Italian is similar to Finnish.

- (70) (Rizzi 1997:298)
 a. **A chi IL PREMIO NOBEL dovrebbero dare?*
 ‘To whom THE NOBEL PRIZE should they give?’
 b. **IL PREMIO NOBEL a chi dovrebbero dare?*
 ‘THE NOBEL PRIZE to whom should they give?’

Rizzi (1997) therefore takes the view that the relative operator (and the moved relative pronoun) is at Spec,ForceP, unlike the interrogative operator, which takes the lower Focus/ σ Position. The argument, to recap, is that wh-operators and relative operators contrast in their behavior with respect to what they do with high topics and focus elements: (1) wh-elements allow high topics, while the relative pronouns do not, and (2) wh-elements do not have room for focus phrases while relative pronouns have. Therefore, the relative pronouns must be merged higher.

Syntactically we have nothing to offer against a view that would put Λ into Force (or to an equivalent high position) in Italian and in σ in Finnish since, as we have seen, the final positions for left peripheral features, topic in particular, can differ from language to language. According to this analysis, Λ would be generated in Force (or to an equivalent high position) in Italian and in σ in Finnish. On the other hand, we would like to bring up a semantic issue, deriving from Portner & Yabushita (1998) who discuss similar “promotion” phenomenon in connection with embedded topics. Namely, it is not clear whether the focus constituent inside the relative clause is interpreted as taking the relative clause as its scope, or whether it is actually interpreted as taking matrix scope and is thus associated with the matrix focus feature (or Focus head). If it takes matrix scope, then Rizzi’s example would

not show that the focus feature is part of the left periphery of the relative clause. We leave this matter for future.

6 Conclusions

Previous research has established that Finnish left periphery contains only a few syntactic projections: one lower position for topics, and another operator position above the topic position. Here we begin from the fact that relative clauses seem to contain even less. A hypothesis was developed according to which relative clauses lack the Force projection, which is the locus of grammatical features taking the whole proposition as their scope. Specifically, we assumed that Force in Finnish contains a constitutive clause type feature (interrogative, declarative, imperative in Finnish), a yes/no feature *-kO*, a G-topic feature *-hAn*, illocutionary force features *-pA* and *-s*, and a contrastive focus feature Foc. To explain why these features are grammatically active at the projection one step lower, we relied on the feature inheritance hypothesis, according to which features of a higher head may percolate to the head immediately below. Going beyond Finnish, we developed a syntax-morphology complementarity hypothesis, according to which in those languages where the said features cannot be realized as overt suffixed, syntactic positions are generated instead. We use this assumption to explain why the Italian left periphery is more rich in its syntactic positions, but less rich in its ability to express those features overtly.

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