

The locality of snowballing *wh*-movement in Finnish

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1 Introduction

1.1 Goals of the presentation

1. Introduce the basic properties of Finnish snowballing *wh*-movement
2. Investigate snowballing *wh*-movement from the point of view of antilocality
3. Assess the suitability of intermediate functional heads as an explanation for snowballing *wh*-movement.

1.2 Snowballing *wh*-movement in Finnish

Finnish displays a general mechanism of internal *wh*-movement and recursive pied-piping inside content questions, embedded questions and relative clauses. For example, transforming the sentence (1a) to a content question (b) requires four A-bar movement steps (Huhmarniemi, 2009a,b):

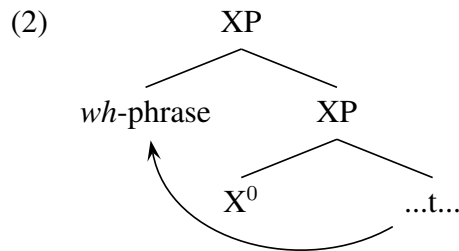
- (1) a. Pekka kaatui [_{AdvP} kävellessään [_{PP} kohti [_{DP} Merjan taloa]]]
Pekka fell walking towards Merja's house
'Pekka fell when walking towards Merja's house.'
- b. [_{AdvP} [_{PP} [_{DP} Kenen t taloa] kohti t] kävellessään t] Pekka kaatui t?
whose house towards walking Pekka fell
'Whose house was Pekka walking towards when he fell?'

1. DP-internal *wh*-movement
2. PP-internal *wh*-movement
3. *wh*-movement inside a non-finite clause
4. *wh*-movement to the edge of C

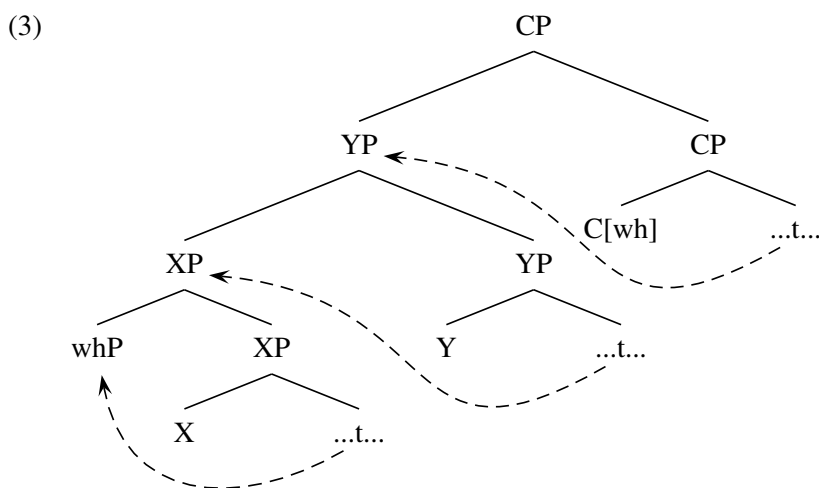
Internal wh-movement: movement of the *wh*-phrase to the edge of a pied-piped constituent, transforming the constituent into a complex *wh*-phrase (Riemsdijk, 1985).

Secondary wh-movement: all *wh*-movement to other than scope position (Heck, 2008). The term secondary *wh*-movement thus covers both internal *wh*-movement and the intermediate steps of successive cyclic *wh*-movement.

Chomsky (2001, 2008): discourse-related material occupies the *edge* position of the phrase.



In snowballing *wh*-movement, the internal *wh*-movement targets the edge of a c-commanding head Y, and pied-pipes YP to the next edge (3). The pied-piped phrase forms a 'roll-up' structure and may thus be considered an instance of snowballing movement.



1.3 Edge-position and recursive pied-piping

In *wh*-movement languages, the specifier position of the *wh*-phrase is often stated as a prerequisite for pied-piping, and recursive pied-piping in particular (Webelhuth, 1992; Cowper, 1987; Grimshaw, 1991, 2000). E.g. in (4), pied-piping from complement position is not available.

- (4) a. a man [_{DP} whose sister's lawyer's deck chair] you spilled coffee on t
 b. *a man [_{DP} the deck chair of whom] you spilled coffee on t

The requirement that the constituents that trigger pied-piping have to occupy the edge position is captured by the Edge generalization (5) by (Heck, 2008).¹

(5) **Edge generalization** (Heck, 2008, p. 88)

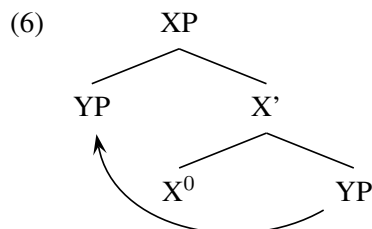
If a *wh*-phrase α pied-pipes a constituent β , then α has to be at the edge of β .

¹Heck (2004, 2008) proposes that pied-piping from the complement path is available as well and analyses the variation in OT-inspired framework.

Finnish constitutes an ideal example of the Edge generalization: content question formation and relative clause formation is possible only when the *wh*-phrase or relative pronoun occupies the edge position inside the pied-piped phrase (Huhmarniemi, 2009a,b).

1.4 Antilocality constraint (Abels, 2003)

According to Antilocality constraint, a complement cannot be raised directly to the specifier of the same head. In other words, the movement of the type in (6) would not be permitted (Abels, 2003, p. 12).



2 Finnish *wh*-movement

2.1 Movement to the edge of C

Finnish content questions are formed by fronting one *wh*-phrase to the specifier of C (Vainikka, 1989; Vilkkuna, 1995; Holmberg, 2001). Relative clauses are formed by fronting the relative pronoun.²

- (7)
- a. Pekka ulkoilutti koiria puistossa.
Pekka.NOM walked dogs.PAR park.in
'Pekka walked the dogs in the park.'
 - b. Missä Pekka ulkoilutti koiria t?
where Pekka.NOM walked dogs.PAR
'Where did Pekka walk the dogs?'
 - c. [Mitä koiria] Pekka ulkoilutti t puistossa?
which.PAR dogs.PAR Pekka walked park.in
'Which dogs did Pekka walk in the park?'
 - d. koirat, joita Pekka ulkoilutti t puistossa
dogs, which.PAR Pekka walked park.in
'the dogs, which Pekka walked in the park'

When the *wh*-phrase is in-situ, the sentence forms an echo question (a). Leaving the relative pronoun in-situ is not acceptable (b).

- (8)
- a. Pekka ulkoilutti mitä koiria puistossa? (echo)
Pekka.NOM walked which dogs.PAR park.in
'Pekka walked **which dogs** in the park?'

²In Finnish, the partitive case (PAR) alternates with the accusative case as the case assigned by the verb.

- b. *koirat, Pekka ulkoilutti joita puistossa
 dogs, Pekka walked which.PAR park.in

2.2 Non-finite adjunct clauses

Non-finite clauses display internal *wh*-movement and pied-piping and form extraction islands.

(9) 'Rationale adjunct' (KSE)

- a. Pekka puki sadetakin [ulkoiluttaakseen koiria puistossa]
 Pekka put on rain coat walk.KSE dogs.PAR park.in
 'Pekka put on a rain coat in order to walk the dogs in the park.'
- b. [[Mitä koiria] ulkoiluttaakseen t] Pekka puki sadetakin t?
 which.PAR dogs.PAR walk.KSE Pekka put on rain coat
 'Which dogs did Pekka plan to walk when he put on the rain coat?'
- c. *[Mitä koiria] Pekka puki sadetakin [ulkoiluttaakseen t puistossa] ?
 which.PAR dogs.PAR Pekka put on rain coat walk.KSE park.in

Similarly, the locative adjunct may undergo internal *wh*-movement and pied-pipe (10a), whereas extraction is not available (b).

- (10) a. [[Missä puistossa] koiria ulkoiluttaakseen t] Pekka puki sadetakin t?
 which.in park.in dogs.PAR walk.KSE Pekka put on rain coat
 'Where did Pekka plan to walk the dogs when he put on the rain coat?'
- b. *Missä Pekka puki sadetakin [ulkoiluttaakseen koiria t] ?
 where Pekka put on rain coat walk.KSE dogs.PAR

Examples from other types of non-finite adjunct clauses:

(11) 'Temporal adjunct' (ESSA)

- a. Pekka kompastui [kantaessaan pöytään lautasia]
 Pekka fell carry.ESSA table.to plates.PAR
 'Pekka fell when he was carrying plates to the table'
- b. [Mitä pöytään kantaessaan t] Pekka kompastui t?
 what.PAR table.to carry.ESSA Pekka fell
 'What was Pekka carrying to the table when he fell?'
- c. [Mihin astioita kantaessaan t] Pekka kompastui t?
 where dishes.PAR carry.ESSA Pekka fell
 'Where was Pekka carrying the dishes when he fell?'

The temporal adjunct is an extraction island:

- (12) *[Mihin] Pekka kompastui [kantaessaan astioita t] ?
 where Pekka fell carry.ESSA dishes.PAR

(13) MA-adjuncts (several types)

- a. Pekka yllätti Merjan [hankkimalla uuden polkupyörän]
Pekka surprised Merja.ACC purchase.MA new.ACC bike.ACC
'Pekka surprised Merja by purchasing a new bike.'
- b. [Minkä hankimmalla t] Pekka yllätti Merjan t ?
what.ACC purchase.MA Pekka surprised Merja.ACC
'By purchasing what did Pekka surprise Merja?'

The MA-adjunct is an extraction island:

- (14) *?Minkä Pekka yllätti Merjan [hankkimalla t] ?
what.ACC Pekka surprised Merja.ACC purchase.MA

2.3 Non-finite complement clauses

Certain non-finite clause complements allow both extraction and pied-piping:

- (15) **MA-complement**
- a. Pekka halusi lähteä [auttamaan kodittomia koiria]
Pekka wanted leave help.MA homeless.PAR dogs.PAR
'Pekka wanted to go to help homeless dogs'
 - b. Ketä Pekka halusi lähteä [auttamaan t] ?
who.PAR Pekka wanted to.go help.MA
'Who did Pekka want to go to help?'
 - c. [Ketä auttamaan] Pekka halusi lähteä t?
who.PAR help.MA Pekka wanted to.leave
'Who did Pekka want to go to help?'

2.4 Determiner phrases

In Finnish, the demonstrative pronoun / determiner may co-exist with the genitive argument

(a). However, the overt D is not allowed when the *wh*-phrase occupies the edge of D (b).

- (16) a. se Pekan uusi kirja
the Pekka.GEN new book
'Pekka's new book'
- b. Genitive argument
(*se) kenen (*se) uusi kirja
the who.GEN the new book
'whose new book?'
- c. PP
[_{DP} [_{PP} Minkä ohi] käveleminen] on aina yhtä vaikeaa?
what.GEN past walking is always as difficult
'What is it always so difficult to walk by?'
- d. AP

millainen kirjaston kirja
 what kind of library.GEN book
 'what kind of book from the library?'

Other languages that display DP-internal *wh*-movement as well include Hungarian (Szabolcsi, 1983, 1994) and Tzotzil (Aissen, 1987, 1996). See Heck (2008) for more examples of internal *wh*-movement from other languages.

2.5 Adjectival phrases

Finnish adjectival phrases may contain a genitive pre-modifier, as in (17a-b), which is able to pied-pipe the AP together with the DP to the left periphery of C. The same phenomenon is illustrated by a participial phrase modifying a nominal head (18).

- (17) a. Pekka osti [_{DP} [_{AP} ruohon värisen] nojatuolin]
 Pekka bought grass.GEN colored.ACC armchair.ACC
 'Pekka bought an armchair of the color of grass.'
- b. [_{DP} [_{AP} Minkä värisen] nojatuolin] Pekka osti t?
 what.GEN colored.GEN armchair.ACC Pekka bought
 'Which color is the armchair that Pekka bought?'
- (18) [_{DP} [_{AP} Kenen äidilleen kirjoittaman] kirjeen] Pekka luki t?
 whose mother.to written.PRTCPL letter.ACC Pekka read
 'Whose letter to his/her mother did Pekka read?'
- a. [_{DP} [_{AP} Kenelle kirjoitetun] kirjeen] Pekka luki t?
 who.to written.PRTCP letter.ACC Pekka read
 'Who was the letter written to which Pekka read?'

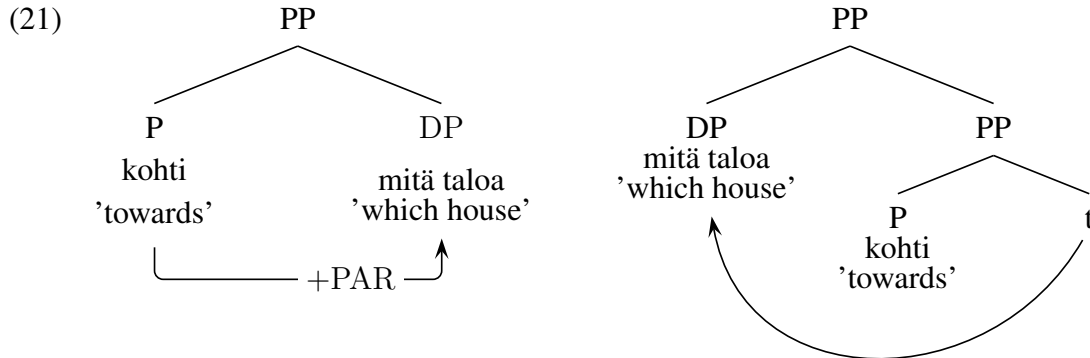
2.6 Prepositional phrases

The preposition *kohti* 'towards' assigns partitive case to its complement DP (Vainikka, 2003) (19a), and the *wh*-DP moves to the edge of the PP in both content questions and relative clauses (19a-c) (Manninen, 2003). If the *wh*-phrase is left in-situ inside the fronted constituent, the sentence forms an echo question. The in-situ position of the relative pronoun inside the fronted PP is ungrammatical (20).

- (19) a. Pekka käveli [_{PP} kohti [_{DP} tuota taloa]]
 Pekka walked towards that house.PAR
 'Pekka walked towards that house.'
- b. [_{PP} [_{DP} Mitä taloa] kohti t] Pekka käveli t?
 which.PAR house.PAR towards Pekka walked
 'Which house did Pekka walk towards?'
- c. talo, [_{PP} jota kohti t] Pekka walked t
 house PP which.PAR towards Pekka walked
- (20) a. [_{PP} Kohti [_{DP} mitä taloa]] Pekka käveli t? (echo)
 towards which.PAR house.PAR Pekka walked

'Pekka walked towards **which** house?'

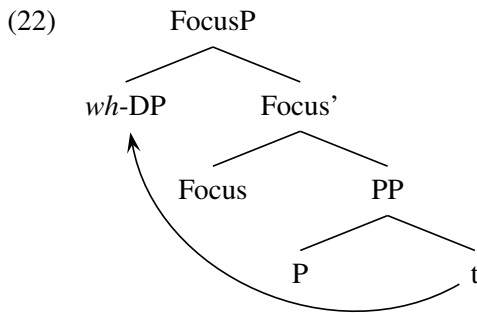
- b. *talo, [_{PP} kohti jota] Pekka käveli t
house towards which.PAR Pekka walked



For example, Manninen (2003) has proposed that the Finnish P:s contain an optional EPP-property, which allows the complement DP raise to the specifier position when needed. The movement from the complement to the specifier violates the antilocality constraint (6) proposed by Abels (2003, p. 12)

3 Focus head on the top of the PP?

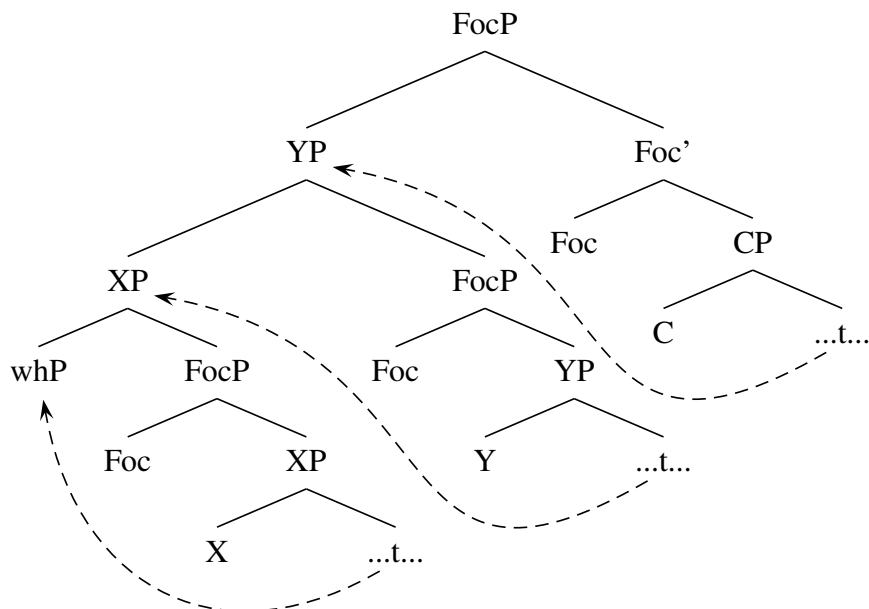
A possible solution for the antilocality violation may be formulated along the lines of the cartography approach (Cinque, 2002; Rizzi, 2004; Cinque and Rizzi, 2010; Asbury et al., 2008). Let us assume that there is a Focus projection on the top of the PP, which is able to host the *wh*-phrase.³



To maintain the assumption that the implementation of the internal *wh*-movement is independent of the phrase type, we would have to assume that the Focus-projection is present on each snowball domain.

³In Finnish, the *wh*-movement and focus movement both target the same position in the left periphery of C (e.g. Vilkuna, 1995). It is therefore possible that both movement types are triggered by the same head in the C-domain

(23)



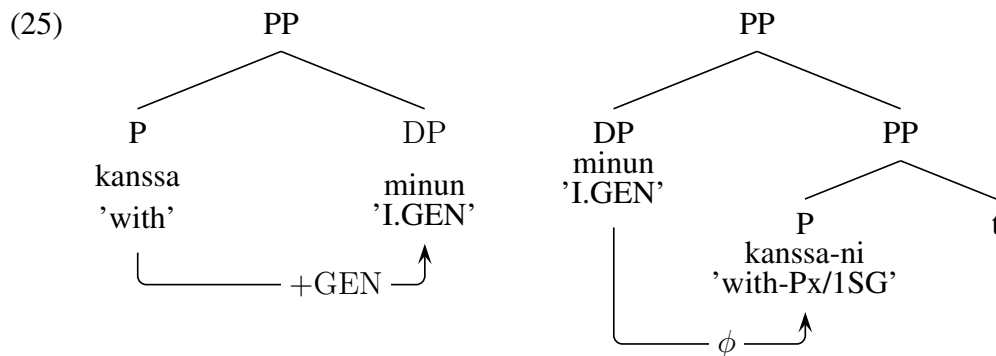
1. We would have to assume the Focus projection in all snowball domains: CP, DP, PP, AP, all adjuncts, and certain non-finite complement clauses in Finnish.
2. Over-generation of unfilled positions when *wh*-phrase not present.
3. Lookahead problem in the presence of interrogative C.
4. Redundancy, since the trigger of movement would be both in the active *wh*-phrase and the Focus head.
5. If the *wh*-movement always targets the spec of a Focus head, the anti-locality theorem would be weakened.

Any account that relies on probing head or a probing feature on the head H is problematic in explaining Finnish snowballing *wh*-movement or any type of successive-cyclic movement (Bošković, 2002; Boeckx, 2003; Chomsky, 2008; Stroik, 2009).

3.1 EPP-movement inside PPs

PPs that take genitive argument inflect with ϕ -features of its argument (a) (Vainikka, 1989; Manninen, 2003). In this case, there is EPP-movement to the specifier of P (Brattico, 2010a).

- (24)
- a. minun kanssa-ni
I.GEN with-Px/1SG
'with me'
 - b. *kanssa-ni minun
with-Px/1SG I.GEN



Certain prepositions display both strategies: partitive case together with A-bar movement (a) and genitive case together with A-movement (b).

- (26)
- a. lähellä minua / minua lähellä
close I.PAR I.PAR close
'close to me'
 - b. minun lähelläni
I.GEN close.Px/3SG
'close to me'
 - c. *lähelläni minun
close.Px/3SG he.GEN

These PPs are synonymous and share the same syntactic distribution. The presence of a Focus head cannot be motivated in the case of A-movement to the specifier of P.

3.2 Snowballing *wh*-movement in Finnish

- Edge generalization for pied-piping (Heck, 2004, 2008)
- Recursive pied-piping from the edge
- Internal *wh*-movement shows intervention and island effects, as well as changes in quantifier interpretation (Huhmarniemi, 2009b).
- A phrase is a snowball domain if and only if it is adjoinable (Brattico, 2010b)
- secondary movement = primary movement?

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