

The locality of snowballing *wh*-movement in Finnish

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Finnish exhibits a general mechanism of internal *wh*-movement and recursive pied-piping inside content questions, embedded questions and relative clauses. For example, in sentence (1a), the *wh*-DP has moved to the edge of the containing DP, which has been pied-piped to the edge of the infinitival complement clause. The infinitival clause is further pied-piped to the front of the sentence. The unmarked word order of the sentence (a) is given in (b).

- (1) a. [[DP [DP *Mihin maahan*] *matkustamista t*] *suunnittelemassa t*] *Pekka vietti*
 which.to country.to traveling.PAR planning Pekka stayed
 koko illan?
 whole night
 ‘Traveling to which country did Pekka stay planning whole night?’
 b. *Pekka vietti koko illan suunnittelemassa matkustamista Intiaan.*
 Pekka stayed whole night planning traveling.PAR India.to
 ‘Pekka stayed whole night planning to travel to India.’

The internal *wh*-movement thus targets the specifier of a c-commanding head Y, and pied-pipes YP to the next specifier. The pied-piped phrase forms a ‘roll-up’ structure, and may thus be considered as an instance of snowballing movement. The snowballing *wh*-movement takes place in different types of phrases in Finnish, such as PPs, DPs, APs, infinitival adjunct clauses, and participial phrases. In addition, certain infinitival complement clauses, such as (1a) show optional internal movement and pied-piping, since it is also possible to extract the DP-complement out of the infinitival clause. We call the phrases that allow internal *wh*-movement and pied-piping *snowballing domains*.

Finnish snowballing *wh*-movement is very local operation, which poses a potential problem for the theory of anti-locality (Grohmann, 2000; Abels, 2003, among others). According to anti-locality, the head H cannot probe movement of its direct complement to the specifier of HP. Consider for example the *wh*-movement inside prepositional phrases, such as (2a). The preposition *ennen* assigns partitive case to its complement DP (Vainikka, 1993), and the DP undergoes internal *wh*-movement to the edge of the PP in both content questions and relative clauses (2b-c).

- (2) a. [PP *ennen* [DP *tätä onnettomuutta*]]
 before this accident
 ‘before this accident’
 b. [PP [DP *mitä onnettomuutta*] *ennen t*]
 which.PAR accident.PAR before
 ‘before which accident’
 c. *onnettomuus*, [PP *jota ennen t*]
 accident.NOM which.PAR before

One option to avoid the anti-locality violation is to assume an independently motivated

functional projection on the top of each snowballing domain, following the cartography approach by Cinque (2002); Rizzi (2004). However, this alternative is rejected for the following reasons: First, the internal *wh*-movement takes place in different types of phrases and optionally in many complement domains as well. The relevant functional projection would thus have to be assumed inside a wide variety of phrases. Second, the internal *wh*-movement may be blocked by elements that cannot be directly associated with any discourse-configurational motivation, such as adverbial modifiers and the presence of an overt subject inside certain infinitival clauses. Third, the postulation of the additional layers in the absence of snowballing would lead to the massive generation of unfilled positions. On the other hand, if the functional heads are only projected in the presence of a *wh*-phrase, the system necessarily faces a lookahead problem. In fact, 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).

One alternative to avoid the anti-locality violation would be to assume that the snowballing *wh*-movement does not result to feature checking between the head H and *wh*-phrase on the edge of the HP. In other words, adopting some form of goal-driven movement proposed among others by Stroik (2009), it would be possible to avoid a situation where a head H would act as a probe for the movement of its direct complement.

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