

SubMove: Towards A Unified Account of Scrambling and D-Linking

Cedric Boeckx and Kleanthes K. Grohmann

In this paper we suggest a parallelism between D-linked Wh-phrases and long-distance scrambled elements, and argue for a specific syntactic step operative in both constructions. The parallelism resides in similar behavior of the two constructions with respect to Superiority, discourse effects, semantic vacuity, islands, and clitic doubling. We suggest that this parallelism can provide insight into the nature of both scrambling and D-linking. Our proposal views D-linking and scrambling as not related to agreement-checking, but as taking place purely for discourse purposes expressed in the left periphery of the clause. The absence of agreement-checking in the C-domain enables us to understand the ‘peripheral’ properties of these two seemingly unrelated constructions. Both target a position inside the C-domain without operator behaviour. The justification for two distinct projections comes from the necessity to motivate movement on the one hand, and the unavailability of the usual phi-features/agreement relations connected to movement on the other.

1 Introduction

This paper explores a largely ignored, but we believe highly revealing, parallel behavior between D-linked Wh-phrases and scrambled elements (in particular long-distance scrambling as found in Japanese). The reasons we believe this parallelism can provide insight into the nature of both scrambling and D-linking are the following. Firstly, neither movement of D-linked Wh-phrases nor long-distance scrambling obey the Superiority Condition. Secondly, both operations carry obvious discourse effects. Thirdly, both have been argued to be semantically vacuous. Fourthly, both D-linked Wh-phrases and scrambled elements are not obviously sensitive to island effects. Finally, D-linked Wh-phrases are accompanied by clitic doubling in some languages, something that has also been noted for scrambling.

We would like to claim that the parallel behavior just noted is the result of a similar process: the absence of phi-feature checking by the relevant moving element. If D-linked Wh-phrases move at all, it is for clause-typing or topicalization purposes, much like it is possible to front associates of expletives. We would also like to argue that viewing D-linked Wh-phrases as sitting in a different position, plausibly a topic projection, is the result of the absence of phi-feature checking. Such Wh-phrases have recently been argued to target TopP, within a more articulate Comp-domain à la Rizzi (1997). The obvious relation to topic rather than a focus/operator position can also be seen in instances of Chinese Wh-fronting. Essentially the same operation takes scrambled elements out of their phi-feature checking clause into a higher, non-agreement-related (topic) position.

The role of agreement-checking or absence thereof in the C-domain enables us to understand the ‘peripheral’ properties of two seemingly unrelated constructions: (long-distance) scrambling and D-linked Wh-fronting. Both target—when moved—a position inside the C-domain without operator behaviour. The justification for two distinct projections, at least a Topic Phrase, comes from the necessity to motivate movement on the one hand, and the unavailability of the usual phi-features/agreement relations connected to movement on the other.

2 D-Linking and Scrambling

We will begin with a presentation of the basic facts relevant to the two phenomena at hand. We concentrate on those properties of long-distance scrambling (henceforth, LDS¹) and D(iscourse)-linked Wh-constructions (DWH) that both seem to share. This tentative formulation is not intended to cast doubt over their similar behaviour. Rather it reflects the fact that LDS and DWH have not yet been compared in this systematic fashion, although each of the properties we present is a well-known individual characteristic of these phenomena, as found in the literature. In other words, this section puts together old facts in a new way.

2.1 Superiority Violations

Arguably the first property that comes to mind when one talks about DWH is that across languages, D-linked Wh-phrases differ from non-D-linked ones in not being subject to the Superiority Condition (Chomsky 1973), as the noticeable contrast between the a- and b-examples in (1) and (2) shows. To put it bluntly, an originally lower situated Wh-phrase (here, boldfaced) may not be moved over a higher one, unless both are D-linked.

- (1) a. Who read **what**?
b. * **What** did who read *t* ?
- (2) a. Which man read **which book**?
b. **Which book** did which man read *t* ?

¹ The characteristics we present, and compare to D-linking, can best be seen with long-distance scrambling. Whether, and if so how, our proposal extends to other types of scrambling remains to be seen. As we will see, the for us crucial step in LDS is the (final) movement, the extraction out of the embedded clause, where its agreement features are licensed, into the matrix clause, a step absent in short distance scrambling.

We will not be concerned with the particular properties of this contrast and the Superiority Condition in general. What is more interesting from the present perspective is that scrambled elements in LDS constructions do not obey Superiority either.

- (3) a. **John-ni_k** sono hon-o_i Bill-ga [Mary-ga t_i t_k [watasita] to] itta (koto).
 b. Sono hon-o_i **John-ni_k** Bill-ga [Mary-ga t_i t_k [watasita] to] itta (koto).
that book-ACC John-DAT Bill-NOM Mary-NOM handed that said (fact)
 ‘Bill said that Mary handed that book to John.’

As the examples in (3) show, the two object XPs *John-ni* and *sono hon-o* can be extracted in either order from the embedded clause into a peripheral position of the matrix clause.

Now, the standard implementation of the Superiority Condition is very close to Chomsky’s original observation that no element may move across another element of the same type from the same clause, namely in terms of Shortest Move (Chomsky 1993) or Minimal Link Condition (Chomsky 1995): the higher Wh-phrase is closer to the (possibly, attracting) landing site, such as SpecCP, than any lower Wh-phrase. This is very reminiscent of Relativized Minimality (Rizzi 1990), but much work, also across languages, has shown that strict Superiority only applies to Wh-phrases. That is, (multiple) topics or focused elements of sorts are generally not subject to Superiority.

Pre-theoretically, we can already hold fast to one generalization: some derivational operation in both constructions must make the final movement of D-linked Wh-phrases and LDSed elements different from “standard” A’-/Wh-movement. In this sense, D-linked Wh-phrases might taken to be something else on top of interrogative. Scrambled phrases cannot be interrogative in the first place, of course. We will develop an account that employs recent characterizations of both D-linked Wh-phrases and LDSed elements in terms of discourse-affected topic-like elements. We will get a clearer handle on what is at stake in the next section.

2.2 Discourse Effects

Another property common to LDS and DWH is as well known and obvious as it is still ill understood and difficult to integrate in a formal system, despite numerous attempts. The D-part of D-linking suggests that the use of such phrases is discourse-conditioned. And indeed, it is not hard to see how *which man* relies more heavily on some previously established part of the discourse than a simple *who*. For one, only the latter can be asked in an out-of-the-blue context, such as (4):

- (4) A: John bought something expensive yesterday.
 B: What did he buy?
 B': #Which car did he buy?

Let us call this the “discourse effect” of DWH constructions. Again, an exact formalization of this property—how the syntax, semantics and pragmatics interact in a well-defined model—is beyond the scope of the present discussion. What is interesting to note is that “some discourse effect” (such as presuppositionality, referentiality or topichood) can also be detected in the case of scrambling. The particular discourse effects are notoriously hard to pinpoint, especially in the case of LDS. Nevertheless, it has repeatedly been noted in the recent literature that some focusing is involved in LDS (see Miyagawa 1997, Kidwai 1999, Stjepanović 1999). Niinuma (2000) applies various tests to show that the focusing involved in LDS in Japanese is contrastive. In other words, by resorting to LDS, speakers refer to previous discourse entities. There is a sense in which LDS is linked to previous discourse information, as are questions involving D-linked Wh-phrases. Again, we stress that a precise formulation of the factors involved lies beyond the scope of the present contribution.² All we want to emphasize is the special character of the two constructions we have chosen to relate.

2.3 Semantic Vacuity

Further, beyond entailing yet to be defined discourse effects, LDS and DWH exhibit reconstruction effects that we feel are similar. These effects indicate that the final landing site of the moved element is not relevant for interpretation: the LDSed or D-linked Wh-element is semantically vacuous.

It has become a defining property of LDS that it is subject to radical reconstruction effects (see Saito 1989, 1992). A particularly clear illustration of this property is given in (5).

- (5) [Daremo-ni]_i dareka-ga [Mary-ga *t_i* atta to] omotteiru.
everyone-DAT someone-NOM Mary-NOM met that thinks
 = for some *x*, *x* a person, *x* thinks that for every *y*, *y* a person, Mary met *y*
 ≠ for every *y*, *y* a person, there is some *x*, *x* a person, such that *x* thinks that Mary met *y*

² Again, we will not indulge in a discussion of types of topic and focus, or how “contrastiveness” applies to either. While topic and focus are generally held to be two exclusive properties of an item (viz. “old” vs. “new” information), contrastiveness brings in an angle which allows for a description in terms of previous discourse. (Note that what has been called “contrastive topic” and what has been called “contrastive focus” might very well be one and the same thing; see discussion and references in the relevant literature, such as É. Kiss (1998) and the works cited. For the relevance to (D-linked) Wh-phrases, see especially Grohmann (1998, 2003a).)

As the example in (5) shows, LDSed quantifiers necessarily reconstruct. That is, they cannot take scope over material they dominate as a result of scrambling. The interpretation site is thus the original point of extraction within their original clause. This type of reconstruction is, however, different in nature from standard instances of reconstruction, which often take place for binding purposes, viz. quantifier reconstruction in Weak Crossover configurations etc. The presuppositional character or discourse effect of LDSed elements is not compatible with the presence of an A'-operator. We will return to this in section 4.

Interestingly, Rullmann and Beck (1998) have provided compelling evidence for a similar instance of radical reconstruction in the realm of D-linked Wh-phrases. Rullmann and Beck argue that in order to capture the way presupposition projects in interrogatives involving D-linked Wh-phrases (a matter too complex to go into here), the latter must undergo radical reconstruction. Put differently, the input for semantic interpretation must be as if Wh-movement had not taken place. A syntactic analysis should thus capture both (optional) movement of the D-linked Wh-phrase and (obligatory) in-situ interpretation.

2.4 *Island Insensitivity*

One of the more robust locality conditions on movement is the blocking effect induced by islands. Another indication that D-linked Wh-phrases might undergo a different derivation from simple Wh-phrases is that the former can span across certain islands that the latter cannot. For illustration, take the following example of a dependency across a Wh-island (marked in boldface):

- (6) a. * Who did John wonder **whether** Mary loved *t* ?
b. ? Which man did John wonder **whether** Mary loved *t* ?

Whatever the details, the operation that moves *which man* in (6b) out of the embedded clause across an island boundary cannot be subject to the same strict locality conditions that regular A'-movement is.

It turns out that Japanese LDS can also cross an island.

- (7) ? Sono hon-o John-ga [Mary-ga *t* yonda **ka dooka**] siritagatteiru.
 that book-ACC John-NOM Mary-NOM read whether wants.to.know
 ‘That book, John wants to know whether Mary read [it].’

Although it is not the case that all island effects disappear in instances of D-linked Wh-fronting and LDS, it is generally agreed that there is a substantial improvement in such cases. This is all we will be concerned with here.

This state of affairs implies that the type of movement that takes the D-linked Wh-phrase or scrambled element beyond the island boundary must be of a different nature from standard operator-driven movements, such as focalization and Wh-movement, which are very island-sensitive. We will suggest a variant of non-operator-driven topicalization in section 4.

2.5 Clitic Doubling

The final characteristic shared by both LDS and DWH, which we want to discuss here, regards doubling of the relevant element with a clitic. Sportiche (1992) already captured the connection between LDS and (short-distance) scrambling formally, by making the two constructions follow from his Clitic/Voice Phrase analysis. Alexiadou and Anagnostopoulou (1997) and Kallulli (1998, 1999) present empirical evidence for the connection by noting that in Greek (and Albanian) scrambling of internal elements is necessarily tied to the presence of a doubling clitic.

- (8) a. *O skilos tis_i akoluthise [tin kathe gineka]_i pandu.
 b. O skilos tis_i **tin** akoluthise [tin kathe gineka]_i pandu.
the dog her CL followed the every woman everywhere
 ‘Her dog followed every woman everywhere.’

Gill and Tsoulas (this volume) further argue that a resumptive structure underlies instances of LDS in Korean. If, as we will argue below (following Boeckx 2001a, 2003), resumption is an instance of doubling, LDS also involves doubling (Boeckx, in press).

Remarkably, there is a correlation between DWH and clitic doubling. Dobrovie-Sorin (1990) notes that Rumanian D-linked Wh-phrases are obligatorily doubled by a clitic, as the contrast in (9) shows.³

- (9) a. *Pe care (baiat) ai vazut?
 PE which boy have seen
 ‘Which one (/which boy) did you see?’

³ To control for the relevance of this point, clitic doubling is not permitted in Rumanian non-D-linked Wh-questions. (The particle *pe* occurs only in DWH for reasons that do not concern us here.)

- (i) a. Cine ai vazut?
who have seen
 ‘Who did you see?’
 b. *Cine I-ai vazut?

- b. Pe care (baiat) I-ai vazut?
PE which boy CL-have seen
‘Which one (/which boy) did you see?’

A somewhat similar effect can be detected in Hebrew:

- (10) a. ***Mi** nifgaSta ito?
who you.met with-CL
‘Who did you meet with?’
b. **Eyze student** nifgaSta ito?
which student you.met with-CL
‘Which student did you meet with?’

As originally noted by Doron (1982), resumptive pronouns are only allowed with DWH (see also Sharvit 1999). Again, if Boeckx (2001a, 2003) is correct in taking resumptive strategies to be instances of doubling (more on this below),⁴ we can conclude that clitic doubling is found with DWH in Hebrew.

Interestingly, Rochemont and Saxon (1993) provide instances of long-distance questions in Slave whose properties are strongly reminiscent of LDS. In particular, arguments, but not adjuncts, can move (see also Basilico 1998, Denham 2000). (True adjuncts cannot undergo LDS in general.) Crucially, when long-distance Wh-movement takes place, a resumptive pronoun (*ye*) shows up in the extraction site, as shown in (11) and (12), which are taken from Basilico (1998:307).

- (11) a. ?ayli netá [t yéhk'é] kenéhdzá
what 2SG.father 3.shot.4 3.tried
‘What did your father try to shoot?’
b. yeri bedare [t ráyeyéhdí] ?ayilá
what 3.sister 3.bought.4 3.caused.4
‘What did his older sister let him buy?’

⁴ Note that this does not need to extend to all types of resumption. Boeckx (2001a) is concerned with those types of resumption that have traditionally been analyzed in terms of base-generation because of inadequate tools to integrate a movement analysis, namely the so-called “intrusive” resumptives (cf. Ross 1967, Sells 1983). These are the type of resumptives considered here. The second author suggests independently to link other types of resumption to spelling out non-distinct copies in a very restricted fashion; this concerns the classic type of resumptive pronoun found in movement-derived types of left dislocation as found in German or Italian (cf. Cinque 1977, van Riemsdijk and Zwarts 1974), for example (see Grohmann 1997, 2000, 2003b). We believe that the two approaches are neither exclusive nor incompatible, as Boeckx (2001a) also notes.

- (12) a. * ?ode netá [nimbaa t enaih?a] kenéhdzá?
 where 2SG.father tent 3.pitch 3.tried
 ‘Where did your father try to pitch the tent?’
- b. * wodo sé moot’ike [t neté] ?agihthe?
 when FOC 3.people.PL 3.lie 3PL.cause.4
 ‘When do his parents make him go to bed?’

The fact just noted is reminiscent of Gill and Tsoulas’ claim mentioned above that resumption underlies LDS. At a more general level, we note that resumptives are restricted to arguments (see Chomsky 1982, Koster 1987, Cinque 1990, among many others). Likewise, as already noted, arguments, but not (true) adjuncts, can undergo LDS. Thus, the fronted adverb *inn* (13c) can only modify the matrix clause.⁵

- (13) a. John-ga [Mary-ga isoide ano ringo-o tabeta to] itta.
 John-NOM Mary-NOM quickly that apple-ACC ate that said
 ‘John said that Mary quickly ate that apple.’
- b. Ano ringo-o John-ga [Mary-ga isoide tabeta to] itta.
 that apple-ACC John-NOM Mary-NOM quickly ate that said
 ‘John said that Mary quickly ate that apple.’
- c. Isoide John-ga [Mary-ga ano ringo-o tabeta to] itta.
 quickly John-NOM Mary-NOM that apple-ACC ate that said
 ‘*John said that Mary quickly ate that apple.’
 ‘John said quickly that Mary ate that apple.’

And, similarly, it appears that only arguments, but not true adjuncts may be D-linked (a claim made in Rullmann 1995, among others).⁶

In sum, we have seen four instances where scrambling and D-linking seem to behave very much alike: absence of Superiority effects, a clear discourse effect, semantic vacuity, island insensitivity, and clitic doubling. In the remaining sections, we will present possible approaches to capture the similarities and consider whether we can find a unifying property that could allow for a common underlying derivation of the two phenomena under investigation. As briefly mentioned, a finer articulated phrase structure of both the clause and the phrases under investigation might lend itself to a natural unified analysis.

⁵ For expository purposes, we render the scrambled Japanese structures as non-scrambled orders in English.

⁶ Note that for this claim to go through, elements like *in which way/for which reason* cannot be treated as genuine adjuncts, a claim recently supported in Tsai (1999).

3 Candidates for an Analysis

As mentioned throughout, the properties of DWH and LDS we briefly presented are by no means novel, and neither is the attempt to reduce them to independently motivated properties of the grammar and thus yield a natural account for why D-linked Wh-phrases differ from non-D-linked ones and scrambled elements from non-scrambled ones. However, so far no one has attempted to offer an account that would relate LDS and DWH that would set them aside from other elements/movement types. In this section we go over one relevant recent line of reasoning and point out its limitations, which we think preclude unification.

3.1 *Agree vs. Move*

Pesetsky (2000) suggests that the different behavior between D- and non-D-linked Wh-phrases boils down to a difference in licensing conditions. Take the classic contrast in Bulgarian, a language where Wh-elements obligatorily all front to the left periphery (Rudin 1988).

- (14) a. Ko **koga** voli?
 who whomloves
 ‘Who loves whom?’
 b. *Ko voli **koga**?

This multiple fronting is obligatory with simple Wh-phrases. Interestingly, if the two Wh-elements are D-linked, the lower Wh-phrase may move, but it may also optionally stay in situ:

- (15) a. Koj chovek **koja kniga** e kupil?
 which man which book is bought
 ‘Which man bought which book?’
 b. Koj chovek e kupil **koja kniga**?

Pesetsky’s proposal to capture this contrast is to take the notion of Agree (Chomsky 2000), and its distinction from Move, seriously. Put in very rough terms, the operation Agree can license a lexical item in the phrase marker without moving it, i.e. under a well-defined set of conditions, features may be checked over a longer distance than the usual specifier-head configuration. Applying this to the current set of data, Pesetsky proposes that Agree is enough to license D-linked Wh-phrases, while Move must also apply to simple Wh-elements (regardless of whether Agree can take place, possibly in addition to).

Thus, (14b) is ungrammatical because the lower Wh-phrase fails to Move; Agree is not enough. In turn, both variants in (15) are well-formed, under the assumption that even D-linked Wh-phrases may optionally undergo movement. The main point is, though, that the D-linked one does not have to Move; Agree suffices.

If this line of reasoning were correct for DWH-constructions, it should also be applied to LDS, given what we have seen so far. The obvious fitting point is that scrambling is generally known to be an optional operation: the structure would be just as well-formed if movement had not taken place. However, if movement does not take place, the discourse effect that can be observed with scrambling would not follow as obviously. But there are additional reasons why an Agree-account to LDS does not seem to cut the pie the right way.

3.2 Pure Move

In fact, the Agree vs. Move explanation seems to us to be difficult to extend to scrambling. On the one hand, movement of D-linked is not optional across all languages; something else would have to be said to incorporate an Agree-based analysis. On the other hand, it is well-established in the Japanese literature that scrambling is actually tied to the absence of agreement (viz. phi-features; see Kuroda 1988, Fukui 1993). Naturally, this seems to go against the claim that Agree suffices, as claimed for DWH

As a matter of fact, Kitahara (2002) has suggested that scrambling has peculiar properties precisely because that instance of Move that derives the surface position of the scrambled element is devoid of (any form of) Agree. Put differently, scrambling, according to Kitahara, is an instance of Pure Move. The absence of Agree is meant to account for the absence of Superiority, which recent analyses take to be the result of closest Attract/Agree (cf. Bošković 1998). The absence of Agree would easily account for the absence of island effects, if Agree underlies “barrierhood,” as recently argued in Boeckx (2001a, 2003). The absence of Agree may also account for radical reconstruction effects, if agreement is what “traps” the moving element in its derived position (see Boeckx 2001b), as well as the “discourse effect.” In this sense, a Pure Merge approach has the advantage of easily accounting for four of the five properties that, as we argue, LDS and DWH share.

The only recalcitrant fact under the Pure Move analysis would be the correlation we found above between DWH/LDS and (clitic) doubling. If movement of the relevant element is driven by Pure Merge, there is no systematic reason why it should be doubled by a clitic in some instances. In addition, it is not clear to us how Pure Move is to be instantiated formally. Eliminating the Agree step from the Move operation amounts to making Move a primitive of the grammar, a result which goes against recent attempts to decompose Move (see e.g. Nunes 1995, 2003 and Hornstein 2001 on explicitly viewing Move as Copy and Merge).

3.3 Pure Merge

The Pure Move analysis shares many properties with another recent proposal made to capture the odd properties of scrambling, and which we may call Pure Merge. According to the latter, scrambled elements are base-generated in their surface position (see Bošković and Takahashi 1998). In the covert component, scrambled elements lower into their theta-positions to ensure Full Interpretation. Such an analysis is able to capture the absence of Superiority and of island effects, as these are analyzed in terms of Attract (‘upward’ movement), to which lowering is immune. The proposal is also able to capture radical reconstruction effects, as lowering is forced. The discourse effect could also be the result of merging for non-agreement purposes. But much as the account in terms of Pure Move, the Pure Merge line of reasoning suffers from the fact that the correlation with doubling appears mysterious, and further, a technical implementation appears difficult within current theorizing, which has no natural place for lowering and a distinct LF component.

In sum, we have briefly considered three approaches to DWH/LDS: an Agree vs. Move approach, a Pure Move approach, and a Pure Merge approach. The first does not easily lend itself to LDS. The second and the third captures some properties we have identified as common to both DWH and LDS, but fail to capture one crucial property, and furthermore appear to be difficult to implement in a restrictive theory of syntax. For these reasons, we turn to an alternative.

4 SubMove

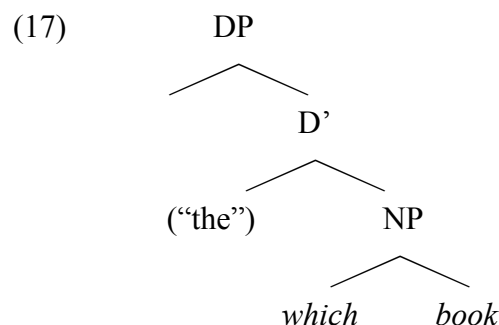
The alternative we would like to propose is an extension of Boeckx’s (2001a) analysis of resumptive strategies. The central thesis of the analysis is that resumption is the result of stranding which can take place under A-bar movement. Following Sportichian lines, a resumptive chain is the result of a derivation like (16), whereby the ‘antecedent’ of the resumptive pronoun (‘D’ in (16))⁷ starts off as a complement position of D, and moves to its final landing site. The particular derivational step relevant for us we want to call SubMove, as illustrated in (16), which we will elaborate on in the remainder of this paper:

$$(16) \text{ } [_{CP} \text{ Wh}_i \text{ } [_{\dots} [_{VP} \text{ } \dots [_{DP} \text{ } t_i \text{ } '[_{D} \text{ } t_i]]]]]]$$

⁷ We follow Postal (1969) and much subsequent work in regarding pronouns and determiners as one and the same ‘D’-element. We assume that the morphological component spells out a D as *the* if its complement is non-null, but as a pronoun otherwise. As Postal’s insight has received strong support and wide acceptance over the years, we do not feel compelled to justify it here, although the analysis of RPs developed in the following sections may be regarded as yet another argument for treating pronouns and determiners as identical.

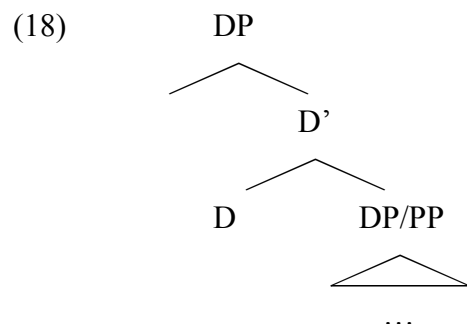
Several interesting aspects of the proposal are worth mentioning in the present context. First, the structure in (16), if supplemented with the assumption that only arguments are headed by a D-projection, readily accounts for the general absence of (true) ‘adverbial’ resumptives.⁸ This seems to us to be a reasonable extension of Longobardi (1994).

Second, the underlying structure of an antecedent/resumptive pronoun—i.e. the structure [D [WH]]—bears striking resemblance to the structure Rullmann and Beck (1998) to D-linked Wh-phrases:



According to Rullmann and Beck, D-linked Wh-phrases are headed by the null counterpart of the definite determiner, which accounts for the more definite/specific character of D-linked interrogative words, and for how presupposition works in such cases.

The structure in (16) also bears obvious similarity with the structure assigned to clitic-doubling structures by Torrego (1988), Uriagereka (1988, 1995). As Belletti (1999) and Cecchetto (2000) argue, the doubling element actually starts off in complement position. The relevant structure is thus (18), being virtually identical to (17):



Another relevant aspect of this analysis is that it captures the generalization that cross-linguistically, an uninflected complementizer (of the English *that*-type) appears when a resumptive pronoun is used. (Examples are from Polish, thanks to Adam Szczegielniak, p.c.)

⁸ This is another argument in favour of splitting resumptive strategies (see also fn. 4). It is a well-known fact that many languages allow resuming a left-dislocated adverbial, such as clitic left dislocation in Italian or so-called “contrastive” left dislocation as found in German (see Cinque 1990, Grohmann 1997 and cited literature).

- (19) a. chłopiec, **co** go widziałem poszedł do domu.
boy that him saw.I.MASC went to home
'The boy that I saw went home.'
- b. *chłopiec, **którego** go widziałem poszedł do domu.
boy who him saw.I.MASC went to home
'The boy who I saw went home.'

Boeckx takes this generalization to follow from the fact that by stranding the phi-feature bearing element ('D'), the moving element becomes incapable of triggering agreement.⁹ This is the main feature of SubMove: a constituent may extract from a larger functional shell, leaving the head (overt or covert) behind, and move for non-agreement-related purposes. What we would like to propose is that a resumptive (stranding) structure underlies DWH/LDS, and the relevant movement is of the type SubMove. Once this hypothesis is adopted, all the properties noted above follow at once.

The correlation we observe with doubling is now clear: a doubling structure underlies a resumptive chain to begin with. Island insensitivity being a landmark of resumption (of the type considered here; cf. fn. 4), it is not surprising to find it in cases of LDS/DWH. That LDS/DWH are not subject to the Superiority Condition follows from the fact that once embedded in a doubling structure, neither attractee c-commands the other: both are equally close from the target. That both LDS and DWH are subject to radical reconstruction follows from the fact that the D-head is stranded in both cases. Interestingly, Mamoru Saito (p.c.) has argued in unpublished work that only the head of the scrambled phrase undergoes reconstruction, which under our approach, follows without actual reconstruction: for all purposes, the stranded D-head behaves as unmoved material. Likewise, the stranded D-head analysis will be able to account for the way presupposition projects in DWH. Recall that Rullmann and Beck (1998) forced reconstruction to account for why D-linked Wh-phrases behave as if they had not moved. The fact that the presupposition-bearing element (the D-head) is stranded readily accounts for this generalization, again without actual reconstruction. Finally, the special discourse effect of both LDS and DWH may well follow from the presence of a doubling structure. As is well-known, the presence of a D-head entails presupposition of existence, which may underlie discourse-linking/contrastiveness, once these are properly formulated.

The next question concerns a more practical point of technical implementation, namely identification of the positions involved in the derivational history of both LDS and DWH. Turning to the latter first, it has been noted that D-linked Wh-elements bear a topic-like character, which, in turn, has been explicitly cashed in by Grohmann (1998, 2003a) (see also

⁹ For a somewhat more adequate formulation, see Boeckx (2001a, 2003).

Rizzi 2001, den Dikken and Giannakidou 2002). In the light of recent expansions of the Comp-system into a layer of functional projections responsible for topics, foci and the like (cf. Rizzi 1997; see fn. 11 below), we might want to identify this position as Top(ic)P. Let us see how an implementation of all this could look like.

(Non-D-linked) Wh-elements are inherently focused operators. As such, a natural locus in clause structure, following Rizzi's and related work, could be Foc(usP).¹⁰ We could thus imagine the following derivational history for simple Wh-questions (unnecessary details left aside):

(20) [_{FocP} who_i did [_{IP} you see *t_i*]]

If D-linking moves the Wh-expression to license its interrogative nature and then does something additional to express the topic-like nature, we could apply the following derivation to such structures (integrating the SubMove analysis, regardless of the exact position of *do*):¹¹

(21) [_{TopP} [which man]_i [_{FocP} (*t_i*) did [_{IP} you see [_{DP} *t_i*] [D *t_i*]]]]]

In other words, our proposal extracts the D-linked Wh-part out of a more complex DP-structure vis-à-vis SubMove, stranding the (empty) D-head. This element moves to the interrogative licensing position and then moves on (without the need to check phi-features, possibly as Pure Move) to a topic position. The different landing site (i.e. TopP rather than FocP) is motivated syntactically, for reasons that go beyond the scope of this paper; see, for example, Grohmann (1998, 2003a), Rizzi (2001), den Dikken and Giannakidou (2002). This position is also the starting point for why (certain) islands might be circumvented, as can be seen with topicalized material in general. By identifying a position within an articulated Comp-system as the final landing site, we immediately express the discourse-related character of D-linked and scrambled expressions; the left periphery of the clause is the traditional part of the derivation responsible for such concepts. The semantic vacuity of D-linked elements noted by Rullmann and Beck follows from stranding the D-head, viz. radical reconstruction in the sense outlined in section 2.2 above. Clitic doubling (in some languages) follows straightforwardly, namely if the D-head left behind is not empty but filled by a

¹⁰ Rizzi (1997) suggests the ordering ForceP – TopP* – FocP – TopP* – Fin(ite)P for the CP-layer. This has been adopted, modified and extended in much recent (cross-linguistic) work; cf. Grohmann (1998, 2000, 2003a), Poletto (2000), Puskás (2000), among many others.

¹¹ We parenthesize the potential trace for reasons that are not relevant here. See Grohmann (2000, 2003a) for arguments why movement from FocP to TopP might have to be ruled out in this case, and all movement that is “too local” categorically. The issue has little bearing on our proposal.

pronominal element (see also fn.7). Lastly, Superiority is not at stake with more than one D-linked Wh-phrase: the relevant point of movement is the particular site of extraction from DP, namely SpecDP, and none of the Wh-phrases are in competition. We can illustrate the relevant point in the derivation as follows:

(22) [_{FocP} \square Foc [_{IP} [_{DP} \square [D which man]] buy [_{DP} \square [D which book]]]]

\square the specifier of FocP (the pre-final landing site relevant for computing Superiority, which only applies to Wh-elements; cf. section 2.1), may attract either \square or \square . These are the potential launching sites for either D-linked Wh-element and neither blocks the other because they are not in the same command path.

There is another reason to assume certain Wh-elements to fill the topic position in the left periphery of the clause. The argument comes from Wh-in situ languages that allow for (apparently) optional Wh-fronting. One good example is so-called “Wh-topicalization” in Chinese, as Wu (1999) shows (see also Tang 1988). Another is the formation of conjoined questions in Chinese (and Korean), as discussed by Cho and Zhou (1999).

Turning to the latter first,¹² a conjoined Wh-question with the Wh-phrases in situ cannot be interpreted in an across-the-board fashion. (23) illustrates this fact from Chinese:

(23) Zhangsan xihuan shenme ren Lisi taoyan shenmo ren?
Zhangsan like which person Lisi hate which person
 ‘Which person does Zhangsan like and which person does Lisi hate?’
 = which person x, Zhangsan likes x and which person y, Lisi hates y
 ≠ which person x, Zhangsan likes x and Lisi hates x

To get an ATB-reading, a Wh-phrase has to undergo obligatory fronting, in which case the possible interpretations reverse:

(24) Shenmo ren Zhangsan xihuan Lisi taoyan?
which person Zhangsan like Lisi hate
 ‘Which person does Zhangsan like and Lisi hate?’
 ≠ which person x, Zhangsan likes x and which person y, Lisi hates y
 = which person x, Zhangsan likes x and Lisi hates x

¹² The following data and discussion are taken from Citko and Grohmann’s (2000) interpretation of the works by Cho and Zhou (1999) and Wu (1999), respectively, within a framework compatible with the current line of reasoning; see also Grohmann (1998, 2003a).

This state of affairs raises the question how the lack of ATB-readings in Wh-in-situ conjoined questions can be accounted for. Any answer to this question certainly has to have an answer for how we can reconcile the obligatory fronting of WH's in conjoined questions with ATB-interpretation with the general lack of overt Wh-movement in these languages.

If we analyse such instances of fronting of Wh-phrases in traditional in-situ languages as instances of “Wh-topicalization,” we get a handle on all of the above:

(25) [_{TopP} Shenmo ren [_{TP} Zhangsan xuan *t* Lisi taoyan *t*]]]

A Wh-movement analysis in terms of ATB-movement, as in (25), trivially explains why the ATB-reading is only available to conjoined question with fronted Wh-phrases. Moreover, by understanding the fronting process to take place for reasons other than checking of a Wh-feature, it also readily accounts for the compatibility problem: it is not the case that Wh-phrases may or may not move; they stay in situ for all (interrogative) purposes, but may undergo movement if a discourse effect can be obtained. In this case, the effect is an additional reading. (Note that the two readings go unambiguously with two different structures.)

Another instance of a discourse effect is more common “Wh-topicalization” as it occurs in simple questions in Chinese. This type of fronting also differs from Wh-movement proper (as found in English) in a number of respects (Tang 1988, Wu 1999). This is good news, as we would otherwise face the compatibility problem again.

(26) offers an example of a fronted Wh-question, as well as a regular Wh-in situ question:

- (26) a. Zhangsan mai-le **shenme**?
 Zhangsan buy-ASP what
 ‘What did Zhangsan buy?’
 b. **Shenme** Zhangsan mai-le?

Wu is very careful to put the felicity of fronted Wh-questions into a discourse context and tease the use of Wh-in situ and -fronting apart. He shows clearly that the fronted Wh-question (26b) can only be employed if both speaker and hearer know that Zhangsan went shopping and that he bought items from a list whose existence speaker and hearer know of.

Apart from such arguments, we would expect fronted Wh-phrases to behave differently if they are indeed topics, rather than optionally Wh-moved elements. As Wu shows, Wh-topicalization does not induce a Weak Crossover effect, one of the standard arguments to test for operator-movement. (The subscripts indicate binding.)

- (26) *shei_i ta_i de muqing hen xihuan t?*
who he DE mother very like
'Who does his mother like?'

Furthermore, topicalized Wh-phrases do not undergo scope reconstruction (see also (5) above). That is, in the context of other quantifiers, a fronted Wh-phrase can only be interpreted in its base position:

- (27) a. *Meigeren dou mai-le shenme?*
everyone all buy-ASP what
'What did everyone buy?'
= For every x for which y, x bought y
= For which y, for every x, x bought y
- b. *Shenme meigeren dou mai-le t?*
what everyone all buy-ASP
'What did everyone buy?'
≠ For every x, for which y, x bought y
= For which y, for every x, x bought y

All in all, it appears that an underlying resumptive chain structure of the type proposed in (16), coupled with the technical details of SubMove, captures all the core properties of both DWH and LDS. Note that many analyses of resumption also assume a Pure Merge/base-generation analysis, as do Bošković and Takahashi (1998) for scrambling.

Formally, then, a relation between LDS and resumption had implicitly been made. (It is explicit in Gill and Tsoulas, this volume.) Further, it is interesting to note that the stranding analysis of resumption proposed here shares many properties with the Pure Move approach developed for scrambling by Kitahara (2002). Recall that Pure Move is an instance of Move(ment) devoid of Agree. A stranding analysis comes close to this conclusion by stranding the element carrying agreement features. It is superior to the Pure Move analysis in not requiring any formal modification of current views on movement (see Boeckx 2001a, 2003 for detailed discussion), and furthermore establishes a link between scrambling and doubling, which was mysterious under a Pure Move approach.

We conclude by noting with Mahajan (2000) that many languages that allow LDS lack phonologically overt determiners. It follows that from a stranding analysis of the type we have outlined above, a stranded null D-head will create the impression of a gap. That a gap is not the correct analysis is what we have tried to establish here. It is, however, plausible to assume that once followed through, the present analysis will be able to recapture Hale's

(1983) correlation between free word order and *pro*-elements (in our terms, stranded Ds); see Boeckx (in press) for a detailed elaboration of this point.

5 Conclusion

In sum, we have started by cataloging some properties that are common to both scrambled elements and D-linked Wh-phrases. We briefly considered each in turn: Superiority violations, discourse effects, semantic vacuity, island insensitivity, and clitic doubling. Such properties are not predicted to cluster as they do under current approaches to scrambling and D-linking. In contrast, they follow at once if resumption is taken to underlie both phenomena, and furthermore, if we are willing to take resumption to be the result of stranding under A-bar movement. Our proposal does so by employing an application of SubMove, i.e. extracting material out of a higher (functional) shell for non-agreement-related purposes, stranding the D-head (which may be overtly realized as the resumptive). This extraction targets a position in the left periphery of the clause, the traditional realm for expressing discourse properties relevant here (such as topicality or presuppositionality).

References

- Alexiadou, Artemis and Elena Anagnostopoulou. 1997. Toward a Uniform Account of Scrambling and Clitic Doubling. In Werner Abraham and Elly van Gelderen, eds. *German: Syntactic Problems—Problematic Syntax*. Tübingen: Niemeyer, 143-161.
- Basilico, David. 1998. Wh-Movement in Iraqi Arabic and Slave. *The Linguistic Review* 15, 301-339.
- Belletti, Adriana. 1999. Italian/Romance Clitics: Structure and Derivation. In *Clitics in the Languages of Europe*, ed. H. van Riemsdijk. Berlin: de Gruyter, 543-579.
- Boeckx, Cedric. 2001a. *Mechanisms of Chain Formation*. Doctoral dissertation, University of Connecticut, Storrs.
- Boeckx, Cedric. 2001b. Scope Reconstruction and A-Movement. *Natural Language and Linguistic Theory* 19, 503-548.
- Boeckx, Cedric. 2003. *Islands and Chains*. Amsterdam: John Benjamins
- Boeckx, Cedric. In press. Free Word Order in Minimalist Syntax. *Folia Linguistica*.
- Bošković, Željko. 1998. Multiple Wh-Fronting and Economy of Derivation. In Emily Curtis, James Lyle, and Gabriel Webster, eds. *Proceedings of the 16th West Coast Conference on Formal Linguistics*. Stanford, CA: CSLI Publications, 49-63.
- Bošković, Željko and Daiko Takahashi. 1998. Scrambling and Last Resort. *Linguistic Inquiry* 29, 347-366.
- Cecchetto, Carlo. 2000. Doubling Structures and Reconstruction. *Probus* 12, 93-126.
- Cho, Sungeun and Xuan Zhou. 1999. The Interpretation of Wh-Elements in Conjoined Wh-Questions. Ms., State University of New York, Stony Brook.

- Chomsky, Noam. 1973. Conditions on Transformations. In Stephen R. Anderson and Paul Kiparsky, eds. *A Festschrift for Morris Halle*. New York: Holt, Rinehart and Winston, 232-286.
- Chomsky, Noam. 1982. *Some Concepts and Consequences of the Theory of Government and Binding*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1993. A Minimalist Program for Linguistic Theory. In Kenneth Hale and Samuel Jay Keyser, eds. *The View from Building 20. Essays in Honor of Sylvain Bromberger*. Cambridge, MA: MIT Press, 1-52.
- Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2000. Minimalist Inquiries: The Framework. In Roger Martin, David Michaels and Juan Uriagereka, eds. *Step by Step*. Cambridge, MA: MIT Press, 89-155.
- Chomsky, Noam. 2001. Derivation by Phase. In Michael Kenstowicz, ed. *Ken Hale. A Life in Language*. Cambridge, MA: MIT Press, 1-52.
- Cinque, Guglielmo. 1977. The Movement Nature of Left Dislocation. *Linguistic Inquiry* 8, 397-411.
- Cinque, Guglielmo. 1990. *Types of A-bar Dependencies*, Cambridge, MA: MIT Press.
- Citko, Barbara and Kleanthes K. Grohmann. 2000. A New Argument in Favour of a Syntactic Focus Projection. *GLOW Newsletter* 44.
- Denham, Kristin. 2000. Optional Wh-Movement in Babine-Witsuwit'en. *Natural Language and Linguistic Theory* 18, 199-251.
- den Dikken, Marcel and Anastasia Giannakidou. 2002. From Hell to Polarity: "Aggressively Non-D-Linked" Wh-Phrases as Polarity Items. *Linguistic Inquiry* 33, 31-61.
- Dobrovie-Sorin, Carmen. 1990. Clitic Doubling, Wh-Movement, and Quantification in Rumanian. *Linguistic Inquiry* 21, 351-397.
- Doron, Edit. 1982. On the Syntax and Semantics of Resumptive Pronouns. *Texas Linguistic Forum* 19, 1-48.
- Fukui, Naoki. 1993. Parameters and Optionality. *Linguistic Inquiry* 24, 399-420.
- Gill, Kook-Hee & George Tsoulas. This volume. Peripheral Phenomena in Korean.
- Grohmann, Kleanthes K. 1997. On Left Dislocation. *Groninger Arbeiten zur germanistischen Linguistik* 40, 1-33.
- Grohmann, Kleanthes K. 1998. Syntactic Inquiries into Discourse Restrictions on Multiple Interrogatives. *Groninger Arbeiten zur germanistischen Linguistik* 42, 1-60.
- Grohmann, Kleanthes K. 2000. *Prolific Peripheries: A Radical View from the Left*. Doctoral dissertation, University of Maryland, College Park.
- Grohmann, Kleanthes K. 2003a. German Is a Multiple Wh-Fronting Language! In Cedric Boeckx and Kleanthes K. Grohmann, eds. *Multiple Wh-Fronting*. Amsterdam: John Benjamins, 99-130.
- Grohmann, Kleanthes K. 2003b. *Prolific Domains. On the Anti-Locality of Movement Dependencies*. Amsterdam: John Benjamins.
- Hale, Kenneth. 1983. Warlpiri and the Grammar of Nonconfigurational Languages. *Natural Language and Linguistic Theory* 1, 5-48.
- Hornstein, Norbert. 2001. *Move! A Minimalist Theory of Construal*. Oxford: Blackwell.
- Kallulli, Dalina. 1998. The Common Basis of DO Clitic Doubling and Scrambling. In Tina Cambier-Langeveld, Anikó Lipták, Michael Redford and Erik Jan van der Torre, eds. *Proceedings of ConSOLE 7*. Leiden: SOLE, 103-121.
- Kallulli, Dalina. 1999. *The Comparative Syntax of Albanian: On the Contribution of Syntactic Types to Propositional Interpretation*. Doctoral dissertation, University of Durham.
- Kidwai, Ayesha. 1999. *XP-Adjunction in Universal Grammar. Scrambling and Binding in Hindi-Urdu*. Oxford: Oxford University Press.

- É. Kiss, Katalin. 1998. Identification Focus versus Information Focus. *Language* 74, 245-273.
- Kitahara, Hisatsugu. 2002. A Derivational Analysis of Scrambling Sites. In Samuel David Epstein and T. Daniel Seely, eds. *Derivation and Explanation in the Minimalist Program*. Oxford: Blackwell, 167-183.
- Koster, Jan. 1987. *Domains and Dynasties*. Dordrecht: Foris.
- Kuroda, Shige-Yuki. 1988. Whether We Agree or Not: A Comparative Syntax of English and Japanese. *Lingvisticae Investigationes* 12, 1-47.
- Longobardi, Giuseppe. 1994. Reference and Proper Names: A Theory of N-Movement in the Syntax and Logical Form. *Linguistic Inquiry* 25, 609-665.
- Mahajan, Anoop. 2000. Eliminating Head-Movement. *GLOW Newsletter* 44, 44-45.
- Miyagawa, Shigeru. 1997. Against Optional Scrambling. *Linguistic Inquiry* 28, 1-25.
- Niinuma, Fumikazu. 2000. On Long-Distance Scrambling in Japanese. Ms., University of Connecticut, Storrs.
- Nunes, Jairo. 1995. *The Copy Theory of Movement and the Linearization of Chains in the Minimalist Program*. Doctoral dissertation, University of Maryland, College Park.
- Nunes, Jairo. 2003. *Sideward Movement and Linearization of Chains in the Minimalist Program*. Cambridge, MA: MIT Press.
- Pesetsky, David. 1987. *WH-in situ*: Movement and Unselective Binding. In Alice G.B. ter Meulen and Eric Reuland, eds. *The Representation of (In)definiteness*. Cambridge, MA: MIT Press, 98-129.
- Pesetsky, David. 2000. *Phrasal Movement and Its Kin*. Cambridge, MA: MIT Press.
- Poletto, Cecilia. 2000. *The Higher Functional Field*. Oxford: Oxford University Press.
- Postal, Paul. 1969. On So-Called Pronouns in English. In David A. Reibel and Sanford A. Schane, eds. *Modern Studies in English: Readings in Transformational Grammar*. Englewood Cliffs, N.J.: Prentice-Hall, 201-224.
- Puskás, Genoveva. 2000. *Word Order in Hungarian: The Syntax of A'-Positions*. Amsterdam: John Benjamins.
- van Riemsdijk, Henk and Frans Zwarts. 1974. Left Dislocation in Dutch and Status of Copying Rules. Appeared in Elena Anagnostopoulou, Henk van Riemsdijk and Frans Zwarts, eds. 1997. *Issues in Left Dislocation*. Amsterdam: John Benjamins, 13-29.
- Rizzi, Luigi. 2000. *Relativized Minimality*. Cambridge, MA: MIT Press.
- Rizzi, Luigi. 1997. The Fine Structure of the Left Periphery. In Liliane Haegeman, ed. *Elements of Grammar: A Handbook of Generative Grammar*. Dordrecht: Kluwer, 281-337.
- Rizzi, Luigi. 2001. Extraction from Weak Islands, Reconstruction, and Agreement. In Gennaro Chierchia, Maria-Teresa Guasti and Carlo Cecchetto, eds. *Semantic Interfaces. Reference, Anaphora and Aspect*. Stanford, Calif.: CSLI Publications, 155-176.
- Rochemont, Michael and Leslie Saxon. 1994. Surface Extraction of Adjuncts in Slave and the ECP. Ms., University of British Columbia and University of Victoria.
- Ross, John R. 1967. *Constraints on Variables in Syntax*. Doctoral dissertation, Massachusetts Institute of Technology, Cambridge.
- Rudin, Catherine. 1988. On Multiple Questions and Multiple Wh-Fronting. *Natural Language and Linguistic Theory* 6, 445-501.
- Rullmann, Hotze. 1995. *Maximality in the Semantics of Wh-Constructions*. Doctoral dissertation, University of Massachusetts, Amherst.
- Rullmann, Hotze and Sigrid Beck. 1998. Presupposition Projection and the Interpretation of *which*-Questions. In Devon Strolovitch and Aaron Lawson, eds. *Proceedings of SALT VIII*. Ithaca, NY: CLC Publications, 215-232.

- Saito, Mamoru. 1989. Scrambling as Semantically Vacuous A-bar Movement. In Mark Baltin and Anthony Kroch, eds. *Alternative Conceptions of Phrase Structure*. Chicago: Chicago University Press, 182-200.
- Saito, Mamoru. 1992. Long Distance Scrambling in Japanese. *Journal of East-Asian Linguistics* 1, 69-118.
- Sells, Peter. 1983. *The Syntax and Semantics of Resumptive Pronouns*. Doctoral dissertation, University of Massachusetts, Amherst.
- Sharvit, Yael. 1999. Resumptive Pronouns in Relative Clauses. *Natural Language and Linguistic Theory* 17, 587-612.
- Sportiche, Dominique. 1992. Clitic Constructions. Manuscript, University of California, Los Angeles. Appeared in Johan Rooryck and Laurie Zaring, eds. 1995. *Phrase Structure and the Lexicon*. Dordrecht: Kluwer, 213-277.
- Stjepanović, Sandra. 1998. *What Do Scrambling, Multiple Wh-Fronting, and Second Position Cliticization Have in Common?* Doctoral dissertation, University of Connecticut, Storrs.
- Tang, C.-C. Jane. 1988. Wh-Topicalization in Chinese. Ms., Cornell University, Ithaca.
- Torrego, Esther. 1988. Determiners and Pronouns. Ms., University of Massachusetts, Boston.
- Tsai, Dylan W.-T. 1999. The Why's of *how* and the How's of *why*. *UCI Working Papers in Linguistics* 5, 155-184.
- Uriagereka, Juan. 1988. *On Government*. Doctoral dissertation, University of Connecticut, Storrs.
- Uriagereka, Juan. 1995. Aspects of the Syntax of Clitics in Western Romance. *Linguistic Inquiry* 26, 79-123.
- Wu, Jianxin. 1999. *Syntax and Semantics of Quantification in Chinese*. Doctoral dissertation, University of Maryland, College Park.

Cedric Boeckx
Department of Linguistics
Harvard University
Boylston Hall, 3rd floor
Cambridge, MA 02138
USA

Kleanthes K. Grohmann
University of Cyprus
Department of Foreign Languages
and Literatures
Kallipoleos 75
P.O. Box 20537
1678 Nicosia
Cyprus