Is there ever multiple wh-movement?
Evidence from superiority effects and focus in Hungarian

Zoë Toft

One possible descriptive typology for question formation using multiple *wh*-phrases suggests a four-way distinction (Simpson 2000a, b): (1) No *wh*-phrase moves before Spell Out (Chinese) (2) One and only one *wh*-phrase moves before Spell Out (English) (3) Movement of one *wh*-phrase is optional (French) (4) Movement of all *wh*-phrases by Spell Out is obligatory (Russian). This paper contributes to the discussion surrounding the motivation for movement of multiple *wh*-phrases in the latter type of languages, with particular reference to Hungarian, following proposals by Bošković (1997a et seq.) concerning the diagnosis of *wh*-movement (i.e. movement to check *wh*-features) and language typology.

1. Introduction

In trying to answer the question 'What moves where when in which language and why?' many linguists have been kept busy over the years. With the growth of generative linguistics and an increasing amount of research into languages other than English, these answers have started to provide very interesting evidence for the debates concerning Universal Grammar and language typology: to what extent is there universal patterning in the formation of *wh*-questions? Can the same formal mechanisms account for the variation that does exist?

Cross-linguistically, a four-way typology can be posited for *wh*-movement. In Chinese-type languages *wh*-elements appear to remain in situ at Spell Out:

(1)	John	gei	shei	shenme?	Chinese
	John	give	who	what	Bošković (1999:2)
	'What did John give to whom?'				

In English-type languages normally one and only one *wh*-element is fronted before Spell Out:

(2) 'When$_i$ did he do what t_i?'

In a third, less clearly understood set of languages there is some optional *wh*-movement. French, Indonesian and Iraqi Arabic may be described as belonging to this group (data from Bošković 1999:2-3):

(3) a. Qu' a-t-il donné à qui?
what has-he given to whom
'What did he give to whom?'
b. Il a donné quoi à qui?
he has given what to whom
'What did he give to whom?'

Wh-movement is optional in short distance null C matrix questions

c. Pierre a demandé qui tu as embrassé
Pierre has asked who you have kissed
'Pierre asked who you kissed'
d. *Pierre a demandé tu as embrassé qui
Pierre has asked you have kissed who
*'Pierre asked you kissed who'

Wh-movement is compulsory in embedded questions (as it also is in long distance matrix questions and overt questions for those dialects which have overt C questions)

While descriptively it is fair to say that these languages exhibit optional *wh*-movement in some circumstances, further research may show that the languages in this set actually belong to one of the first two sets.[1] However, for the purposes of this paper I assume, in line with Bošković, that they form a third, distinct group. Finally there is a set of languages in which fronting of all *wh*-elements is obligatory by Spell Out:

(4) a. Cine cu ce merge? — Romanian
who with what goes — Rudin (1988:449)
'Who goes by what?' (i.e. means of transportation)
b. vin ra tkva? — Georgian
who what said
'Who said what?'
c. Ki mikor született? — Hungarian
who when was-born
'Who was born when?'

Although most research into this set of languages has so far concentrated on Slavic languages, the examples above show that the phenomenon of multiple *wh*-fronting is also found in Romance, Caucasian and Uralic languages.

[1] Indeed, Cheng (1991) predicts that there should be no languages in which wh-movement is purely optional.

2. Bošković (1999)

Bošković initially recognises the four basic types of language with respect to question formation using multiple *wh*-phrases as outlined above. Crucially he makes a distinction between *wh*-'movement', which is driven only by the need to check *wh*-features, and *wh*-'fronting', which is driven by the need to check non *wh*-features, typically focus features.[2] Although the results of these two operations may appear similar on the surface, Bošković proposes that the two different mechanisms can be identified by examining Superiority effects. With this distinction established he goes on to argue that the language type 'multiple *wh*-'movement' languages' (to which Polish, Serbo-Croatian, Bulgarian as well as Romanian, Russian, Georgian and Hungarian are traditionally assigned) be eliminated from the cross linguistic typology. Following work begun by Rudin (1988), who argued that multiple *wh*-transformation[3] languages (henceforth MWT languages) do not form a single cohesive set, Bošković argues that MWT languages pattern in three different ways, based on differences in the contexts where Superiority effects are exhibited. He asserts that this three-way distinction in MWT languages corresponds to the three-way distinction in non-MWT languages and that MWT, as a unitary phenomenon and language type, should therefore no longer be recognised. According to Bošković, Russian mirrors Chinese, Serbo-Croatian twins up with French, while Bulgarian reveals itself to pattern like English. Where Russian, Serbo-Croatian and Bulgarian differ from Chinese, French and English is that in the former group of languages, *wh*-phrases which do not undergo genuine *wh*-movement must nevertheless be fronted, but for independent reasons.

Bošković presents his paper in the minimalist framework of Chomsky (1995), under which movement is subject to derivational economy. Movement is caused by the need to check features and must be as economical as possible. Thus, if there is more than one feature to be targeted, the attractor picks that which is higher in the tree in order to assure that, of all the possible movements, the chosen movement is the shortest (and thus most economical) movement.

At the heart of Bošković's analysis is his assumption that Superiority effects can be used to diagnose *wh*-movement (1999:7). He argues that only when there are Superiority effects is there *wh*-movement, which he defines as movement driven by the need to check the strong +*wh*-feature, wherever that be located. Superiority effects are reflected in the order of fronted *wh*-phrases: According to the Superiority condition, if a rule has two potential targets in a sentence the rule must apply to that which is structurally superior on grounds of

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[2] Henceforth I shall use wh-movement and wh-fronting as defined here. I shall also use the term wh-*transformation* as a cover term, when the exact status of the transformation, i.e. whether due to wh-checking requirements or focus feature checking requirements, is as yet undetermined or not relevant to the point at hand.

[3] The term used by Rudin is actually 'wh-fronting'. However, her usage of this term is not the same as that of Bošković's and thus, to avoid confusion, I use the cover term wh-transformation.

economy of derivation. This principle is said to account for the standard Superiority facts from English, as illustrated in (5)):

(5) a. Who saw what?
SS: $[_{CP}$ who$_i$ $[_{IP}$ t_i saw what]]
LF: $[_{CP}$ [what]$_m$ [who]$_i$ $[_{IP}$ t_i saw t_m]]
b. *What did who see?
SS: *$[_{CP}$ what$_m$ did $[_{IP}$ who see t_m]]
LF: *$[_{CP}$ [who]$_i$ [what]$_m$ did $[_{IP}$ t_i see t_m]]

Bošković shows that Russian never has Superiority effects, Bulgarian always has Superiority effects and Serbo-Croatian has Superiority effects in exactly those contexts where French has obligatory *wh*-movement, namely in long distance and embedded questions, but not in matrix questions. Thus, given that Superiority effects occur when *wh*-movement takes place, Bošković makes the bold claim that Russian is like Chinese, in that no *wh*-movement takes place, Bulgarian is like English, in that *wh*-movement always takes place, whilst Serbo-Croatian patterns like French in that *wh*-movement is obligatory only in certain circumstances.

Bošković adopts a proposal made by Stjepanovic (1998) to explain why in MWT languages *wh*-phrases, even when they are not moving to satisfy *wh*-feature checking requirements, must still undergo raising: *wh*-phrases are inherently contrastively focused and thus are forced to undergo overt focus movement. (Although Bošković does not provide a definition of 'focus', his usage of the term seems compatible with the proposal made be Zubizarreta (1998), where, following Chomsky (1976) 'the focus of a sentence is analysed as a definite quantifier' (Zubizarreta 1998:3)). Evidence that multiple fronting of *wh*-phrases is independent of *wh*-movement comes from the fact that in the three languages examined by Bošković, *wh*-phrases must be fronted even in echo questions, where, it is traditionally assumed, no *wh*-movement takes place. Evidence that the multiple fronting of *wh*-phrases is driven by focus requirements paradoxically comes from instances where, in MWT languages, there are apparent exceptions to the obligatory raising of all *wh*-phrases.

In each of the three languages examined by Bošković D(iscourse)-linked *wh*-phrases can remain in situ. Following Pesetsky (1987) a *wh*-phrase is said to be D-linked when the set from which answer-values for the *wh*-phrase in question is finite and assumed to be known to both speaker and hearer. Because the set of answers is limited, D-linked *wh*-phrases are not quantifiers and therefore do not need to undergo movement to an operator position as other quantificational elements (e.g. standard *wh*-phrases, focus-phrases) do. That D-linked *wh*-phrases can remain in situ might therefore be elegantly explained under a focus analysis of *wh*-fronting in MWT languages. The range of reference for D-linked *wh*-phrases is limited to a set of objects assumed to be familiar to both speaker and hearer and thus D-linked *wh*-phrases are not inherently focused (something is already known about them). If D-linked *wh*-

phrases are not inherently focused, they will not be subject to focus movement and may therefore remain in situ.

Crucially, *wh*-fronting driven by focus checking requirements will not show Superiority effects. *Wh*-phrases themselves, rather than the X^0 element into whose Spec position they move, are argued to have a strong focus feature, and this may be checked in any order without violating the principle of economy, as movement by either the higher *wh*-phrase, or the lower *wh*-phrase results in the same number of full nodes being crossed.

In the following section I present facts concerning multiple *wh*-transformations in Hungarian. Having presented the facts, in section 4 I explore whether either *wh*-movement or *wh*-fronting occur in Hungarian and examine what consequences the Hungarian data has for the proposals made by Bošković concerning Superiority effects with regard to the diagnosis of *wh*-movement. and the elimination of multiple *wh*-movement as a language type.

3. Hungarian data
3.1 Single Clauses

Hungarian is most often described as a discourse configurational language: topic and focus are argued to have clearly identified structural positions (e.g. Kiss 1987, 1995). *Wh*-phrases are found immediately preceding the verb (cf. 6a, b below) in a position generally identified with focus and the only exception to the adjacency of the *wh*-phrase and the verb is in case of negation, when the negative particle must intervene (6b, c, d). Whatever the (final) landing site of *wh*-phrases (previous analyses have suggested Spec VP (Kiss 1995), Spec FP, where the Focus Phrase has its own projection (Brody 1990) and adjoined to IP (Richards 1999)), it is clearly not Spec CP, as *wh*-phrases always follow any overt complementizer (6e, f). It should also be noted that the topic position precedes the focus position.

(6) a. Ki látta az ikreket?
who saw the twins-ACC[4]
'Who saw the twins?'

b. *Ki az ikreket látta?
who the twins-ACC saw
Attempted: 'Who saw the twins?'

c. Ki nem látta az ikreket?
who not saw the twins-ACC
'Who didn't see the twins?'

d. *Nem ki látta az ikreket?
not who saw the twins-ACC
Attempted: 'Who didn't see the twins?'

[4] I use the following abbreviations throughout this paper: 1PP: First person plural, 1PS: First person singular, ACC: Accusative, COMP: Complementizer, CV: Co-verb, DAT: Dative, DEF: Definite marker, i.e. the so-called second conjugation marker, INDEF: Indefinite marker, i.e. the so-called first conjugation marker, SUBJ: Subjunctive.

(6) e. Hogy ki látta az ikreket, arra voltam kíváncsi.
COMP who saw the twins-ACC, that-about was-I curious
'What I was curious about was who saw the twins'
f. *Ki hogy látta az ikreket, arra voltam kíváncsi.
who COMP saw the twins-ACC, that-about was-I curious

In multiple *wh*-questions *all wh*-phrases are found preverbally, as the following examples show:

(7) a. Pillanatról pillanatra követhető, ki, mikor, milyen
moment-from moment-to observable, who, when, which
helyzetben hogyan érez.
situation-in how feels
'It is observable from moment to moment who feels how, when and in which situation.'[5]
b. Itt tisztázzuk, hogy kit, mikor, miért, hogyan
here clarify-SUBJ-1PP, that who-ACC, when, what-for, how
kárpótolunk.
compensate
'Let us clarify here, how we are to compensate who, when and for what.'

The key fact of multiple *wh*-questions in Hungarian is that, in general, there are no ordering restrictions on *wh*-phrases:[6]

(8) a. Ki kivel jár?
who who-with goes
'Who is going out with whom?'
b. Kivel ki jár?
who-with who goes
'Who is going out with whom?'
c. Mi mit jelent?
what what-ACC means
'What means what?'
d. Mit mi jelent?
what-ACC what means
'What means what?'

[5] Examples (7) and (8) are taken from a corpus of Hungarian that may be found at www.corpus.nytud.hu/mnsz. 7: G. László Szabó (1996.06.28, nszb 3411), 8: Pál Tóth (1995.09.11, ogy. 29725). This corpus contains several hundred examples of multiple wh-transformations, from both the written and the spoken language. Also note, the use of commas to separate wh-phrases is generally considered to be optional and not indicative of any structural feature (K. Berces, T. Váradi p.c.)

[6] As is also the case in Russian (Stepanov 1998:458) Hungarian does show some word order restrictions in cases where wh-phrases are not identical in animacy:

Ki mit lát? ??Mit ki lát?
who what-ACC sees what-ACC who sees
'Who sees what?'

While Stepanov suggests such restrictions, in Russian at least, might be due to a phonological constraint, I suggest that the restrictions may be related to saliency and an animacy hierarchy along the lines of Comrie (1981).

e. Mikor hova utazik?
when whither travels
'When does he travel where?'

f. Hova mikor utazik?
whither when travels
'When does he travel where?'

3.2 Echo Questions

Hungarian grammars state that in echo questions, all question words are placed pre-verbally, and that they are distinguished from genuine multiple *wh*-questions either by a change in intonation pattern (the intonation for simple echo questions is the same as that for yes-no questions, while in multiple *wh*-echo questions each question word is equally stressed) or through the optional introduction of the complementizer *hogy* 'that' (Kenesei, Vago and Fenyvesi, henceforth KVF 1998:13-15):

(9) a. *Single wh-echo question*
(Hogy) Anna mit talált meg?
(that) Anna what-ACC found CV
Anna found what?

b. *Multiple wh-echo question*
(Hogy) ki mit mikor talált meg?
(that) who what-ACC when found CV
'Who found what when?'

If we accept the traditional analysis that *wh*-movement does not occur in echo-questions (in many languages *wh*-phrases are found in situ, i.e. post verbally in echo questions, despite obligatory raising of *wh*-phrases in genuine, i.e. non-echo, questions), the obligatory fronting of *wh*-phrases in Hungarian may be interpreted as taking place for reasons other than the checking of *wh*-features.

3.3 Multiple Clauses

Thus far I have devoted attention only to *wh*-transformations in single clauses. In many languages, however, *wh*-phrases may move out of the CP within which they originate (Lasnik & Saito 1984, Rizzi 1990, Cinque 1990):

(10) $[_{CP}\text{Who}_i$ do they believe$[_{CP}$ t_i won the prize]]?

In this sub-section I address two questions: (1) Does Hungarian have long distance *wh*-transformations and if so (2) Are there any subject/object asymmetries (Superiority effects) associated with such movement. The answers to these questions are (1) yes, Hungarian does have long distance *wh*-transformations and (2) no – there are no subject/object asymmetries, in as

much as subjects, objects and adverbials may each be raised:

(11) a. *Subject wh-phrase moves out of lower CP*
Kit$_i$ gondolsz, hogy Vili mondta, hogy t$_i$
who-ACC[7] think-2PS/INDEF that Vili said-3PS/DEF that
látta Jánost?
saw-3PS/DEF János-ACC
'Who do you think that Vili said that saw John?'

b. *Object wh-phrase moves out of lower CP*
A tanár mit$_i$ akar, hogy tanuljunk t$_i$?
the teacher what-ACC wants, that study-SUBJ-1PP
'What does the teacher want us to study?'

c. *Adverbial wh-phrase moves out of lower CP*
János mikor$_i$ akarja, hogy induljunk t$_i$?
János when want-DEF that leave-SUBJ-1PP
'When does János want us to leave?

In multiple *wh*-questions formation an alternative strategy, utilizing 'partial' *wh*-movement (see É Kiss 1987, Horvath 1995 and McDaniel 1989) is also available. However, an analysis of this phenomenon is beyond the scope of this paper.

Whilst more research remains to be done into long distance movement in multiple *wh*-questions, what is clear is that there are no Superiority effects in long distance movement of Hungarian *wh*-phrases (as is also concluded by É Kiss 1987), just as there are no Superiority effects in short distance movement.

3.4 Hungarian in situ wh-phrases

Although it is clear that Hungarian is a MWT language, there are certain circumstances in which it is possible to leave *wh*-phrases in situ:

(12) *Possibility of leaving either wh-phrase in situ*

a. Ki jár kivel?
who goes who-with
Who is going out with who?

b. Kivel jár ki?
who-with goes who
Who is going out with who?

c. Meddig dolgozik hol?
for-how-long works where
'How long does he work where?'

d. Hol dolgozik meddig?
where works for-how-long
'How long does he work where?'

[7] One interesting problem in raising wh-phrases into higher clauses is that associated with case assignment. As this example shows, the subject wh-phrase is assigned Accusative case (**-t**). For discussion of this phenomenon and possible explanations see de Mey & Marácz (1986) and É Kiss (1987).

(13) *Impossibility of leaving all wh-phrases in situ*

a. *Jár ki kivel
goes who who-with
Attempt at:
'Who is going out with who?'

b. *Jár kivel ki
goes who-with who
Attempt at:
'Who is going out with who?'

c. *Dolgozik meddig hol?
works for-how-long where
'How long does he work where?'

d. *Dolgozik hol meddig?
works where for-how-long
'How long does he work where?'

These examples show us that although there are no restrictions on which *wh*-phrase raises and which remains in situ, it is always obligatory for at least one *wh*-phrase to raise. We now need to establish what the circumstances are under which it is possible to leave a *wh*-phrase in situ. What we discover is that if the domain of reference of the multiple questions is somehow limited, e.g. to the actuants in the discourse, events or characters in a novel, then it is possible to leave one (or more) of the *wh*-phrases in situ, as long as one (or more) *wh*-phrase has been raised to a pre-verbal position (KVF 1998:9) (cf. 14, 15 below). If, on the other hand, the domain of reference of the *wh*-phrases is entirely unlimited, all *wh*-phrases are raised (see 16, 17 below).

If the domain of reference is somehow limited, it is easy to argue that we are dealing with a case of D-linking. Recall that the range of reference for a D-linked *wh*-phrase is limited to a set of objects assumed to be familiar to both speaker and hearer. As such, D-linked *wh*-phrases are not inherently focused because we know something about them. Recall too how Bošković showed that D-linked *wh*-phrases in Serbo-Croatian, Bulgarian and Russian may be left in situ. He argues that this is because (at least some) *wh*-fronting is actually driven by the need to check focus features, and thus when a *wh*-phrase is not inherently focused (e.g. because it is D-linked) it does not need to move. What is now exciting is that we appear to have found a parallel situation in Hungarian:

(14) *D-linking: Domain of reference of wh-phrases is limited (1)*
Scenario: We know that there are 10 people at a party and that each person is going out with one other person who is at the party. How do you ask who is going out with whom?:

a. ✓Ki jár kivel?
who goes who-with
'Who is going out with whom?'

b. ?Ki kivel jár?
who who-with goes

c. *Jár ki kivel?
goes who who-with

(15) *D-linking: Domain of reference of wh-phrases is limited (2)*

a. ✓Mária kérdezte, melyik diák olvasta melyik könyvet.
Mária asked which student read which book-ACC
'Mária asked which student read which book.'

b. ?Mária kérdezte, melyik diák melyik könyvet olvasta.
Mária asked which student which book-ACC read

c. *Mária kérdezte, olvasta melyik diák melyik könyvet.
Maria asked read which student which book-ACC

In (14a) and (15a) only one *wh*-phrase raises and the sentences are grammatical. In (14b) and (15b) both *wh*-phrases are raised and the sentences are degraded. In (14c) and (15c) no *wh*-phrase is raised and the sentences are entirely ungrammatical.

(16) *No D-linking: Domain of reference of wh-phrases is unlimited (1)*
Scenario: A fairy appears and says to everyone 'You can have whatever you wish for – everyone everywhere is allowed whatever they want'. How does the fairy ask 'Who wants what?':

a. ✓Ki mit akar? b. *Ki akar mit? c. *Akar ki mit?
who what-ACC wants who wants what-ACC wants who what-ACC
'Who wants what?'

(17) *No D-linking: Domain of reference of wh-phrases is unlimited*[8] *(2)*

a. ✓Mária kérdezte, ki mit olvasott.
Mária asked who what-ACC read
'Mária asked who read what'

b. ? Mária kérdezte, ki olvasott mit.
Mária asked who read what

c. *Mária kérdezte, olvasott ki mit.
Mária asked, read who what-ACC

In (16a) and (17a) both *wh*-phrases raise to generate a grammatical sentence. In (16b) and (17b) only one *wh*-phrase raises and the sentences are degraded. In (16c) and (17c) neither *wh*-phrase raises and the sentences are ungrammatical.

4. Analysis of the Hungarian Data and appraisal of Bošković (1999)

In (8) above we saw that Hungarian displays no Superiority effects in short distance matrix questions; all *wh*-sequences, such as subject / direct object, subject / indirect object or direct object / indirect object can be freely ordered. Although we might surmise from this that no *wh*-movement takes place in Hungarian, it would be premature to draw such a conclusion at this point. Bošković (1999) shows that Serbo-Croatian, whilst exhibiting no Superiority effects in matrix questions, does display strict ordering of *wh*-phrases in cases of long distance movement. With this in mind let us recall the Hungarian data with regard to long distance movement in (11) above. Here we saw that there are no subject-object asymmetries associated with long distance movement in

[8] Bare wh-phrases are generally interpreted as *not* D-linked, especially when no setting is given (Simpson 2000a, Pesetsky 1987).

Hungarian. We are now safely able to conclude that Hungarian does indeed exhibit no Superiority effects in the formation of multiple *wh*-questions.

In §2 we saw Bošković's proposal that Superiority effects are indicative of *wh*-movement. Given that there are no Superiority effects in Hungarian, we are therefore led to conclude that there is no *wh*-movement in Hungarian. However, *wh*-phrases in Hungarian do clearly occur in a preverbal position (presumably as a result of a transformation). If this transformation is not the result of *wh-movement*, what is it the result of?

Evidence from D-linked *wh*-phrases suggests an answer: *wh*-phrases are inherently marked for focus, and therefore, under normal conditions, they are subject to focus movement. D-linked *wh*-phrases, however, are inherently *un*marked for focus (as something is already known about them) and therefore they may remain in situ (cf 14, 15 above). It is this behaviour that can be argued to provide us with evidence that in Hungarian, at least some *wh*-transformations are not driven by the need to check *wh*-features but rather by the need to check focus features. (Here we can also recall that all analyses of Hungarian *wh*-transformations agree that *wh*-phrases move to structural position identified with focus). To re-phrase this conclusion: we can explain some important exceptions to the multiple transformations of *wh*-phrases in Hungarian if we adopt Bošković's proposal that not all *wh*-transformations should be regarded as being driven by *wh*-feature checking requirements.

Thus far we have seen that Hungarian exhibits no Superiority effects and that it is focus feature checking requirements that drive at least some of the *wh*-transformations in this language. Our next question is therefore 'Are *all wh*-transformations in Hungarian driven by the need to check focus features?'

If we examine the data in (14) and (15) again we see that even though both *wh*-phrases in each example are D-linked, one of the *wh*-phrases must still raise to a pre-verbal position. Yet, if all *wh*-transformations in Hungarian are driven by the need to check focus features we would not expect this behaviour: D-linked *wh*-phrases, such as those in (14) and (15) should not be subject to focus movement. The fact is, however, that in all circumstances, one *wh*-phrase must raise, even when D-linked. This suggests that the interrogative Q feature is strong and must therefore be checked in the overt syntax. In other words it suggests that there *is wh*-movement in Hungarian.

Following this line of argument we are led to believe that Hungarian has both *wh*-movement and *wh*-fronting (as defined in §2). Recall, however, that Hungarian exhibits no Superiority effects even though Bošković argues the Superiority effects should be exhibited if there is *wh*-movement. Thus the Hungarian data would seem to seriously challenge Bošković's proposals. In spite of this, before we abandon his interesting ideas let us see if we might find some explanation for the lack of Superiority effects in Hungarian.

My first proposal invokes the notion of non-configurationality. Some linguists, notably Kiss (1987) have ascribed to Hungarian a flat structure below the VP. Whilst this proposal is certainly not without its opponents, the lack of hierarchy below the VP would account very neatly for the lack of Superiority

effects; subject, object and adjunct would all be base generated at the same level and thus movement of one rather than another would be neither more nor less economical. A lack of Superiority effects would therefore be predicted. Whilst I believe this proposal to be interesting, there remains a question as to whether Bošković's proposals, which do not make any reference to the configurational / non-configurational distinction, can be extended so straightforwardly to non-configurational languages.[9]

A second proposal, that would allow us to maintain the assumption that Hungarian phrase structure is hierarchical (i.e. that the language is configurational), would be to adopt a suggestion made by Baker (1996) for the topicalization and left dislocation of DPs in polysynthetic languages. He suggests that the topicalized/left dislocated DPs are directly inserted into their higher positions (i.e. no movement takes place) and they are co-indexed with pro elements found in the post-verbal DPs. If we extend his proposal to cover *wh*-phrases, the lack of movement would explain the lack of Superiority effects. Although this is a radical proposal it may be the case that such an analysis could work for Hungarian, given that direct insertion of *wh*-phrases into the higher clause of two clause structures has already been suggested (de Mey and Marácz 1986). If direct insertion is possible in multi-clause structures, it may also be possible in single clause structures. Once again, however, this proposal is problematic: in adopting Baker's approach we assume no *wh*-transformations at all and thereby we are forced to abandon the set of premises on which this paper is based.

Given that I cannot explain the lack of Superiority effects without adopting an approach which entails modification if not rejection of Bošković's insights, let me instead re-examine the premise that there is *wh*-movement in Hungarian.

I proposed that there must be some *wh*-movement in Hungarian in order to explain why at least one *wh*-phrase must raise to a pre-verbal position even when it is D-linked. Given that D-linked *wh*-phrases do not need to move in order to check any focus features, we might expect that all such *wh*-phrases could remain in a post verbal position. This, however, is not possible, as was seen above in (14) and (15). Given a focus driven theory of movement we predict that transformation of either *wh*-phrase should be unnecessary (neither need to move to check focus requirements). Nevertheless one of the *wh*-phrases does move, and to account for this I proposed that *wh*-movement does indeed take place. Now we need to check whether there is not some alternative explanation for this transformation, which would allow us to re-assert the hypothesis that there is no *wh*-movement in Hungarian as expected on account of the lack of Superiority effects.

Upon re-examination of the Russian data in Bošković (1999) we find exactly the same patterning of data for Russian as we have seen for Hungarian. Crucially Bošković argues that (i) no *wh*-movement takes place in Russian on

[9] It is interesting to note that, just as for Hungarian, one could argue that Russian is a non-configurational language. Bošković, however, makes no mention of this.

account of the lack of Superiority effects and (ii) D-linked *wh*-phrases may remain in situ. However, his data actually suggest that the latter assertion is not always true:

(18) *One wh-phrase, even though D-linked, raises to a preverbal position*
(?) Kakoj student pročital kakuju knigu? (Russian)
which studen read which book
'Which student read which book'? (Bošković 1999:9)

This data is exactly parallel to the Hungarian data in (15). Whether deliberately or not, Bošković makes no comment on the raising of *kakoj student* 'which student'. However later on in his paper he does write (Bošković 1999:11):

> 'A question arises as to whether a D-linked *wh*-phrase can remain in situ in single questions. This is not completely clear in Serbo-Croatian […]
> ?? On je kupio koju knjigu?
> he is bought which book
> 'He bought which book?'
> I assume that the degraded status of the construction […] is a result of the failure to type the clause as a question in the sense of Cheng (1991, 1997) […] Since, according to Cheng, Serbo-Croatian does not have a pure question particle […] one of the Serbo-Croatian *wh*-phrases must be fronted in true questions for clausal typing purposes, which I assume is carried out by simply fronting a *wh*-phrase within the highest projection in overt syntax. […] I leave open here how this fronting is instantiated in D-linking questions. It could be instantiated as either scrambling or *wh*-movement'

A reader might infer from this that the initial *wh*-phrase in (14) and (15) has similarly been raised in order to satisfy typing requirements. However, whether there is a genuine distinction, i.e. one of substance, between clausal typing and *wh*-movement is far from clear. If the only difference is a terminological one, we may be forced to accept that even though D-linked *wh*-phrases are not inherently focused, they nevertheless undergo *wh*-movement. If we deduce from this that Russian does have *wh*-movement, Bošković's proposal that Russian is actually like Chinese (in that no *wh*-movement takes place) becomes untenable, and his 3-way typology starts to crumble.

5. Conclusions

In this paper I have investigated the nature of *wh*-movement in Hungarian with particular regard to proposals made by Bošković concerning language typology, the diagnosis of *wh*-movement and phenomena related to focus.

Whilst Bošković makes some very interesting proposals, this paper shows two areas in need of further research: the diagnosis of *wh*-movement in non-configurational languages and the unpredicted compulsory movement of D-linked *wh*-phrases.

First we saw that in Hungarian, in general, all *wh*-phrases are raised to a pre-verbal position. Then we saw that there are no ordering restrictions on *wh*-phrases in Hungarian which we understood to be indicative of the lack of Superiority effects in Hungarian. Following Bošković we assumed that *wh*-movement, driven by the need to check *wh*-features, does show Superiority effects, whilst *wh*-fronting, driven by the need to check focus features, does not. Given the facts that in Hungarian it is always necessary to raise at least one *wh*-phrase even when that *wh*-phrase is D-linked, and that there are no ordering restrictions on the raised *wh*-phrases, we reached a situation which challenged Bošković's proposals. Either we followed a route whereby we accepted that *wh*-movement did occur even though there were no Superiority effects, or we took a different route which led to difficulties in explaining why D-linked *wh*-phrases should ever undergo movement. Thus we reach two challenging conclusions: (i) Superiority may not be a diagnostic for *wh*-movement and (ii) it may be possible (at least in some languages) that *wh*-constructions arise without movement. The issues of non-configurationality interfacing with *wh*-movement and a non derivational approach to wh constructions are both interesting topics for future research.

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