

KERESZTES JÚLIA

**PIED-PIPING IN HUNGARIAN – AN EXPERIMENTAL
INVESTIGATION ON THE RESTRICTIONS ON PIED-
PIPING IN HUNGARIAN A-BAR MOVEMENTS**

FÖLÉRENDELT ÖSSZETEVŐ MOZGATÁS A MAGYARBAN –
KÍSÉRLETES VIZSGÁLAT A FÖLÉRENDELT ÖSSZETEVŐ
MOZGATÁS MEGSZORÍTÁSAIRÓL A MAGYAR A-VONÁS
MOZGATÁSOKBAN

Theses of doctoral (PhD) dissertation

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1 AIMS OF THE DISSERTATION

In my dissertation I investigate the constraints of pied-piping with experimental methods in A-bar movements in which the feature-bearing element is embedded inside a prenominal adjunct island in Hungarian. The investigated constructions consist of focus movement, *wh*-movement and relativization. The theories on pied-piping diverge with respect to the underlying assumptions whether the motivation for movement needs to be encoded in syntax or outside the syntactic domain. Some approaches question the existence of classical pied-piping – that is, the type of movement in which a XP containing a feature-bearing element is moved because, for some reason, the feature-bearing element itself is unable to move out of the phrase containing it.

The starting point of this research was the goal to verify empirical evidence reported by Horváth (2007) on the distinction on the nature of features. She based her claim on the difference in pied-piping patterns between the (traditionally) syntactic features of [wh] and [rel], and [foc] which she believes to be a discourse feature rather than a syntactic feature.

- (1) a. **az ital, amit követelő vendégektől fél a pincér t*
the drink which-ACC demanding guests fear-3SG the waiter
'the drink customers demanding which the waiter is afraid of...'
- b. **Mit követelő vendégektől fél a pincér?*
what-ACC demanding guests fear-3SG the waiter
'Customers demanding what is the waiter afraid of?'
- c. *BARACKPÁLINKÁT követelő vendégektől fél a pincér.*
apricot-brandy-ACC demanding guests fear-3SG the waiter
'It is customers demanding APPRICOT BRANDY that the waiter is afraid of.'

Horváth (2007) assumes a semantic operator that attaches to the XP that will receive an exhaustive reading. The movement is triggered by the operator adjoined to the phrase and moves the XP to the CP domain (into a designated EiP). Horváth (2007) claims that the unacceptability of pied-piping in *wh*-movement and relativization is due to the syntactic nature of the respective features. She claims that pied-piping is unrestricted in focus movement because there is no syntactic focus-feature involved in focus movement.

The thesis sets out to answer the following research questions:

Research Question 1: Is there a syntactic focus-feature on the element that is prosodically prominent?

Research Question 2: Does focus-pied-piping show similarities in the restrictions on pied-piping to the other A-bar movement types – which are restricted with regards to pied-piping? The two other A-bar movements are relativization involving a syntactic [rel]-feature on the relative pronoun and *wh*-movement involving a syntactic [wh]-feature on the *wh*-pronoun.

Research Question 3: Does *wh*-movement in Hungarian align with relative-movement or with focus-movement?

2 RESEARCH METHOD

In my research I used experimental methods to investigate pied-piping in Hungarian in three A-bar constructions (focus movement, *wh*-movement and relativization) in which the pied-piper was embedded inside a prenominal adjunct island. In the dissertation I present seven

experiments constructed and conducted to elicit judgements on the tested constructions. The experiments consisted of acceptability judgement tasks (save one production task). The subjects had to judge sentences on a 7-point scale (where 1 meant completely unacceptable while 7 meant completely acceptable). I consider the first two experiments pilot experiments. They served as a basis of the later experiments in which I separately investigated the constructions. In the first two experiments all constructions were investigated together which made the experiment long and demanding on the working memory of the subjects. The number of target sentences also made statistical analysis difficult. However, the pilot studies helped in correcting the target sentences and other presentational mistakes. I examined focus movement, *wh*-movement and relativization in separate experiments in which the pied-piper was embedded inside a prenominal adjunct island (1) – (3). There were baseline sentences to which I compared the effect of pied-piping.

(1) Baseline (DP in post-verbal position):

- a. Azt hallottam, hogy az HBO filmet forgatott a tömeggyilkosságért
 that heard-1SG that the HBO film.ACC shot-3SG the mass.murder.for
 letartóztatott bűnözőkről tavaly.
 incarcerated criminals last.year
 ‘I heard that the HBO was shooting a movie about the criminals incarcerated for
 mass murder last year.’

Pied-piping: ... [DP D [NP [WH obl participle] N acc] V VM ADV

- b. Nem tudom, hogy a miért letartóztatott bűnözőkről forgatott
 not know-1SG that the why incarcerated criminals shot-3sg
 filmet az HBO tavaly.
 film.ACC the HBO last.year
 ‘I don’t know the HBO shot a movie about the why incarcerated people.’

(2) Baseline (DP in post-verbal position):

- a. Azt hallottam, hogy az ételkritikus megdicsérte a magyarosan
 that heard-1SG that the food.critic VM.praised-3SG the Hungarian-style
 fűszerezett ételeket a múlt heti cikkében.
 spiced dishes.ACC the last week article.his.in
 ‘I heard that the food critic praised the dishes made with Hungarian-style spices in
 his article last week.’

Pied-piping: ...[[FOC_{obl} participle] N_{ACC}] NP V VM ADV

- b. Csodálkoztam, hogy csak a magyarosan fűszerezett ételeket
 surprised-1SG that only the Hungarian-style spiced dishes.ACC
 dicsérte meg az ételkritikus a múlt heti cikkében.
 praised-3SG VM the food.critic the last week article.his.in
 ‘I was surprised that it was only the dishes made with Hungarian-style spices that
 the
 food critic praised in his article last week.’

(3) Baseline (no pied-piping):

- a. Az mondta el a verset, aki gyakran szokott hallgatni
that recited-3SG VM the poem-ACC who often used.to listen.to
szépen elmondott verseket.
beautifully recited poems
'The poem was told by the person who often listens to beautifully recited poems.'

Pied-piping: ...[REL_{obl} participle] N_{ACC}] ADV VM V

- b. Úgy mondta el a verset, ahogyan elmondott verseket
so recited-3SG VM the poem-ACC how recited poems-ACC
gyakran meg szokott hallgatni.
often VM used.to listen.to
'He told the poem in a way which way recited poems he often likes to listen to _.'

In an experiment I examined whether there is inner/secondary *wh*-movement inside the DP in Hungarian (4) – (5).

(4) Baseline sentences:

- a. **Ízletes ciprusi** borokat kértem a születésnapomra.
Delicious from.Cyprus vines.ACC asked-1SG the birthday.my.for
'I asked for delicious vines from Cyprus for my birthday.'
- b. **Ciprusi ízletes** borokat kértem a születésnapomra.
from.Cyprus delicious vines.ACC asked-1SG the birthday.my.for
'I asked for delicious vines from Cyprus for my birthday.'

Target sentences:

- a. **Ízletes honnan származó** borokat kértél a születésnapodra?
Delicious where originating vines.ACC asked-1SG the birthday.your.for
'Delicious what kind of vines did you ask for for your birthday?'
- b. **Honnan származó ízletes** borokat kértél a születésnapodra?
where originating delicious vines.ACC asked-1SG the birthday.your.for
'What kind of delicious vines did you ask for for your birthday?'

(5) Baseline sentences:

- a. Négy **aprócska szögletes** sajtot találtam a hűtőben.
Four tiny rectangle cheese.ACC found-1SG the fridge.in
'I found four tiny rectangle cheeses in the fridge.'
- b. Négy **szögletes aprócska** sajtot találtam a hűtőben.
Four rectangle tiny cheese.ACC found-1SG the fridge.in
'I found four rectangle tiny cheese in the fridge.'

Target sentences:

- a. Négy **aprócska milyen alakú** sajtot találtál a hűtőben?
Four tiny what shape cheese.ACC found-2SG the fridge.in
'Four tiny what shaped cheeses did you find in the fridge?'
- b. Két **milyen alakú aprócska** sajtot találtál a hűtőben?
Four what shape tiny cheese.ACC found-1SG the fridge.in
'Four what shaped tiny cheeses did you find in the fridge?'

3 THE MAIN THESES AND STRUCTURE OF THE DISSERTATION

The dissertation is divided into six sections. The first and last section are the introduction and conclusions. The introduction contains some of the key notions for this dissertation, while the conclusion gives a summary of the thesis. The main chapters consider the main approaches to pied-piping (chapter 2), the background of the tested A-bar movements in Hungarian (chapter 3), the experiments (chapter 4) and the discussion and tentative proposal to account for the pattern found in Hungarian pied-piping by prenominal modifiers.

In chapter two I give an overview of the theories on pied-piping starting from Ross (1967) and Emonds (1979, 1985) who account for pied-piping as a type of movement which is only possible when the feature-bearing element otherwise could not move out of the phrase containing it. Another group of theories assume that features can percolate upwards from the feature-bearing element to the maximal projection containing them (Chomsky 1973, Sells 1985, Webelhuth 1989, 1992). Feature percolation is only allowed from specifier or head positions, which constrains pied-piping by the position the feature-bearing element takes inside the phrase (XP). Yoon (2002) claims that pied-piping is similar to quantifier raising (QR), that is, the feature bearing element needs to move to the left edge of the containing phrase – either overtly (in the case of *wh*-fronting languages) or covertly (in the case of *wh*-in-situ languages) – and pied-piping can happen until the movement can happen in LF.

Heck (2008) analysis pied-piping in Optimality Theory with constraints that are ordered with respect to one another and they are gradient and violable. He claims that there is a locality condition on pied-piping with respect to the feature-bearing element, that is, the feature-bearing element has to move to the leftmost position in the containing phrase to be as close to the feature-bearing head in CP as possible. Huhmarniemi (2012) builds on this analysis and presents an approach to pied-piping in Finnish. She assumes that there is inner *wh*-movement inside the pied-piped phrase that serves the purpose of getting the feature-bearing element as close to the edge as possible, making the relationship of the C head and the feature bearing element as local as possible.

Cable (2010) building on Horváth (2007) makes use of a Q operator with its own q feature that attaches to the phrase containing a *wh*-element. Cable (2010) distinguishes languages based on the need for Agreement between the feature of Q and the feature on the *wh*-element. Pied-piping is allowed and unrestricted in languages that do not have a need for Agreement between the two features. Movement is triggered in both cases by the operator that moves the *wh*-element containing XP to the CP domain. This way, he questions the existence of traditional pied-piping, in which case the movement should have been triggered by the *wh*-element inside the XP.

None of the approaches presented in chapter 2 are able to describe the pattern of pied-piping in Hungarian A-bar movements. Parts of the approaches, however, are important for the understanding of the picture painted by the experiments.

In chapter 3 I present the background to the tested A-bar constructions in Hungarian. First I present the theories on the focus phrase and exhaustive interpretation in Hungarian. In one group of theories focus-movement is triggered by a syntactic focus-feature (Bródy 1995, É. Kiss 1998) that is the feature of the constituent that is moved to the specifier position of the designated and unique Focus Phrase. É. Kiss (2006) abandons the idea of a syntactic focus-

feature, and claims that structural focus is a specificational predicate, and the constituent that is pre-verbal is situated in the specifier position of PredP. Horváth (2007) assumes a separate semantic operator that expresses exhaustivity, which attaches to the XP that will be understood exhaustively. The movement is triggered by the operator that moves the XP to the specifier of the Exhaustive Identification Phrase. Szendrői (2003) presents an account based on prosody. She claims that the movement is triggered by a prosodic need of the focused element. The focused element needs to bear the main stress of the intonational phrase which is located on the left edge of the sentence in Hungarian.

Next, I discuss theories on *wh*-movement in Hungarian. It is a widely accepted view that *wh*-movement and focus-movement have the same position where they move the given feature-bearing element (É.Kiss 2002, Kenesei 1994). *Wh*-phrases are considered to be exhaustive because the answer to a question is exhaustive. The *wh*-feature is considered to be a syntactic feature that is responsible for the movement of the *wh*-phrase. Cable (2008) shows, however, that the answer to a *wh*-phrase is not necessarily exhaustive, it can also be a partial answer and thus he claims that exhaustivity cannot be a feature of the *wh*-element.

Then I turn to relativization. Relative pronouns have a syntactic feature on them. Movement is triggered by the feature. The inner structure of relative pronouns is complex. The relative pronoun has to be the leftmost element in the relative clause (CP).

In chapter 4, I present the experiments conducted during the research process. I give the statistical analyses and charts to the results of the experiments. In this chapter, there is a discussion to each experiment, where I draw the conclusions of the given experiment. At the end of this chapter I discuss the overall results of the experiments. The main findings of the experiments are the following:

1. Pied-piping by pre-nominal adjuncts is acceptable in focus constructions without any restrictions.
2. Pied-piping by prenominal adjuncts is acceptable in *wh*-constructions, with some restrictions on non-discourse-linked *wh*-phrases.
3. Pied-piping by prenominal adjuncts is not acceptable in relativization – although there is a clear difference between discourse-linked and non-discourse linked relative pronouns.
4. Discourse-linking causes a degradation in each construction type, even with focus-movement, though the effects are not statistically significant in focus-movement.

Based on the results of the experiments we can give the following answers to the research questions:

Research Question 1: Is there a syntactic focus-feature on the element that is prosodically prominent?

The answer to Research question 1 is that focus-movement seems to be motivated by a prosodic need, the need to occupy a prosodically prominent edge position inside the intonational phrase (following Hamblou and Szendrői 2017). There might be a lexical feature on the focused element, but it is not a strong syntactic that is responsible for the movement.

Research Question 2: Does focus-pied-piping show similarities in the restrictions on pied-piping to the other A-bar movement types – which are restricted with regards to pied-piping? The two other A-bar movements are relativization involving a syntactic [rel]-feature on the relative pronoun and *wh*-movement involving a syntactic [wh]-feature on the *wh*-pronoun.

The findings indicate that *wh*-movement patterns with focus-movement with respect to the constraints of pied-piping. There is a three level distinction, focus-movement is unrestricted in pied-piping, *wh*-movement is unrestricted with discourse-linked *wh*-phrases, and more restricted with non-discourse-linked *wh*-phrases, and lastly pied-piping is unacceptable in relativisation. This leads me to believe that there is no syntactic *wh*-feature either, the distinction between discourse-linked and non-discourse-linked *wh*-phrases cannot be encoded in syntax, however, at this stage of the research it is not yet clear what the difference lies in.

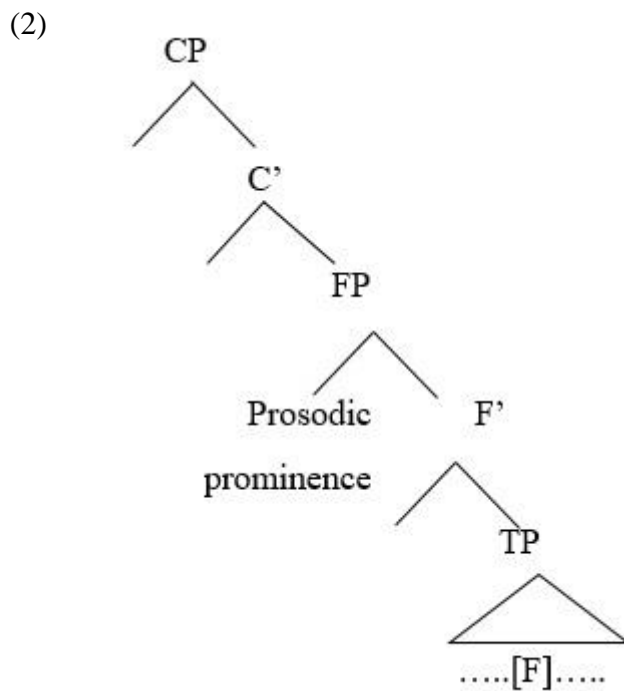
Research Question 3: Does *wh*-movement in Hungarian align with relative-movement or with focus-movement?

Wh-movement in Hungarian aligns with focus-movement with regards to its pied-piping behavior.

	SYNTACTIC FEATURE	PROSODIC PROMINENCE	PIED-PIPING
FOC	no	yes	ok
WH	no	yes	ok
REL	yes	no	*

4 A tentative proposal

Pied-piping shows a pattern different from the one reported in Horváth (1997, 2000, 2005, 2010). Horváth's claim that pied-piping in focus-movement is unrestricted was verified, however, based on the results of the experiment, I found that pied-piping is acceptable and unrestricted in *wh*-movement in Hungarian. Based on the findings, the existence of a syntactic focus-feature is not supported, but at the same time, the existence of a syntactic *wh*-feature becomes questionable. Both *wh*-features and focus-features need to move to the left periphery of the sentence, and both features have to bear the main accent of the sentence (Szendrői 2003, 2010). These similarities and the pied-piping behavior of the two movement types exhibit lead me to believe that the motivation for movement cannot be a [foc]-feature or a [wh]-feature. I propose that the given elements (that is, the focused phrase and *wh*-phrase, or the phrase that contains them) move to the left periphery of the sentence for prosodic reasons, following Szendrői (2003). The position the phrase takes in the sentence is the one that bears default sentence-level prosodic prominence (i.e., the nuclear pitch accent). This position is housed in a functional projection in the CP-domain of the sentence (as in (2)).



(3) [_{IntP} Prosodic prominence[_{PhonP} [_{XP} ...[F]...]]]

A prosodic account can be extended to why attributive *wh*-elements prefer to move leftward within an NP. This behavior is expected if we accept that *wh*-phrases in single *wh*-questions prosodically function as a focus, and two further assumptions are made. First, focus favors a more prominent prosodic position over a less prominent prosodic position. Second, within a noun phrase with two pre-nominal attributes, the syntactic position of the first attribute receives a higher degree of metrical prominence by default than does the second attribute (this is in conformity to the assumptions made in É. Kiss (1992)). It follows from these assumptions that if the pre-nominal attribute A2 that canonically comes second after another attribute A1 in a noun phrase is prosodically focused, then A2 will favor a syntactic position in which it comes before that other attribute A1. This is exactly the pattern we found in Experiment 7.

In future research I would like to explore how other constructions behave in pied-piping. Based on the literature, there are other constructions to take a look at in Hungarian (such as PP-pied-piping, pied-piping by a complement, pied-piping in topicalization if it is possible). I would like to investigate what makes discourse-linked and non-discourse-linked phrases different. Although pied-piping in relativization proved to be unacceptable in Hungarian, there is a clear effect of discourse-linking, that is, people find pied-piping marginally (more) acceptable when the relative pronoun is discourse-linked.

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SCIENTIFIC ACHIEVEMENTS IN THE RESEARCH TOPIC

PUBLICATIONS

Keresztes J. (megjelenés alatt): Pied-piping by a wh-adjective in Hungarian – an experiment.
in: Argumentum.

Keresztes, J.(2017): Főlérendelt összetevő mozgatás és a fókuszjegy a magyarban (Pied-piping and the focus-feature in Hungarian), in:Gécseg Zsuzsanna (ed.) LingDok 16. Nyelvészdoktoranduszok Dolgozatai. Szeged.

Keresztes, J. (2016): Pied-piping and Focus in Hungarian. In: Ludmila Veselovská, Jeffrey K. Parrott and Markéta Janebová (eds.) Proceedings of the Fifth Central European Conferences of Postgraduates Students. Olomouc. Palacky University, ISBN 978 80 244 4904-3

PRESENTATIONS AT CONFERENCES

2019:

LingBaW (Linguistics Beyond and Within) Lublin, Poland

Talk: "Focus-feature and wh-feature in light of pied-piping behavior in Hungarian"

2018:

LSA 2018 (Annual Meeting of the Linguistics Society of America), Salt Lake City, Utah, USA;

Poszter: 'Pied-piping by adjectival adjunct in Hungarian' (társszerző: Balázs Surányi)

2017:

ConSOLE XXV (25th Conference of the Student Organization of Linguistics in Europe), Leipzig, Germany;

Poszter: 'Pied-piping of adjuncts in Hungarian'

2015:

8th Athens Postgraduate Conference, Athens, Greece;

Előadás: Pied piping in Hungarian Focus Constructions

CECIL'S (Central European Conference in Linguistics for Graduate Students), Olomouc, Czech Republic;

Előadás: [Focus]-feature: Evidence from Pied-piping in Hungarian

LingBaw (Linguistics Beyond and Within), Lublin, Poland;

Előadás: Focus feature – An experimental View from Pied-piping

LingDok (Nyelvészdoktoranduszok Országos Konferenciája), Szeged, Hungary;

Előadás: Pied-piping a magyarban – egy empirikus vizsgálat felé