

# Pied-piping by pre-nominal adjuncts in Hungarian

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**Two recent approaches** Ross (1967) coined the term *pied-piping* to refer to constructions in which instead of the element E targeted by a movement operation (=the pied-piper) it is a larger constituent containing E (call it YP) that gets moved. A key type of constraints that have been proposed to restrict pied-piping cross-linguistically requires E to be syntactically local to the syntactic boundary of YP. Cable (2010) assumes that in *wh*-pied-piping the sister of YP is a Q-operator, and YP is a phase in terms of Chomsky's (2000) phase theory. In languages that require Q to *wh*-Agree with the *wh*-feature of E, Q can only Agree with E if E is located in the edge of YP. In such languages (with a *wh*-Agreeing Q) it is predicted that if E is not generated in Edge,YP, then pied-piping will trigger the movement of E to that position (similarly to [Q [[*How big*] a \_\_\_ *fish*]] *did you catch?*). Heck (2008) proposes an Optimality Theoretic approach. One highly ranked constraint, Local Agreement requires a *wh*-feature bearing E within a pied-piped phrase YP to move structurally as close to the dominating YP node as permitted by other, more highly ranked constraints.

**Experimental design and predictions** *Design:* In an acceptability rating experiment we investigated word order preferences inside pied-piped DPs with one of the two types of basic word order in (1a) and (2a) (Num = cardinal numeral). The non-*wh* conditions involved these basic orders, and the inverted orders in (1b) and (2b). The *wh*-condition was formed by using a *wh*-counterpart of Adj2, and it also involved both the basic and the inverted word order, as in (1') and (2'). *Predictions:* For (1') Heck (2008) predicts that (1'b) will be the preferred word order. Specifically, the movement of Adj2<sub>WH</sub> is licensed as Adj2<sub>WH</sub> needs to be structurally as close to DP as possible. On Cable's approach, if Hungarian has *wh*-Agreeing Q, then the expectation is the same, since Adj2<sub>WH</sub> must be at the Edge of the DP phase; if Q is non-*wh*-Agreeing, the basic word order (1'a) will prevail. As for (2'), it must be noted first that independent constraints preclude the raising of adjectival modifiers to the left of Num in the Hungarian DP (1c). Given this, the two theories make diverging predictions. Heck predicts Adj2<sub>WH</sub> to move as close to the DP node as grammatically possible (2'b). By contrast, Cable predicts that Adj2<sub>WH</sub> will not move as in (2'b) because this would not get Adj2<sub>WH</sub> to Edge,DP. If Hungarian has *wh*-Agreeing Q, then the basic order in (2'a) is expected to be unacceptable (as Adj2<sub>WH</sub> is not in Edge,DP), while if Q is non-Agreeing, then (2'a) will be preserved again.

- (1) a. [<sub>DP</sub> Adj1 Adj2 N]                      (2) a. [<sub>DP</sub> Num Adj1 Adj2 N]  
    b. [<sub>DP</sub> Adj2 Adj1 N]                      b. [<sub>DP</sub> Num Adj2 Adj1 N]                      c. \* [<sub>DP</sub> Adj1/Adj2 Num N]  
(1') a. [<sub>DP</sub> Adj1 Adj2<sub>WH</sub> N]                      (2') a. [<sub>DP</sub> Num Adj1 Adj2<sub>WH</sub> N]  
       b. [<sub>DP</sub> Adj2<sub>WH</sub> Adj1 N]                      b. [<sub>DP</sub> Num Adj2<sub>WH</sub> Adj1 N]

**Method** Two subexperiments were conducted online: one tested (1) and (1') (sample items in Ex.1 and Ex.1' below), and the other tested (2) and (2') (sample items in Ex.1 and Ex.1' below). Adult participants gave judgments on a Likert scale in both subexperiments (n<sub>1</sub>=135, n<sub>2</sub>=61). 24 (=4x6) target sentences were mixed with twice as many filler sentences. The DP was in an immediately pre-verbal position within all target sentences, and the phonological weight (syllable count) of Adj1 and Adj2 was identical in each target item. Presentation order was randomized. The results were statistically analyzed using mixed effects models.

**Results and conclusion** The baseline word orders were verified: (1a/2a) was preferred to (1b/2b). By contrast, the inverted order of pre-nominal adjuncts was preferred in the *wh*-conditions, independently of the presence of Num. These results are in line with Heck's predictions formulated in terms of a graded notion of structural locality of E to the YP node, while they pose a challenge to Cable's phase-based approach both if Q is taken to be of a *wh*-Agreeing type in Hungarian and if it is not.

- (Ex.1) a. **Unalmas családi** filmeket forgattak a városban.  
        Boring family movies.ACC filmed.3PL the city.in  
       b. **Családi unalmas** filmeket forgattak a városban.
- (Ex.1') a. **Unalmas milyen típusú** filmeket forgattak a városban?  
          Boring what type movies.ACC filmed.3PL the city.in  
        b. **Milyen típusú unalmas** filmeket forgattak a városban?
- (Ex.2) a. Két **óriási ovális** tálat vettem a piacon.  
        Two huge oval bowl.ACC bought.1SG the market.on  
       b. Két **ovális óriási** tálat vettem a piacon.

- (Ex.2') a. Két **óriási** **milyen alakú** tálat vettél a piacon?  
Two huge what shape bowl.ACC bought.2SG the market.on
- b. Két **milyen alakú** **óriási** tálat vettél a piacon?