In-situ *wh-hell*: The view from Hungarian

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Introduction. Aggressively non-D-linked *wh*-phrases – or *wh-hell* phrases for short – are banned from appearing in situ in multiple-*wh* questions in English (1) (Pesetsky, 1987). However, this ban does not hold cross-linguistically: in Hungarian, *wh-hell* phrases may appear both ex situ (1a) and in situ (1b).

(1) a. **Who the hell** loves who?
b. *Who loves **who the hell**?

(2) a. ***Ki a fene*** *szerelmes kibe?*
who the hell in.love who-ILL
'Who the hell is in love with who?'
b. *Ki szerelmes* ***ki a fenébe****?*
who in.love who the hell-ILL
'Who is in love with who the hell?'

In this contribution, we argue that the distribution of Hungarian *wh-hell* and its effect on the interpretation of a question follow from non-D-linkedness. Crucially, non-D-linkedness does not drive overt movement in Hungarian (cf. Huang and Ochi, 2004), and although *wh-hell* is polarity-sensitive in Hungarian, it is not sensitive to the type of intervention effect proposed by den Dikken and Giannakidou (2002). Our proposal therefore challenges the cross-linguistic applicability of current views on in situ *wh-hell*.

Data. In Hungarian, multiple-*wh* questions (MWHs) may be formed by fronting one *wh*-phrase to Spec,FocP and leaving the other in situ (3a), or by moving one *wh* to Spec,FocP and another above it (3b) (Surányi, 2002; Surányi, 2006). Both single-pair (SP) and pair-list (PL) readings are available in partial-fronting MWHs (3a). Only PL is available in multiple-fronting MWHs (3b) (Surányi, 2002).

(3) a. ***Ki*** *_ nézett rá kire?* [partial-fronting: SP, PL]
who looked on who
'Who looked at who?'
b. ***Ki mit*** *_ vett _ ?* [multiple-fronting: *SP, PL]
who what bought
'Who bought what?'

In partial-fronting MWHs, *wh-hell* may appear both ex and in situ. In contrast to (3a), only a SP-reading is available when *wh-hell* is ex situ.

(4) a. ***Ki a fene*** *_ nézett rá kire?* [ex situ: SP, *PL]
who the hell looked on who
'Who the hell looked at who?'
b. *Ki _ nézett rá* ***ki a fenére****?* [in situ: SP, PL]
who looked on who the hell
'Who looked at who the hell?'

In multiple-fronting MWHs, *wh-hell* must be the lowest of the two fronted *wh*-phrases. As in (3b), only a PL-reading is available.

(5) a. *Ki* ***mi a fenét*** *_ vett _ ?* [ex situ/low: *SP, PL]
who what the hell bought
'Who bought what the hell?'
b. **Ki a fene mit _ vett _ ?* [ex situ/high: *SP, *PL]
who the hell what bought

Q-particle approach to MWHs. We couch our analysis of Hungarian MWHs within the Q-particle approach of Kotek (2014) (see also Cable 2010; Hagstrom 1998). We assume that Hungarian *wh*-questions involve a Foc° with the features $[uQ, uF]$ (cf. Surányi, 2002; Surányi, 2006). A Q-particle with $[iQ]$ may merge with a *wh*-DP, projecting a QP. Foc°$_{[uQ,uF]}$ probes for $[iQ]$ and $[iF]$, resulting in the overt movement of a QP to Spec,FocP. If another QP moves overtly, it targets a higher CP-position, as in (6a) (Surányi, 2002; Surányi, 2006). When a *wh*-phrase stays in situ in overt syntax, we assume it is either not merged with Q (leading to a SP-reading), or it is, but Q does not project (PL-reading) (6b).

(6) a. $[_{CP}\ wh_{[iQ]}\ [_{FocP}\ wh_{[iQ,iF]}\ \text{Foc}^{\circ}_{\cancel{[uQ,uF]}}\ [_{IP}\ \ldots\ ]]]$ [multiple-fronting MWH]

b. $[_{CP}\ [_{FocP}\ wh_{[iQ,iF]}\ \text{Foc}^{\circ}_{\cancel{[uQ,uF]}}\ [_{IP}\ \ldots\ wh_{([iQ])}\ \ldots\ ]]]$ [partial-fronting MWH]

At LF, Q adjoins to the clausal spine, takes a $\{\langle st,t\rangle, \langle\langle st,t\rangle,t\rangle, \ldots\}$-type argument α, and sets (i) the ordinary semantic value $[\![\text{Q}(\alpha)]\!]^o$ to correspond to $[\![\alpha]\!]^f$, and (ii) the focus semantic value $[\![\text{Q}(\alpha)]\!]^f$ to correspond to $\{[\![\text{Q}(\alpha)]\!]^o\}$. As the ordinary semantic value of *wh*-phrases is undefined (Beck, 2006), at least one Q is required for the well-formedness of the structure. Due to the semantics of Q, the ordinary semantic value of the question is determined by the focus semantic value of the *wh*-phrase (e.g. $[\![who]\!]^f$ = $\{x \mid person(x)\}$), which composes with the rest of the question via pointwise functional application (Hamblin, 1973). Crucially, SP-MWHs involve one Q, and the resulting question is of type $\langle st,t\rangle$, while PL-MWHs involve two Qs sandwiched between the *wh*s, and a family-of-questions denotation of type $\langle\langle st,t\rangle,t\rangle$. In a family-of-questions denotation, the higher *wh* functions as the D-linked 'sorting key' (thus, in e.g. *Who kissed whom?*, kissers are mapped to kissees). The relevant configurations are shown schematically in (7); all movement to the CP is left unsignalled (only the configuration matters).

(7) a. Q ... *wh* ... *wh* [SP: $\langle st,t\rangle$]

b. Q ... wh_{key} ... Q ... *wh* [PL: $\langle\langle st,t\rangle,t\rangle$]

Predictions. We now present two (compatible) predictions concerning *wh-hell* under the Q-particle approach to Hungarian MWHs. First, den Dikken and Giannakidou (2002) propose that *wh-hell* phrases are negative polarity items (NPIs), and must be licensed by Q in matrix questions. This licensing relationship is sensitive to intervention; no *wh*-phrase may appear between Q and *wh-hell* (8). This means that SP-, but not PL-MWHs with in situ *wh-hell* are predicted to be ungrammatical in Hungarian (8).

(8) *Q ... *wh* ... *wh-hell* [licensing-intervention approach predicts: *SP, in situ]

We propose that it is non-D-linkedness that matters for Hungarian *wh-hell*. Thus, we simply predict *wh-hell* to be unacceptable whenever it is the D-linked sorting key in a MWH with a PL-reading (9).

(9) *Q ... *wh-hell*$_{*key}$ ... Q ... *wh* [non-D-linkedness approach predicts: *PL, ex situ/high]

Hungarian MWHs: (8) vs (9). The schematic LFs of the MWHs in (4) and (5) are shown in (10) and (11). In (10a), the presence of a lower Q would lead to a PL-reading where *wh-hell* is the sorting key; hence, only a SP-reading is available. In (10b), both SP and PL are available. While (8) incorrectly predicts *SP for (10b), (9) correctly predicts it to be fine, as *wh-hell* is not a sorting key in SP-(10b).

(10) a. Q ... *wh-hell*$_{(*key)}$ ... (*Q) ... *wh* [(4a): SP, *PL]

b. Q ... $wh_{(key)}$ ... (Q) ... *wh-hell* [(4b): SP, PL]

In multiple-fronting MWHs, which involve two Qs and are never SP, the higher *wh* is the sorting key, and thus incompatible with *hell*. The data in (5) therefore also support (9).

(11) a. Q ... wh_{key} ... Q ... *wh-hell* [(5a): *SP, PL]

b. *Q ... *wh-hell*$_{*key}$ ... Q ... *wh* [(5b): *SP, *PL]

Conclusion. In English, the ban on in situ *wh-hell* has been linked to its non-D-linkedness (Pesetsky, 1987) and to an intervention effect (den Dikken and Giannakidou, 2002). Hungarian, a language with overt *wh*-movement, shows that non-D-linkedness does not necessarily lead to movement, and that the licensing of *wh-hell* is not sensitive to *wh*-intervention – just like the licensing of other NPIs is not (12).

(12) Which student read any of these papers? (den Dikken and Giannakidou, 2002, (4b))

Instead, the distribution of Hungarian *wh-hell* and its effect on the interpretation of a question (SP vs. PL) follows if the aggressively non-D-linked *wh-hell* can never be the sorting key of a MWH with a PL-reading. Under this approach, the ban on in situ *wh-hell* in English remains unexplained (see Huang and Ochi, 2004 for a possible explanation). However, the proposal does predict that on the PL-reading of (13), the lower *wh*-phrase must be the sorting key. Intuitively, this seems to be correct.

(13) I want to know who the hell voted for who.

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