Two types of quantifier particles:
Quantifier-phrase internal vs. heads on the clausal spine*
Anna Szabolcsi, Sept. 2017, submitted

Abstract The paper discusses two types of particles in Hungarian that both participate in reiterated constructions, among others. It is argued that they are syntactically quite different. The particles that precede their hosts are quantifier-phrase internal. They must occur in tuples and they also build quantifier words. The particles that follow their hosts are heads on the clausal spine. They do, but need not, occur in tuples and do not build quantifier words. The two types also differ in having their own distinct internal “connectives” and in forming strict vs. non-strict negative concord items. The paper focuses on their syntax, using ellipsis and concord for determining details.

Keywords particle, quantifier, reiteration, Hungarian

1. Introduction

Languages like Japanese and Malayalam have particles that occur in all of the following three constructions (possibly also in others):

(1) a. dare-mo, dono-kyouju-mo ‘everyone, every prof’ (Szabolcsi et al. 2014:142)
    b. John-mo Mary-mo ‘John as well as Mary’ (Szabolcsi et al. 2014:146)
    c. kare-mo ‘also/even he’ (Szabolcsi et al. 2014:139)

(2) a. aar-um, eppoozh-um ‘anyone, always’ (Jayaseelan 2001:65)
    b. John-um Bill-um Peter-um ‘John and Bill and Peter’ (Jayaseelan 2001:64)
    c. oru kúTTi-(y)um ‘a child also’ (Jayaseelan 2011:281)

The existence of the above paradigms in historically unrelated languages suggests that they do not result from accidental homonymy. Szabolcsi et al. (2014) and Szabolcsi (2015) argued that a truly compositional analysis must offer a unified semantics for the full range of each particle’s occurrences. Dubbing the particles in (1)-(2) and their cross-linguistic relatives generically as MO particles, Szabolcsi (2015) took the time-honored analysis of the additive particle use in (c) as a point of departure. MO introduces the presupposition that there is a focus-alternative of its host that exhibits the same property as the host. In the iterated (b) construction, each MO introduces the same additive presupposition. However, these presuppositions are locally satisfied and therefore do not project to the larger context. In John MO Mary MO laughed, John’s laughing satisfies the presupposition introduced by the MO attached to Mary, and conversely, Mary’s laughing satisfies the presupposition introduced by the MO attached to John. The universal quantifier in (a) can be seen to generalize this, element by element, to the whole set in the denotation of the indeterminate pronoun or nominal host of MO.
While arguing for a unified analysis, Szabolcsi pointed out the apparent need for finer distinctions based on Japanese and Hungarian:

“Shimoyama (2006, p. 147) suggests that *mo ‘every/any’ and *mo ‘too/even’ are distinct, in view of the fact that an intervening *mo ‘too’ does not block the association of an indeterminate pronoun within a relative clause with *mo ‘every’ outside the relative clause. Shimoyama does not specify exactly how the two *mo’s have to be distinct in order not to interfere with each other. But the fact that Hungarian covers the territory of *mo with two distinct segments, *mind and *is, would be consonant with Shimoyama’s suggestion that there is a difference. See [2], repeated as [51]:

\[
\begin{array}{ccc}
[51] & a. & \text{mind-en-ki} & \text{dare-mo} & \text{‘everyone/anyone’} \\
 & b. & \text{mind A mind B} & A-mo B-mo & \text{‘A as well as B, both A and B’} \\
 & c. & A is (és) B is & A-mo & \text{‘A as well as B, both A and B’} \\
 & & A is & A-mo & \text{‘A too/even A’}
\end{array}
\]

The relation between *mind and *is has not been investigated, and I have nothing useful to add here. But, *mind A mind B is synonymous with *A is (és) B is. This suggests that, by transitivity, mind(eni) and *is legitimately belong under the same semantic umbrella. The expressions in [51] also occupy the same surface syntactic position in Hungarian (specifier of Dist); see Brody (1990) and Szabolcsi (1997).” Szabolcsi (2015:183)

What is the difference between *mind and *is, then? It turns out that *mind and *is represent two distinct families of particles in Hungarian. The present paper takes up the puzzle posed by [51] with reference to those families, and argues the following:

(3) The Hungarian particles that precede their hosts are quantifier-internal.
(4) The Hungarian particles that follow their hosts are heads on the clausal spine.

Here are the systematic differences between the two types. The particle *sem occurs in both columns. The double life it leads makes the comparison of the two types especially convenient.

(5)

<table>
<thead>
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<th>Quantifier-internal, cf. (3)</th>
<th>Head on the clausal spine, cf. (4)</th>
<th>see section</th>
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<td>*mind, vagy, akár, *sem</td>
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<td>particle precedes host</td>
<td>particle follows host</td>
<td></td>
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<tr>
<td>must be part of a tuple</td>
<td>need not be part of a tuple</td>
<td>2.2</td>
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<td>tuple-internal connective: *pedig ‘lastly’</td>
<td>tuple-internal connective: *és ‘and’</td>
<td>2.3</td>
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<td>builds quantifier words</td>
<td>doesn’t build quantifier words</td>
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<td>builds non-strict NCIs</td>
<td>2.5</td>
</tr>
</tbody>
</table>

These properties will motivate the overall analyses in (3)-(4) and their ramifications, including the argument that the quantifiers referred to in (3) are, or can be, sentence-size.
Szabolcsi (2015) focused on the cross-linguistically attested general behavior of particles, not on a particular language. Hungarian is, along with Japanese mo and Russian i, was used to illustrate the behavior of MO in its unary and reiterated versions. The analysis of is as a head on the clausal spine is fully compatible with the discussion there. The analysis of mind will be compatible with the claim that is and mind legitimately come under the same semantic umbrella.\(^1\) However, the 2015 claim that there is an unbroken morpho-syntactic line from the unary particles in (c) to the quantifiers in (a) will not hold up, at least not in Hungarian.

2. **Systematic differences between mind-type and is-type particles**

2.1 *Constituent order: Particle precedes vs. follows host*

We begin with demonstrating the most straightforward difference between the two types of particles, already highlighted in (3)-(4): one type precedes and the other follows its host. The examples below also serve to establish how the particles will be glossed. The glosses are chosen to be short and to correspond to one of the usual translations of the particle; note that glosses are not syntactic or semantic analyses.\(^2\)

Hungarian orthography mandates a comma between the members of the iterations. Those commas will help structure the examples for the reader, so I retain them.

(6) \hspace{1em} Particle precedes host

a.  mind Kati, mind Mari \hspace{1em} `K as well as M, both K and M’
    all Kati all Mari

b.  vagy Kati, vagy Mari \hspace{1em} `either K or M, not both’
    or Kati or Mari

c.  akár Kati, akár Mari \hspace{1em} `whether/either K or M’
    even Kati even Mari

d.  sem Kati, sem Mari \hspace{1em} `neither K nor M’
    nor Kati nor Mari

(7) \hspace{1em} Particle follows host

a.  Kati is, Mari is \hspace{1em} `K as well as M, both K and M’
    too Kati too Mari

b.  Kati sem, Mari sem \hspace{1em} `neither K nor M’
    nor Kati nor Mari

When they occur in subject position, all of these trigger singular agreement on the verb, which is generally the case with coordinations in Hungarian:

\(^1\) Mitrović & Sauerland (2016) discuss a distinction between particles that combine with e-type vs. t-type hosts in Japanese and other languages. But that must be an entirely independent issue. In fact, neither of the construction types in Hungarian that I discuss have e-type juncts. They do not support any kind of collective readings in their reiterated or quantifier-word versions.

\(^2\) The particle mind also serves as a floating quantifier, hence the gloss ‘all.’ The free-choice particle akár is etymologically related to akar ‘want,’ a cross-linguistically not unusual situation (Haspelmath 1997). The gloss ‘even’ is inspired by Abrusán’s (2007) analysis of akár as ‘even’ in one non-reiterated use.
(8) a. Kati és Mari aludt.
    Kati and Mari sleep-past.3sg 'K and M slept'
b. Mind Kati, mind Mari aludt.
    all Kati all Mari sleep-past.3sg 'K as well as M slept'
c. Kati is, Mari is aludt.
    Kati too Mari too sleep-past.3sg 'K as well as M slept'

2.2 Particle preceding its host must be part of a tuple; particle following its host is happy on its own

The first sign that the two constructions are significantly different is that one of them is restricted to tuples (pairs, triples, etc.) whereas the other is not. This is most straightforwardly borne out by comparing mind (9a) with is (10a) and host-following sem (10b). In the cases of vagy (9b), akár (9c), and host-preceding sem (9d), certain unary occurrences are grammatical, but on special interpretations; I comment on them in footnotes (fn. 3 pertains to two items).

(9) Particle precedes host -- must be part of a tuple

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<tbody>
<tr>
<td></td>
<td>all Kati slept</td>
<td>slept all Kati</td>
</tr>
<tr>
<td>b.</td>
<td>*Vagy Kati aludt.³</td>
<td>*Aludt vagy Kati.</td>
</tr>
<tr>
<td></td>
<td>or Kati slept</td>
<td>slept or Kati</td>
</tr>
<tr>
<td></td>
<td>nor Kati not slept</td>
<td>not slept nor Kati</td>
</tr>
<tr>
<td>d.</td>
<td>*Akár Kati aludt, nem számít.⁴</td>
<td>*Aludt akár Kati, ...</td>
</tr>
<tr>
<td></td>
<td>even Kati slept, not matters</td>
<td>slept even Kati</td>
</tr>
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</table>

³ It was pointed out in Szabolcsi (2015: 165) that English or has a unary use; I now add that neither/nor does too. The same holds for Hungarian vagy and sem. Consider the following discourses:

(i) A: Mary is at home.
    B: Or (perhaps) KATE is at home.
(ii) A: Mary wasn’t home.
    B: Neither/nor was KATE.

In both cases, B’s response re-evaluates what A just said. It incorporates A’s assertion into a (positive or negated) disjunction, so to speak. This use is restricted to the sentence-initial position, and in (ii) it clearly involves inversion:

(i') A: He invited Mary.
    B: Or KATE. / *He invited or KATE.
(ii') A: He didn’t invite Mary.
    B: Nor (did he invite) KATE. / *He invited nor Kate.

Hungarian vagy and pre-host sem have similar uses. In this paper I do not offer an analysis for these data in English or Hungarian, but I contend that they are very different from the entirely neutral and unconstrained varieties with is and post-host sem.

⁴ Hungarian reiterated akár may form either plain free-choice expressions that must be accompanied by a possibility modal (cf. either_or) or unconditionals (cf. whether_or), cf. Rawlins (2013). The ungrammatical past episodic example in (d) is an unconditional. As (iii) shows, free choice with a modal is acceptable in the unary version. But, unlike in the reiterated akár version, an additional particle (is) or very high stress is needed. The is-ful and the is-less constructions are critically distinct.
Particle follows host -- happy on its own
a. Kati is aludt. Aludt Kati is.
Kati too slept slept Kati too
Kati nor slept not slept Kati nor

A plausible explanation of the contrast is that the particle that precedes its host is destined to participate in a larger coordination, whereas the particle that follows its host is part of an entirely independent clause that may or may not be coordinated with other clauses. A preliminary representation of the difference should help with keeping track of the data:

    b. PrtP = IsP, SemP

2.3 Different optional connectives inside the tuples

Reiterated constructions of both types optionally contain what I will call “connectives” -- but different connectives, *pedig* vs. *és*. The two are not interchangeable, nor do they combine. I illustrate the lack of interchangeability or combinability with one pair, and afterwards give only grammatical examples.

(12) a. sem Kati, sem **pedig** Mari
    b. * sem Kati, sem és Mari
    c. * sem Kati és sem Mari
    d. * sem Kati és sem pedig Mari
    e. Kati sem és Mari sem
    f. * Kati sem, Mari pedig sem
    g. * Kati sem, pedig Mari sem
    h. * Kati sem és Mari pedig sem

(iii) a. ?? Akár Kati alhat itt. vs. a’. Akár Kati, akár Mari alhat itt.
b. Akár Kati is alhat itt. b.’ * Akár Kati is, akár Mari is alhat itt.
‘Even Kati can sleep here’ ‘Either Kati or Mari can sleep here’
(13) “Particle precedes host”
   a. mind Kati, mind (pedig) Mari 'K as well as M'
   b. vagy Kati, vagy (pedig) Mari 'either K or M, not both'
   c. akár Kati, akár (pedig) Mari 'whether/either K or M'
   d. sem Kati, sem (pedig) Mari 'neither K nor M'

(14) “Particle follows host”
   a. Kati is (és) Mari is 'K as well as M'
   b. Kati sem (és) Mari sem 'neither K nor M'

To my knowledge, neither this contrast, nor the connective *pedig* have been discussed in the modern literature in Hungarian (although data of the type of (13) are cited in Lipták 2001, for example). *Pedig* has what seem to be two distinct versions. One version, which may be called adversative, occurs in clause-initial position and can be translated as ‘even though’ or ‘despite the fact’. I will not be concerned with this version here. The *pedig* that interests us follows the topic in the last member of a coordination and can be translated as ‘on the other hand’ or ‘lastly’. More accurately, as a sentential connective this *pedig* marks the last member of a set of partial answers to an overt or covert question, and thus indicates that the answer is now complete:

(15) [Where are the kids?]
    Kati otthon van, Mari (*pedig) az iskolában, Peti (pedig) úszóedzésen.
    'Kati is at home, Mari (*lastly) at school, Peti (lastly) at swim practice'

(16) [Where did you go in recent days?]
    Kedden haza, szerdán (*pedig) az iskolába, pénteken (pedig) úszni.
    'On Tuesday, home, on Wednesday (*lastly) to school, on Friday (lastly) to swim'

In the reiterated particle construction, *pedig* occurs in the last member of the iteration, intervening between the particle and its host. Its interpretation is very much in the spirit of its sentential use illustrated above. For example,

5 For example,
   (i) Elkéstem, pedig siettem.    'I was late, even though I hurried'
   (ii) Nem segíttél, pedig kértelek. 'You didn’t help, even though I asked you to'

According to the Historical-Etymological Dictionary, modern-day *pedig* collapses earlier *pedig*, *penig*, and *kedig*. But no information seems readily available about what the difference between these was, and I never encountered *penig* and *kedig* in the wild.

6 According to Esipova (2016), Russian *a* has a similar interpretation (marking the last member of a set of partial answers), but it is in first position both in clauses and in reiterated particle constructions.

   (i) TO-TO/WHEN-WHEN, necessarily contrastive
      Na každom lyžnom kurorte, kotoryj posešali...
      on each ski resort which visit.IP.FV.PAST.3PL
      a. to americanske, (a) / *i / *ili to nemeckie
      TO American A I or TO German
(17) Ki van otthon? ‘Who is at home?’
   a. Mind Kati mind Mari mind pedig Peti (otthon van).
      all Kati all Mari all lastly Peti (at.home is)
      ‘Kati as well as Mari as well as, lastly, Peti’
   b. Vagy Kati vagy Mari vagy pedig Peti (van otthon).
      or Kati or Mari or lastly Peti (is at.home)
      ‘Either Kati or Mari or, lastly, Peti’

The interpretation of pedig jibes with the fact that it occurs in that construction which always comes in tuples: the tuple as a whole is equivalent to a quantifier ranging over the relevant subset of the universe. In the next subsection we will see this even more vividly.

In contrast, there is nothing special about the optional connective és in the “particle follows host” construction, cf. (14). És is the dictionary equivalent of the most neutral connective, and. (Szabolcsi (2015) argued that Hungarian és is even more devoid of content: it represents a Junction head and merely forms tuples. I will follow that analysis below.)

2.4 Particles that precede their hosts form quantifier words, those that follow do not

Hungarian forms its quantifier words by combining particles with indeterminate pronouns. (Without a particle, the indeterminate pronoun serves as a “question word,” as in Japanese and many other languages.)

We observe that all the particles that precede their hosts build quantifier words:

b. kogda amerikanske, ( a) / *i / *ili kogda nemeckie
   WHEN American A I or WHEN German
   … turisty, ljudi byli s častlivy.
   tourists people were happy
   ‘At each ski resort that was…
   a. ≈ alternately visited by American and German tourists /
   b. ≈ sometimes visited by American and sometimes by German tourists
   … people were happy.’

Likewise, XX (p.c.) informs me that Dutch tenslotte ‘finally’ is a close counterpart of pedig, and it occurs in “neither_nor” disjunctions in positions in which it cannot be treated as a constituent with the nominal string that follows it (according to Verb-Second). He provides the following naturally-occurring example:

(ii) omdat zij noch de hunnen, noch zichzelf, noch tenslotte hun eigen leven
   because they neither the theirs nor themselves nor finally their own life
   ontzien hebben
   spared have
(18) Particle precedes host
   a. mind-en-ki, mind-en(*mi), mind-en-hol7 `everyone, everything, everywhere’
   b. vala-ki, vala-mi, vala-hol ‘someone, something, somewhere’
   c. akár-ki, akár-mi, akár-hol ‘whoever, whatever, wherever’
   d. sen-ki, sem-mi, se-hol ‘no one, nothing, nowhere’

   In contrast, the particle is that follows its host does not form quantifier words, in either order -- see (19a). As we saw in the introduction, in this respect is contrasts with Japanese mo. The NC particle sem of course does participate in quantifier words but, given the double life it leads, there every reason to believe that the items in (19b) are simply instances of (18d).

(19) Particle follows host
   a. * is-ki / ki-is, is-mi / mi-is, is-hol / hol-is
   b. [*] sen-ki, sem-mi, se-hol

   Is does participate in the composition of NPIs and FCIs, see (20), but in that case it combines with a full quantifier word, which is an entirely different matter.

(20) vala-ki is / akár-ki is
someone too whoever too

`anyone, NPI or FCI’

The data just reviewed converge with the observations above. Mind-type particles must be part of a reiterated construction that is semantically equivalent to a quantifier, and they also form actual quantifier words with the indeterminate pronouns that correspond to the same domains as their non-pronominal hosts. Is-type particles on the other hand do not have to be part of a reiterated construction; when they are, those are “accidental” coordinations. They do not build quantifier words. The observations in the next section will amplify these.

2.5 Strict vs. non-strict negative concord items

The negative concord particle sem (more colloquially: se) occurs in both constructions under investigation but, interestingly, builds different kinds of NCIs in the two cases. Hungarian is a negative concord language that is usually thought to be of the strict type, with the sentential negation marker nem always mandatory, as in Russian. But Surányi (2006) showed that it is in fact a hybrid: there is a set of NC-expressions that do not co-occur with nem when they are in preverbal position, mirroring non-strict negative concord languages like Italian. Consider the n-expressions senki `n-one’ and senki sem `n-one nor’ in preverbal position (which distinguishes the two types) and in postverbal position (which does not). All three mean ‘No one slept’.

7 Two comments. (i) The role of the -en morpheme is unknown. (ii) I conjecture that the ungrammaticality of *minden-mi is analogous to the ungrammaticality of *nani-mo (Hiraiwa 2016). The gap extends to all m-based indeterminate pronouns in Hungarian (*minden-milyen, *minden-mekkora, etc.). These matters do not concern us here and are left for future research.
(21) Senki nem aludt. vs. *Senki aludt.  
n-one not slept n-one slept  
pre-V -- strict NC

(22) Senki sem aludt. vs. *Senki sem nem aludt.  
n-one nor slept n-one nor not slept  
pre-V -- non-strict NC

not slept n-one nor slept n-one nor  
post-V -- strict/non-strict

Let’s turn to the reiterated construction. I observe that the two types of reiterated sem construction differ in that the “particle precedes host” one builds a strict NC expression, and the “particle follows host” one builds a non-strict one.

(24) Sem Kati, sem Mari *(nem) aludt.  
nor Kati nor Mari not slept  
pre-V, strict NC

(25) Kati sem, Mari sem (*nem) aludt.  
Kati nor Mari nor not slept  
pre-V, non-strict NC

(26) Nem aludt sem Kati, sem Mari / Kati sem, Mari sem.  
not slept nor Kati nor Mari Kati nor Mari nor  
post-V, strict/non-strict

In other words,

(27) sem Kati, sem Mari ≈ sen-ki  
nor Kati nor Mari n-one  
strict NC, cf. nikto

(28) Kati sem, Mari sem ≈ sen-ki sem  
Kati nor Mari nor n-one nor  
non-strict NC, cf. nessuno

Szabolcsi (2016) analyzes Hungarian negative concord largely following Chierchia (2013), as follows. Both senki `n-one’ and sem `not’ must occur within the immediate scope of clause-mate semantic negation. This negation may be contributed by the Neg head nem `not,’ as in (19), (21). Alternatively, it may be an abstract negation — that the Sem head is capable of invoking, as in (20). Szabolcsi (2016) argues that sem is an overt counterpart of Chierchia’s (2013) phonetically null NEG head and a negative concord counterpart of is.8

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8 A plausible semantics would be this. In a nutshell, senki is an existential that must occur within the immediate scope of clause-mate negation (not just any downward entailing operator). The particle is that sem is the NC-counterpart of activates the alternatives of its specifier and thus forces their exhaustification, in positive and in merely-downward entailing contexts. What kind of exhaustification takes place depends on what kind of alternatives the specifier provides (focus alternatives, subdomain alternatives, scalar alternatives).
In line with the observations above, the \textit{sem} that precedes its host builds a strict negative concord quantifier, either by combining with an indeterminate pronoun, as in \textit{senki} ‘n-one,’ or by enumerating the members of a contextually relevant subset of the domain of the indeterminate pronoun, as in \textit{sem Kati, sem Mari} ‘neither K nor M.’

\textit{Is} ‘too’ is uncontroversially analyzable as a head on the clausal spine that attracts a focus-accented phrase to its specifier. \textit{Sem} is the NC-counterpart of \textit{is}. The strict/non-strict distinction between the “particle precedes host” and the “particle follows host” constructions follows from the structure. In particular, it follows from the fact that the particle that follows its host is a counterpart of Chierchia’s NEG head and, as such, is capable of invoking an abstract negation of the kind that allows n-words in languages like Italian to go without a sentential negation marker when they occur in the preverbal field. (Note that Chierchia’s NEG has no negative semantics whatsoever, despite its name. It co-occurs with a negative operator as a result of a complex agreement mechanism.)

In sum, the negative concord facts square with the generalizations and the informal analyses offered above. We are now ready to move on to a more detailed analysis.

3. \textit{Is and sem} are heads on the clausal spine

My analysis follows the cartographic view of Hungarian syntax. Szabolcsi (1997), Brody & Szabolcsi (2003), and Bernardi & Szabolcsi (2008) among others argue that a sequence of operator heads reiterates above and below the position of the finite verb; the heads overtly attract appropriate phrases to their specifiers. For example, the Ref(erential) head attracts definites and indefinites, the Dist(ributive) head attracts universals and existentials that receive a distributive interpretation in its specifier, and the Count head attracts counting quantifiers (‘exactly two girls’, ‘more than two girls’). Horvath (2000)--(2014) adds the EI head (EI for exhaustive identification) that attracts a phrase modified by \textit{csak} ‘only’ or by a null exhaustive operator to its specifier.

Because the movement of these phrases is overt, it is reflected in linear order at spell-out (for a similar proposal for covert LF-movements in English, see Beghelli & Stowell (1997) and for
an overt version in Kayne (1998)). Linear order then directly maps to c-command, and so it determines the relative scope of the operators (with some complications extensively discussed in Brody & Szabolcsi 2003).

The operator heads are the same in all the iterations, with the main exception that Neg only occurs in the highest one (not indicated in (28)). The order of the operator heads is likewise the same in each of the iterations. However, a fixed order of the phrases is only discernible in the preverbal field. The reason is that T, Asp, and other lower heads that separate the lower iterations do not host phonetically overt material. For example, a counting quantifier can be followed by a referential phrase in the postverbal field if they belong to two distinct iterations.

(30) Hungarian, after Brody & Szabolcsi (2003: 23)

The reiteration of the clausal operator heads is important to us, because is-phrases and sem-phrases occur both preverbally and postverbally. Apart from scope with respect to the preceding and c-commanding material, this makes no difference in their syntactic status.

Is ‘too’ is one of the Dist heads (Brody 1990). Is-phrases are distributive in all their uses (Szabolcsi 1997: 127; 2015: 181). Kati is 100 kilót nyom ‘Kate too weighs 100 kg’ can only mean that Kate weighs 100 kg, in addition to someone else weighing 100 kg. It cannot mean that Kate together with someone else does. Két lány is 100 kilót nyom ‘Even two girls/as many as two girls weigh 100 kg’ can only mean that each of the girls by herself weighs 100 kg, and so on.

Section 3.2.1 of Szabolcsi (2015) discusses reiterated is-is ‘as well as’ expressions at some length. In line with the general approach advocated in that article, she proposes that each is in is_is has the same semantics as it does in the non-iterated cases. X is (és) Y is is analyzed as a propositional conjunction, syntactically held together by a J(unction) head (den Dikken 2006). J can be overt (és) or null. When the overt expressions X and Y are not full sentences, ellipsis must be involved. Ellipsis is optional: the sentence is fully acceptable without it.

(31) a. [ip Kati is 100 kilót nyom [j (és) [Mari is 100 kilót nyom]]]
   ‘Kate as well as Mary weigh 100 kg’

   b. [ip Kati is 100 kilót nyom [j (és) [Mari is 100 kilót nyom]]]
   ‘Kate as well as Mary weigh 100 kg’
The same syntactic analysis carries over to *sem* in the place of *is*.

\[ (32) \]

This analysis straightforwardly explains why *Kati is* and *Kati sem* can occur in tuples but do not have to. The IsP or SemP that contains them can be coordinated with another type *t* unit, but that is never necessary. The analysis is also in line with that of non-strict negative concord, outlined at the end of the preceding section, according to which the Sem head corresponds to Chierchia’s (2013) NEG head for Italian.

4. *Mind, vagy, akár and pre-host sem are quantifier-internal particles*

4.1 *The gist of the analysis*

As was anticipated above, the gist of the analysis of particles that precede their hosts is this:

\[ (33) \]

The idea is that these particles are quantifiers ranging over specific alternatives that coincide with or constitute a subset of those that the corresponding indeterminate pronoun ranges over. Recall the reasoning used above to elucidate the role of *pedig*:

\[ (34) \]

9 The “*≈*” is motivated by the fact that the reiterated *vagy_vagy* construction is exhaustive (see Spector 2014 on *soit_soit* and Szabolcsi 2015, section 3.2.5 for cross-linguistic discussion), whereas *valaki* is a vanilla indefinite like *someone*. However, as pointed out by Szabolcsi, in many languages the same type of reiterated disjunction is not exhaustive: such are Sinhala (Slade 2011), Malayalam and Kannada (Jayaseelan, p.c.), as well as English *either_or* on many of its uses. While exhaustivity needs to be accounted for, it is not an inescapable property of the reiterated construction. It is with this grain of salt that I take *vagy_vagy* and *valaki* to be approximate counterparts.
b. Mindenki (otthon van).
   every-who at.home is
   'Everyone'

As a first approximation, the syntax is either (a) or (b) below. The (a) version was suggested by R. Kayne (p.c.), the (b) one follows Mitrović (2014).

(35) a. JP
   QP
   mind Kati
   J'
   J
   mind
   pedig

   b. JP
   QP
   mind Kati
   J'
   J
   QP
   mind Mari
   pedig

Szabolcsi (2015) argued that the J(unction) head in Hungarian, whether it is és or Ø, merely forms an ordered pair of its specifier and complement. If the interpretation is conjunctive, it is due to a distinct, disembodied meet (∩) operation, following Winter (1995: 394).

(36) Product constructor (pair-former)
   a. The logic used to represent natural language sentences includes types with a product constructor •, where an expression of type a • b is a tuple ⟨ϕa,ψb⟩ construed of the expressions ϕa, ψb of types a and b by the axiom (R1) of product introduction.
   b. Interpreting the complex structure using axiom (R1):
      [[X1 and/Ø X2]] = [[X1]] [[and/Ø]] [[X2]] = [[X1]] [[X2]] ⇒ R1 ⟨[[X1]], [[X2]]⟩
      The coordinator and, like zero morphology, lacks any denotation.
   c. An optional stage: applying the operator GC:
      ∩ ⟨[[X1]], [[X2]]⟩ ⇒ [[X1]] ∩ [[X2]]

Winter made his proposal specifically for structures interpreted as conjunctions; Szabolcsi generalizes it as follows. The interpretation of pairs (tuples) by default uses Winter’s optional stage that introduces the disembodied meet (∩) operation. If however the juncts are decorated with particles that induce specific presuppositions pertaining to the immediately larger context, those can override the default and invoke join (∪). Particles like vagy ‘or’ invoke join, for example. This makes it possible to use the same JP schema in the case of mind_mind as well as vagy_vagy, akár_akár, and sem_sem; there is no danger that they all are interpreted as conjunctions. JP itself only commits to pair formation.

   I assume that the same things happen in the presence of pedig, either in J or inside the last coordinate (junct). Note that pedig occurs equally in JPs whose coordinates are decorated with mind ‘all’ or with vagy ‘or’.

   I come back to the question of how the particles end up on all the coordinates in section 4.3.
4.2 But what size quantifiers?

However, the question arises whether the JPs at hand directly coordinate QPs, or they coordinate larger syntactic units. One fact that indicates that (33) cannot be literally correct is that not only entity-denoting expressions but also quantifiers participate in the reiterated constructions:

(37)  
\begin{align*}
\text{a.} & \text{ mind a } \text{ legtöbb gyerek}, \text{ mind (pedig) néhány felnőtt} \\
& \text{ all the most child all lasty several adult} \\
\text{b.} & \text{ sem a } \text{ legtöbb gyerek}, \text{ sem (pedig) néhány felnőtt} \\
& \text{ nor the most child nor lastly several adult} \\
& \text{‘both/neither most of the children and/nor several adults’}
\end{align*}

Evidence from ellipsis indicates that the coordinated units may well be sentence-size. Let me first illustrate the issue with parallel cases in English:

(38)  
Bring me both the blue _ and the green bottles.  
Bring me either every blue _ or every green bottle.

(39)  
Call both the left _ and the right-handed children.  
Call either the left _ or the right-handed children.

How are these structures derived? They look like Right-Node Raising, which is often handled by movement. But neither bottles in (38), nor hand children in (39) could be shared by the two conjuncts are a result of across-the-board extraction. I thank YY (p.c.) for directing me to unpublished work by Vidal Valmala that solves the problem. Valmala (2012) distinguishes “focal-pivot right-node raising” and “non-focal pivot right-node raising” (he uses the term “right-node raising” as a pre-theoretical cover term). “Focal-pivot RNR” obtains when the shared string (the pivot) has focus accent. Focal pivots are always extractable expressions. For example:

(40)  
She bought _ and put on the table _ THE BIGGEST LAYER CAKE.

“Non-focal pivot RNR” obtains when the last element before the pivot is focused and the pivot crucially is not. In this case the pivot may or may not be an extractable expression; non-extractable ones can only participate in this latter kind of RNR. (38) and (39) would be examples. Valmala argues that here the gap is not a result of movement but interpretation is in-situ. He does not specify the mechanism; I assume it is ellipsis-as-deletion.

Hungarian allows a huge variety of constructions that exemplify the “non-focal pivot RNR” case, in a pure form or in combination with leftward across-the-board extractions. (As YY (p.c.) observes, Hungarian never moves things to the right to be assigned stress, even pretheoretically and non-anti-symmetrically speaking.) Two simple cases:
(41) **Mind** egy magas ___ **mind** hat alacsony gyerek-et felhívtam.¹⁰  
all one tall all six short child-acc up-called-I  
‘I called both one tall and six short children’

(42) **Sem** a jobb- ___ **sem** a bal-kezes gyerekek nem ügyetlenek.  
nor the right- nor the left-handed child-pl not clumsy-pl  
‘Neither the right- nor the left-handed children are clumsy’

We should note that the examples become entirely ungrammatical if mind is replaced by is or pre-host sem with post-host sem. That may be due to the Edge Restriction in RNR (Bachrach & Katzir 2017: 2).¹¹

(43) * Hat magas ___ **is** (és) hat alacsony gyerek-et **is** felhívtam.  
six tall too and six short child-acc too up-called-I  
‘I called both one tall and six short children’

(44) * A jobb- ___ **sem** (és) a bal-kezes gyerekek **sem** ügyetlenek.  
the right- nor and the left-handed child-pl nor clumsy-pl  
‘Neither the right- nor the left-handed children are clumsy’

(47) below combines leftward ATB-movements with non-focal pivot RNR; (45)-(46) lead up to it. Note that in Hungarian the “day noun” is case-marked (locative).

(45) Nem szólt Zolinak a filmről ___ **sem** Kati kedden ___ **sem** (pedig) Mari szerdán ___ 
not spoke to Zoli abt the film nor Kati Tues-on nor Mari Weds-on  
‘Neither did Kati speak to Zoli about the film on Tuesday, nor Mari on Wednesday’

(46) variant of (45) by movement of JP with two remnant vPs to spec, NegP  
**Sem** Kati kedden **sem** (pedig) Mari szerdán nem szólt Zolinak a filmről.

(47) variant of (45) with in-situ ellipsis  
Nem szólt Zolinak a filmről ___ **sem** Kati [egy tavaszi napon] ___ **sem** Mari [egy téli napon]  
not spoke to Zoli abt film nor Kati a spring ___ nor Mari a winter day-on  
‘Neither did Kati speak to Zoli about the film [on] a spring [day], nor did Kati on winter day’

Below is a schematic derivation for (45) and its two variants. The remnant movement technology directly follows Koopman & Szabolcsi (2000). I am using an example involving negative concord to impose an additional constraint on the derivation: it must conform to the required

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¹⁰ A Google search reveals that mind_mind is used robustly in the written language, and overwhelmingly in such non-focal pivot RNR sentences.

¹¹ Edge Restriction (ER): Either α’s position is rightmost in all the nonrightmost constituents containing it, in which case it surfaces within the rightmost constituent; or α’s position is leftmost in all the nonleftmost constituents containing it, in which case it surfaces within the leftmost constituent.
scope relation between nem `not’ and the the NCI that is postulated in (29a). We will come back to how each vP gets to be decorated with sem.

(48) Global structure for (45), with ATB movement of szólt `spoke’.

(49) Some details for (45)-(46)-(47)

(45) is derived by ATB-movements of remnants, indicated with solid lines. (46) is derived by subsequent movement of the remnant encircled with a dashed line to Spec, NegP.
The variant of (45) that underlies (47) has egy tavaszi napon ‘on a spring day’ in the place of kedden ‘on Tuesday’ and egy téli napon ‘on a winter day’ in the place of szerdán ‘on Wednesday’. After the same steps that lead to (46) have been taken, in-situ ellipsis will eliminate napon ‘day-on’.

Perhaps in-situ ellipsis must always operate on sentence-size (at least vP, not full CP) syntactic units. But especially given the way the ellipses co-exist with the leftward ATB-movements, the JP that represents the quantifier must be large (sentence-size). This is especially true in (50), which contains vagy vagy in the preverbal field and strict-NC sem sem under negation in the postverbal field. Such examples absolutely necessitate large JPs.

(50) Vagy Kati egy tavaszi __, vagy Mari egy téli napon
or Kati one spring or Mari one winter day-on
nem láttal sem Zolit, sem Tibilit.
not saw nor Zoli-acc nor Tibi-acc
‘Either Kati [saw neither Zoli nor Tibi on] a spring [day], or Mari saw neither Zoli nor Tibi on a winter day’

Before coming back to (33), which summarized the gist of the analysis, let us briefly consider strict negative concord cases in which the finite verb remains in its own disjunct.

(52) Kati nem evett és/vagy nem ivott.
Kati not ate and/or not drank
‘Kati didn’t eat and/or didn’t drink’

(53) Kati sem nem evett, sem (pedig) nem ivott.
Kati nor not ate nor pedig not drank
‘Kati neither ate nor drank’

Notice that on Szabolcsi’s analysis of strict NC, sem must be within the scope of semantic negation, in this case, overt sentential negation nem ‘not’. That is possible if it originates in the c-command domain of nem. Does that mean perhaps that in (each coordinate of) (53) sem extracts to its surface position on its own? That does not seem necessary. Hungarian has a “predicate-cleft” construction whose discourse function is contrastive topicalization (not focusing, as in many other languages), first discussed in Szabolcsi (1981: 145). Consider:
(54) Kati ennì (nem) evett.
    Kati eat-inf not ate
   ‘As for eating, Kati ate/didn’t eat (but as for drinking, …)’

(53) could contain overt “clefted predicates,” i.e. infinitival copies, as in (55a). I propose that in the original (53), the same copies are present but silent, indicated with the customary caps, as in (55b). This produces the correct truth conditions.

(55) a. Kati sem ennì nem evett, sem (pedig) inni nem ivott.
    b. Kati sem ENNI nem evett, sem (pedig) INNI nem ivott. cf. (53)
   ‘As for eating, Kati didn’t eat, and as for drinking, Kati didn’t drink’

Although the finite verb cannot participate in non-strict negative concord, with the mediation of “predicate clefting” it can. In this case the infinitival copies cannot be silent, because the clausal-head sem requires a focus-accented element in its specifier:

(56) Kati ennì sem evett, (és) inni sem ivott.
    ‘Kati neither ate nor drank’

4.3 The gist of the analysis, again

Recall (33), repeated as (57):

(57) a. mind X mind Y mind Z = mindenki, when the universe is {X, Y, Z} ‘everyone’
    b. vagy X vagy Y vagy Z ≈ valaki, when the universe is {X, Y, Z} ‘someone’
    c. akár X akár Y akár Z = akárki, when the universe is {X, Y, Z} ‘whoever, anyone’
    d. sem X sem Y sem Z = senki, when the universe is {X, Y, Z} ‘no one; str NC’

The intuition was that the set {X, Y, Z} is a contextually relevant subset of the alternatives introduced by the indeterminate pronoun kí ‘who,’ cf. Hamblin’s (1973) {x: person x}. The quantifier data in (37) and the ellipsis phenomena just discussed indicate that the parallelisms in (33)/(57) are intuitively correct but syntactically, and thus compositionally, not correct. Prt_Prt must quantify over propositions, not just over entities (on some or all of its occurrences). For example, Kratzer & Shimoyama (2002) define propositional quantifiers:

(58) a. \( \exists \{A \} \) = {the proposition that is true in all worlds in which some proposition in A is true}
    b. \( \forall \{A \} \) = {the proposition that is true in all worlds in which every proposition in A is true}

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12 Interestingly, alone among the host-preceding particles, mind_mind does not sound not very good with full sentences that do not involve any ellipsis. But the same examples become perfect in the antecedent of a conditional, which shows that the problem is not syntactic or type-theoretical:

(i) ?. Mind az eső esik, mind a szél fúj.
    all the rain is.falling, all the wind is.blowing
(ii) Ha mind az eső esik, mind a szél fúj, ...
    if all the rain is.falling, all the wind is.blowing
   ‘If it is both rainy and windy, …’
Our JP syntax, with the Winter-style semantics in (36a,b), continues to correctly represent the set A that we want to quantify over. That means that we start out with (59). I write $S$ for the coordinated sentences, to remain neutral as to the label they carry (if they are not DPs).

(59) \hspace{1cm} \text{PrtP} \hspace{1cm} \text{where Prt} = \text{mind, vagy, akár or sem}

\hspace{1cm} \text{Prt} \hspace{1cm} \text{JP} \hspace{1cm} \text{S1} \hspace{1cm} \text{J'} \hspace{1cm} \text{J} \hspace{1cm} \text{S2} \hspace{1cm} ...

Let us pause here for a moment, and recall that I argue that mind-type particles are quantifier internal, whereas is-type particles are heads on the clausal spine. It is useful to stress what the importance of this contrast is meant to be. The syntax of quantifiers that I am assuming, following Beghelli & Stowell (1997) and work by Szabolcsi, is one where expressions like everyone/mindenki sit in the specifier of Dist (interpreted as a distributive operator, $\forall$) and expressions like someone/valaki sit in the specifier of Ref or Share (interpreted as an existential quantifier, $\exists$). In that kind of syntax, Dist, Ref, and Share are heads on the clausal spine, Mind and Vala are not. Suppose we were to abandon that kind of syntax and made Mind, Vala, and their brothers clausal-spine heads alongside Neg, for example. That would not eliminate the contrast between mind-type and is-type particles. Irrespective of technical details, mind-type particles are quantifier-internal in the sense that they combine with a JP that delivers a set that serves as a domain of quantification. In contrast, is-type particles are not associated with structures that deliver a set that serves as a domain of quantification. They are entirely unary operations like negation, and their participation in re-iterated constructions is a matter of normal, optional coordination.

The question arises how the particle Prt ends up on all the specifiers and complements in JP. A morpho-syntactic device that comes to mind is Case concord, discussed in Bayırlı (2017), based on Pesetsky (2013). Case concord is specifically pertinent, because Case originates outside DP, not on the Num head (like plural) or on the N head (gender). Although Prt is not a feature, its realization can be seen to spread to the coordinates in the manner of Feature Assignment, subject to the intervention of phasal domains:

(60) Feature assignment (FA)
    a. Copying: when $\alpha$ merges with $\beta$, forming $[\alpha \alpha \beta]$, the grammatical features of $\alpha$
       are immediately copied on $\beta$
    b. Realization: ... and are realized as morphology on all lexical head items dominated by $\beta$

(61) Phasal domains
    The overt manifestation of concord is suppressed by the intervention of phasal domains.
Imitating Bayrů’s notation, we may instantiate mind_mind constructions as follows, with the arch indicating a domain that is not penetrated by the copied particles:

(62)

```
( MindP)
  Mind
  |   |   
  JP   J
  mind  mind
     S1   S2
     J
```

This suggestion does not add anything deep to the analysis, but it points to a connection with a well-attested copying mechanism in morpho-syntax.

5. A short comparison of the results with Szabolcsi (2015)

To recap, Szabolcsi (2015) argued that each MO particle introduces the requirement that both its host proposition and another, parallel proposition be true in the immediately larger context. This analysis takes the unary version of MO as a point of departure. In the reiterated construction, the hosts of the MO’s mutually and simultaneously satisfy each other’s requirements. When MO forms a universal quantifier, the alternative propositions quantified over count as the hosts for MO, and the same mutual and simultaneous satisfaction idea carries over. Simultaneity is formalizable in terms of post-suppositions (Brasoveanu 2013, Brasoveanu & Szabolcsi 2013). A similar proposal was developed for KA particles, mutatis mutandis.

The particle is ‘too’ is a MO-particle. The analysis and many details discussed in Szabolcsi (2015) carry work well for its unary version (Kati is aludt) and its reiterated version (Kati is aludt; Mari is aludt).

Szabolcsi (2015) did not discuss mind_mind. An abstract semantics was proposed for dare-mo style universals that was supposed to work for mindenki as well. The fact that standard proposals use generalized quantifiers for this purpose did not combine very directly with the analysis of is, but given semantic equivalence there was no big clash. The present paper proposes that both mind_mind and mindenki involve quantification; they are not based on a unary particle like is and is_is. Mind_mind is a quantifier over a set of propositional alternatives; the mind of mindenki can well be a quantifier over individual alternatives (as in generalized quantifier theory). This brings mind_mind and mind(enki) together naturally. The semantic equivalence of is_is and mind_mind constructions remains in place; but their syntactic distinctness is done more justice to.

Going beyond Hungarian, the discovery of the two types of particles can be potentially relevant to research on other languages. There may be mysteries lurking there that become possible to disentangle using this typology. But I am not ready to make suggestions about other languages. Hungarian is special in that the two kinds of particles differ in linear order with respect to their hosts. In many other languages, particles invariably precede or invariably follow their hosts. Possibly clues regarding which type they belong to may come from (i) whether the given particle has unary uses in the same sense as its tuple-uses, and (ii) whether a distinction exists
between vanilla `and’ and some dedicated particle like *pedig* that marks the last coordinate as one that completes a string of partial answers to a question under discussion.

On the other hand, it seems though that the issues discussed in the present paper are independent of the fact that in Japanese, Korean, Malayalam, and other languages MO-style particles do not coordinate tensed clauses (coordination is below T). Hungarian and Russian do not share this property with Japanese. Compare the following examples from Szabolcsi (2015: 182):

Framing MO’s requirement in terms of propositions is supported by the fact that Hungarian, Russian, and Japanese are alike in that pronouncing the predicate in each conjunct is not only “logical” but entirely natural and idiomatic. Both versions of the examples in (49) mean ‘Kate as well as Mary laughed’.

   Kate too laughed    Mary too laughed    = K too M too laughed
b. I Katja smejalas’, i Masha smejalas’. = I K, i M smejalis’. Rus.
   too Kate laughed   too Mary laughed   = too K too M laughed
   Keiko-too laugh    Mari-too laughed   = K-too M-too laughed

Likewise, the issues discussed in this paper are independent of the possibility that languages may have specialized e-type conjunctions that produce plural individuals (Mitrović & Sauerland 2016). Hungarian particles make no distinction between e-type and t-type coordinations.
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