

# *We Must All Hang Together* On the Semantics of *All*

Ágnes Bende-Farkas

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## 1 Introduction

Background: NSRF project at RIL–HAS on diachronic syntax for Hungarian. Work on quantification in Old Hungarian, in particular, on universal quantification and the contrast between *mind* ‘all’ and *minden* ‘every’.

Main aims for this presentation:

1. Propose a semantic analysis of (floating) *all* as a maximality operator sensitive to discourse information.
2. Argue that this analysis needs to be extended to those cases of *all* when it associates with mass terms, temporal or spatial expressions.

## 2 What Came First

### 2.1 *All* as the Proto-Quantifier

Gil (1995): the primary (non-distributive) universal quantifier is of the type of *all*. *Every*: a so-called distributive-key u.q. (The elements of the Restrictor set distribute over the Nuclear Scope set.)

Universals 2, 3 and 4:

- (1)
  - a. Briefly: non-distributive universal quantifiers  $\cong$  plural morphology, corresponding distributive-key universal quantifiers  $\cong$  singular morphology. (P. 328.)
  - b. If a language has a non-distributive universal quantifier, the distributive-key universal quantifier is morphologically derived from it. (p.329)

- c. If a language possesses a distributive-key universal quantifier, it possesses a simple universal quantifier. (P. 330)

## 2.2 Diachrony

Haspelmath (1995): in many languages expressions paraphraseable as ‘all’: grammaticalisation from expression meaning ‘whole’, ‘entire’. Grammaticalisation, bleaching: content word → function word, operator. (All German exx. from Haspelmath, sec. 2.1, pp 365–367.)

- (2) a. die *ganze* Welt  
 b. Bei zwei Tassen ist der Henkel abgebrochen, drei sind noch *ganz*.  
 Ich nehme nur die *ganzen Tassen*.  
 ‘Two cups have a broken handle, and three are still intact. I’m taking only the intact cups.’
- (3) a. Wer hat denn die *ganzen* Punkte hier gemalt?  
 ‘Who has drawn all these dots here?’
- (3) Die *ganzen* Tassen sind verschwunden.  
 ‘All the cups have disappeared’
- (4) a. Die *ganze* Familie ist verschwunden  
 ‘All the family/The entire family has disappeared’  
 b. Das *ganze* Wasser ist verschwunden ‘All the water has disappeared’
- (5) a. die gesamten Einwohner — ‘all inhabitants’  
 b. die gesamte Stadt — ‘all the town’  
 c. die gesamte Milchstraße — ‘the entire Milky Way’  
 d. \*der gesamte Tisch — ‘all the table’/‘the entire table’

English: OE *hal* (‘whole’, ‘hale’).

Hungarian: (*az*) *egész*, (*az összes*). (Not in OH!)

- (6) a. *egész* nap (‘all day’, ‘the whole day’)  
 b. *Az egész* politikus szereti a pénzt (Eastern dialects)  
 The whole politician likes the money-ACC  
 ‘All politicians like money’

Hungarian *mind*: the indeterminate-pronoun *mi* ‘what’ + the adverbial suffix *-n*.

- (7) a. Egy kosárcsapatban öt-*en* vannak.  
 ‘There are five (players) in a basketball team.’  
 b. *Az egész-en* eljöttek. (East)  
 The whole-N PRT-came-PST3PL

‘All of them have come’

OH: *Mind* ‘all’ attested earlier than *minden* ‘every’. Conforms to Gil’s Universals 3 and 4?

### 3 (Floating) *All*

#### 3.1 Collections, Collective Readings

- (8) a. The students *all* built a raft (C/Δ)  
b. *All* the students built a raft (C/Δ)  
c. *Every* student built a raft (Δ only)

Corresponding sentences with *every* odd:

- (9) a. The students *all* gathered/assembled/met in the hall  
b. The students have *all* met before.  
c. I can’t bear to think of him living among *all* those New Age types.
- (10) The diplomats *all* shook hands (with each other)

OH codices: attested occurrences with *mind* + reciprocal expressions. Not attested for *minden* ‘every’.

- (11) **mend** vv scentí es unuttei **cuzicun** iov  
all he saint-POSS.PL.3SG and chosen-POSS.PL.3G among right  
felevl iochtotnia ílezie vvt.  
from arrive-CAUS-INF-3SG resurrect-SBJV.3PL he-ACC  
‘May He resurrect him to be sent to the right of God, among all His saints  
and His anointed’ (Funeral Sermon and Prayer)

#### No Pair-list Readings

Chierchia: universal quantifiers in questions:

- (12) a. Which woman does every boy like?  
b. His mother  
c. The Queen  
d. Bill likes Mary, Peter likes Sue, ...
- (13) a. Which woman do all the boys like?  
b. Their mother  
c. The Queen

- d. #Bill likes Mary, Peter likes Sue, ...  
(Brisson (1997))

Brisson: Chierchia's explanation hinges on the semantics of *every*. Data with *all* suggestive that *all* is not a universal quantifier.

### Together and Separately

*All/Mind* can co-occur with expressions marking (contributing?) distributive/collective readings:

- (14) a. Tehat **mind** az zentok **egetombe** mondanak: Ez az zyz  
Thus all the saint-PL together say-PL3: This the virgin:  
'Thus all the saints said together: This is the virgin' (Kazinczy C. 9v)
- (15) a. Heten vадnak, Mel'eket, az o At'ok az  
seven-ADV are, which-PL-ACC the she father-POSS-3PL the  
ordog **mynd egenket** kazdagon el hazasyta,  
devil all oneADV-DIST richly away marries  
'They (the daughters of cupidity) are seven in number, all of whom  
are married off generously by their father the devil, one by one'  
(Székelyudvarhely C. 95r-v)
- b. Igon meltosagossok: merth istennek **mynd feyenkeed**  
very distinguished-PL because god-DAT all head-ADV-DIST  
leany es fyay  
daughter-POSS.PL.3SG and son-POSS.PL.3SG  
'They are venerable, since each and every one of them is God's  
daughter or son' (Sándor C. 1v)

One more OH example: *egyszersmind*. In MdH *egyszersmind* is like a conjunction (*at the same time, altogether*). In OH it was *mind + egyszerre* 'all at the same time', 'all together'.

## 3.2 Time, Space, and Matter

OH: *mind* associated freely, frequently and productively with spatial or temporal expressions, and scales (esp. eventuality scales). English: likewise.

- (16) "There was a rank of drawers built into the wall... and one of them was open *all* the way." (Dell Shannon: Spring of Violence)
- (17) "What he has got (on the mural) is the bad on the left and the good on the right... let me remind you, Sloan, that down here at the police station the

bad is *all* around us.” (Catherine Aird: After Effects)

Spatial expressions:

- (18) az ev kÿaltassok **mÿnd** menyorzagiglan fel hallÿk  
the PRO-3 cry-POSS.3PL all heaven-till up hear-PASS.3SG  
vala.  
be-IMP  
‘their cries could be heard all the way to Heaven’ (St Margaret’s Legend 41v)
- (19) tahat az wtat **mÿnd** be vontat bÿboral es barsonÿal **mÿnd** azenteghazÿiglan  
(Lobkowicz Codex, 7)  
‘Thus the road was all covered in purple and velvet, *all* the way to the church’

Regions of the body:

The entire region:

- (20) az te testÿdet en **mind** el zagattattatom  
the you body-POSS.2SG-ACC I all away tear-CAUS-1SG  
‘I’ll have your *entire* body torn to pieces’. (Kazincy Codex 15v)  
Or: ‘I’ll have your body *all* torn to pieces’

The endpoint:

- (21) Evneky ruhaÿa nemykoron **mynd** terdig meg  
She-DAT gown-POSS.3G at-times all knee-till PRT  
sarosvl vala.  
muddy-DENOM be-sc perf  
‘Her gown would at times become muddied all the way to the knee’ (St Margaret’s legend 26v)

Temporal expressions:

Syntactic associate: expression denoting an (entire) interval.

- (22) vÿselven **mÿnd** az tellyes napot nagÿ aytatos sÿralmas  
spend-PART all the complete day-ACC big pious tearful  
jmadsagban  
prayer-in  
‘spending the entire day in pious, tearful prayers’ (St Margaret’s Legend 7r)

Associate: expression denoting the final segment of an interval.

- (23) ezenkepen al vala **mýnd** ebedýg  
 this-way-N stand be-PERF all lunch-till  
 ‘and in this manner she would stand all the time, until lunchtime’ (St Margaret, 5v)

Associate: expression denoting the initial segment of an interval.

- (24) mýnden eztendeiben **mýnd** attvl fogva. hog zent margit  
 every year-in all that-from begin-PART that saint margaret  
 azzonnac ýo okossaga volt ...  
 lady-DAT good cleverness-POSS.3SG was  
 ‘in every year, ever since Lady Saint Margaret was bright enough’  
 (she would wash her fellow nuns’ feet at Easter) (St Margaret, 6v)

MdH relics: *mindhalálilig* ‘till death’, *mindaddig* ‘until that time’, *mindvégig* ‘at all times till the end’ (MdH: ‘incessantly’).

Main difference between OH and English: OH *mind* associated with expressions denoting (initial/final segments) of intervals. That is, no OH counterpart of ‘gapped’ readings. (*Mind-ig* ‘always’ not in the codices. Instead: *mindenkor-t-lit*. ‘every-when’, *mindenha*.)

- (25) a. Pinocchio’s nose grew longer *all* those times when he told a lie.  
 b. At *all* times before you go to confession cleanse your thoughts. (Inspired by OH codices.)

Eventualities: Degrees/Paths of change:

- (26) a. Idumea kiralanac tètèmit meg egètte  
 Idumea king-POSS.3SG-DAT bone-POSS3.SG-ACC PRT burned  
**mend** hamuiglan  
 all ash-till  
 ‘He burned the bones of the king of Idumea all (the way) to ashes’  
 (Vienna C. 216)
- b. & a. tþlom **mend** fðldiglèn  
 the. temple all earth-till down-break-CAUSE-PASS-PAST  
 letorèttètet
- ‘the temple was demolished all (the way) to earth’ (Vienna C. 261)

Narratives:

- (27) ez beteg soror **mÿnd** meg monda az sororoknak ez felÿvl meg  
 this ill sister all PRT told the sister-PL-DAT this above PRT  
 mondot latast  
 told vision-ACC  
 ‘This ailing sister recounted fully the aforementioned vision to the other  
 sisters’ (St Margaret’s Legend, 63v)

Scales:

End of the scale

- (28) **mēd** ȝhozia fvtanac a kùsdèdtȝl fogvā **mēd** annaggiçlan  
 all he-to run-IMPF-3PL the little-from begin-PART all the-big-till  
 ‘they all ran to him, from small children all the way/all age groups to  
 grownups’ (Vienna C. 38)
- (29) [hogy megadassék a tartozás] **mind** mentȝl kisseb fill’eriglen  
 [that prt-give-PASS the debt] all SUPERL smaller penny-till  
 ‘so that the debt be repaid, entirely, to the last penny’ (Bod C. 17v)

## 4 Analysis

### 4.1 Dowty, Dowty–Brodie

Dowty (1987), Dowty and Brodie (1984): *All* is a VP-adverb that restricts the class of DPs that can combine with *all*-VPs:

- (30)  $[[all\ VP]] = \{\mathcal{P} \in D_{NP} \mid \mathcal{P} \subseteq \{y \mid y^* \in [[VP]]\}\}$   
 where  $y^* =_{df} \{X \mid y \in X\}$  (the principal filter generated by  $y$ ).

More reader-friendly notation: the principal filter generated by set  $A$  (in universe  $E$ ):

- (31)  $\Phi_A =_{df} \{X \subset E \mid A \subseteq X\}$

NB, on this analysis VPs are of type  $\langle\langle\langle e, t \rangle, t \rangle, t \rangle$  (functions from generalised quantifiers to truth values).

Comments (following Hoeksema (1996)):

1. Correctly exclude  $MON \downarrow$  DPs from associating with *all*.
2. Conjoined DPs as associates:

(32) Tom, Dick and Harry were *all* conscripted.

3. Indefinite associates: predicted to be specific (and to be construed as referring expressions).

(33) Five contestants, who were selected as finalists by the judge yesterday, will *all* perform again tomorrow. (D–B)

Hoeksema's finding nonspecific indefinite associates perfectly appropriate:

(34) Buildings, docks, vessels, and details of the Arctic landscape are *all*/clearly visible. (Hoeksema's (48a))

D, D–B on collective readings:

- (35) a. The students *all* gathered in the hall  
b. The students *all* surrounded the publican

Distributive *subentailments*. (Whatever it takes an individual student to belong to a group that has gathered in the hall/surrounded the publican.)

- (36) a. #The boys are *all* a good team.  
b. #The boys are *all* numerous.

## 4.2 Roberts

Roberts (1987): generalised distributivity and ontological versatility. *All* can associate with mass terms or 'group atoms'. If I understand correctly, *all* corresponds to a generalised distributivity operator.

(37) John was *all* tired out. ((172), p. 152.)

(38) The dog was *all* wet. ((173), p. 152.)

Comment: *all* could also associate with the state description.

('The dog was completely wet

Associating with 'collective atoms':

(39) That group of children *all* built a raft. ((189a), p. 157.)

(40) The committee all sang Christmas carols at the last meeting. (Fn 47, p. 158.)



Comment: *mind* + collective noun quite frequent in OH. *Faj-ta-* ‘species’ is a ‘collective atom’ in MdH.

- (41) Num heon muganec. ge **mend w foianec** halalut  
 Not only self-DAT but all he kin-POSS.3SG-DAT  
 evec.  
 death-ACC eat-PAST  
 ‘(In the forbidden fruit) he ate death, not only for himself but for all his kin’  
 (Funeral Sermon and Prayer)

### 4.3 Brisson

Brisson (1997), Brisson (1998)

Ingredients of analysis:

1. Weakened analysis of plural definites. (CW: definites are like universal quantifiers.)

- (42) a. The boys built a raft. (In fact, Bill slept through it all.)  
 b. The boys *all* built a raft.

2. Generalised distributivity à la Schwarzschild (Schwarzschild (1992), Schwarzschild (1994), Schwarzschild (1996)): distributivity not necessarily atomic; generalised distributivity operator: *Part*, or  $\mathcal{P}$ .  $\mathcal{P}$  is a *VP*-operator, it is there ‘just because’.

3. Granularity: context-dependent cover over  $U$ ,  $Cov$ , or  $\mathcal{C}$ .

A cover over set  $X$ ,  $\mathcal{C}_X$  is a set of subsets  $X_i$  of  $X$  s.t.  $\cup X_i = X$ ; no disjointness requirement on  $X_{i,j}$ .

- (43) a. The boys are hungry  
 b.  $(\mathcal{P}(\mathcal{C})(\textit{hungry}'))(\textit{the.boys}')$   
 c.  $\llbracket N \rrbracket^g \in \llbracket \mathcal{P}(\mathcal{C})(V) \rrbracket^g$  iff  $\forall x.[x \in \mathcal{C}^g \wedge x \subseteq \llbracket N \rrbracket^g \rightarrow x \in \llbracket V \rrbracket^g]$

Allowing for exceptions:  $x \in \llbracket \textit{boy}' \rrbracket$ , and  $x \in Y$ ;  $Y \in \mathcal{C}$ , and  $Y \not\subseteq \llbracket \textit{boy}' \rrbracket$ .

4. Floating *all* prevents pragmatic weakening by requiring that  $\mathcal{C}$  be a *good fit*:

- (44)  $\mathcal{C}$  is a good fit for set  $X$  iff  
 $\forall y.[y \in X \rightarrow \exists Z.[Z \in \mathcal{C} \wedge y \in Z \wedge Z \subseteq X]]$

In prose: principal filters restricted to the noun set. Question: what about non-definite associates?

5.  $\Sigma$  On this analysis *all* is not a quantifier; it is more like a regulatory device, imposing an additional requirement on the way collections can be chopped into bits and pieces.

#### 4.4 Hoeksema

Hoeksema (1996): Floating *each* and *all* are VP-adverbs of type  $\langle\langle e, t \rangle, \langle e, t \rangle\rangle$ . *All* (with count associates) is basically assimilated to *each*:

- (45)
- a.  $\llbracket each \rrbracket(P)(X)$  true iff  $\forall x \in X: P(x); |X| \geq 2$ ;
  - b.  $\llbracket all \rrbracket(P)(X)$  true iff  $\forall x \in X: P(x); |X| \geq 2$  (count);
  - c.  $\llbracket all \rrbracket(P)(X)$  true iff  $\forall x \sqsubseteq X: P(x)$  (mass).  
( $\sqsubseteq$ : material-part-of)

What is lost: generalised distributivity. NB, Hoeksema's analysis is couched in a logic for plurals, so floating quantifiers can operate on non-atomic individuals. Lost: the strict atomicity of *each*, whether it is atom-atoms or atomic groups (collections presented as indivisible wholes).

#### 4.5 Winter, Champollion

Champollion (2010) builds on Winter (2001): *All* — the determiner— is a plural counterpart of *every*. Derived from *every* by means of a type-fitting operation *dfit*.

#### 4.6 A Proposal

Syntax: floating *all/mind* is a speaker-oriented adverb generated in situ. (Brisson: the speaker's commitment re the entirety of a collection. Syntactic tests for English: Brisson (1998). Syntactic tests for Hungarian: Bende-Farkas (2014).)

Semantics: a collection  $X$  is presupposed. Asserted:  $\bigcap X$  holds of the predicate (VP). À la D–B, Brisson: *all* restricts possible DP–VP combinations.

Relationship with associate DP: (sentence-internal) anaphora resolution. ( $X$  is equated with a collective discourse referent /an expression denoting a portion of matter/an interval, ...) contributed by the associate.

Anaphora resolution: associate may be constructed ((32)), may be implicit (Hungarian), may be constructed from long stretches of discourse.

- (46) Tom, Dick and Harry were *all* conscripted.

- (47) *Mind* elmentünk a moziba.  
All prt-go-PAST.3PL the cinema-to  
'We all went to the cinema'

Discourse popping (fashioned after OH codices):

- (48) (list and detailed discussion of e.g. the cardinal sins) ... (you the reader)  
bear *all* this in mind and behave accordingly...

Ontological versatility: a built-in feature of *all/mind*. So is the ability to associate with 'atomic groups'.

Main point<sub>1</sub>: *all/mind* is not a quantifier.  $\Rightarrow$  No Restrictor–Nuclear Scope division, no variable binding in the logic textbook sense. Scope: more like the scope interactions of definites.

Main point<sub>2</sub> (with diachronic overtones): association with spatial, temporal expressions, as well as association with atomic groups is not merely a reflex of the initial, unbleached interpretation ('whole', 'entire', 'intact'). Although *all/mind* is not a quantifier in the logic textbook fashion it is nevertheless an operator. NB, the behaviour of OH Hungarian *mind* cannot be said to be a reflex of a stage when it was a content word: *mind* is a tailor-made operator (indeterminate pronoun + group-forming suffix).

Corollary: the semantics of plurals (plural individuals) and collectivity/distributivity **not** the main focus.

Main arguments for a unified analysis:

1. The richness of the data (even in present-day English).
2. The availability of the right tools for plurals, mass terms, times, eventualities, scales... (Roberts)
3. Ever since Partee 1973: temporal expressions are like individual-denoting expressions and are treated accordingly. (Extended to eventualities, possible worlds (M. Bittner and students, esp. Matthew Stone and Adrian Braşoveanu.))

Back to the proposal, a prediction: Indefinite antecedents will be appropriate. A slight problem: MON $\downarrow$  DPs in contexts like the following:

- (49) a. Few senators (*#all*) admire Kennedy.  
b. Few senators admire Kennedy and they are *all* very junior.

(Lack of maximal witness set, hence, no non-trivial supremum?)

Distributive/Reciprocal readings: Two options: Hold the relevant surface expressions responsible. Brisson: such expressions are surface *indicators* of the relevant construal. At present undecided. (A ‘surfacy’ analysis would be preferable, but current research has revealed the need for covert operators and covert algebraic operations, cf. Anna Szabolcsi’s recent work on quantifier particles.)

Scope: *all* (its associate) can *not* enter scope interactions. Similarity to definites. (Not explored fully. Here it is sufficient to note the possibility itself.)

- (50) a. Mary can’t remember *all* those jokes she heard in the pub.  
b. Sue was not affected by *all* the chaos around her.

## 4.7 Summary

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