Pragmasemantic Analysis of the Hungarian Inferential-Evidential Expression *szerint* 'according to sy./sg.'

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Roadmap

- The *szerint*-phenomenon
- The Framework
- Analysis

The *szerint*-phenomenon

- We investigate the pragmasemantic role of the epistemic-evidential postpositional expression *szerint* in the Hungarian grammar, which is highly similar to epistemic discourse markers such as *valószínűleg* 'probably', *talán* 'perhaps', *esetleg* 'could possibly':
- the propositions modified by them should be interpreted as hypotheses (epistemic character of *szerint*)

(1) a. Ili (én)szerintem hazaköltözött.

Ili (I).acto.1Sg home.move.Past ('acto' = 'according to')

'In my opinion, Ili moved back home.'

b. Ili valószínűleg / talán / esetleg hazaköltözött.

Ili probably / perhaps / possibly home.move.Past

'Ili probably / perhaps / possibly moved back home.'

The *szerint*-phenomenon

- The difference lies exactly with the pronominal component present in *(én)szerintem*. This makes the degree of (un)certainty less precise than in the case of the discourse markers given in (1b)
- but shows the person **r** who should be regarded as
  - knowing some evidence e' in support of the proposition e
  - and having a general everyday inferential rule (Kugler 2012; Langacker 2017: 26) which can be specified in the given context as follows: e' → e.

The *szerint*-phenomenon

(2) a. *Ili talán / esetleg is hazaköltözött.
Ili perhaps / possibly also home.move.Past

b. Ili (én)szerintem / (ő)szerinte is hazaköltözött.
Ili (I).acto.1Sg / (s/he).acto.3Sg also home.move.Past
'In my / his opinion too, Ili moved back home.'

- It is a further specialty of the paradigm of *szerint*-expressions that this inferential-evidential discourse marker (Willett 1988: 57), in contrast to other discourse markers (2a), can perform the same information-structural functions as a subject or another argument in Hungarian (É. Kiss 2002), namely the function of an *also*-quantifier (2b). This property is obviously thanks to the pronominal basis of *szerint*-expressions.

Table 1. The relevant-set based logico-pragmatic system of operators in Hungarian —applied to postposition *szerint* 'according to'

	✓	¬
∃	$OP_{\exists\checkmark}$: *also*-quantifier: *Ili szerint is* Ili acto also 'In Ili's opinion too'	$OP_{\exists\neg}$: contrastive topic: */Ili szerint\#...* *Ili acto* 'In Ili's opinion, but in contrast to at least an other person's opinion'
∀	$OP_{\forall\checkmark}$: *each*-quant.: *mindkettőnk szerint* every.two.1Pl acto 'In the opinion of both of us'	$OP_{\forall\neg}$: contrastive focus: *csak Ili szerint* Only Ili acto 'Only in Ili's opinion'

The *szerint*-phenomenon

- Furthermore, based on the referent who should be regarded as holding the information, *szerint* can express quotative evidence (3a).

(3) a. Ili Péter / az újság szerint hazaköltözött.

Ili Péter / the newspaper acto home.move.Past

'In Peter's opinion / According to the newspaper, Ili moved back home.'

b. Ili (én)szerintem gyönyörű.

Ili (I).acto.1Sg beautiful

'In my opinion, Ili is beautiful.'

The *szerint*-phenomenon

(3) b. Ili (én)szerintem gyönyörű.

Ili (I).acto.1Sg beautiful

'In my opinion, Ili is beautiful.'

- Along the second relevant parameter, depending on the associated predicate, a *szerint* expression can have two related meanings:
  - the probabilistic/inferential one (1a)
  - and one which expresses some kind of judgment (3b)
- In this case the expression cannot indicate an outer world evidence, it is necessarily the subjective opinion of the speaker.

Table 2. Acceptability distribution of the three types of *szerint*

	Exclamative		Declarative		Interrogative		Imperative		Optative	
1	*,✓,*	*,?,*	*,✓,✓	?,✓,✓	*,*,*	*,*,*	*,✓,*	*,✓,*	*,*,*	*,?,?
2	*,??,*	*,*,*	?,?,?	*,*?,*?	*,✓,✓	*,??,*?	?,?,*	*,?,*	*,(?),(?)	*,?,?
		*,?,?		?,?,?		*,✓,✓		?,?,*		*,(?),(?)
3	✓,*,✓	✓,*?,✓	✓,✓,✓	✓,✓,✓	*?,✓,✓	(?),✓,✓	??,(?),*	??,(?),*	*,(?),(?)	*,(?),(?)

Table 2. Acceptability distribution of the three types of *szerint*

- Triplet: Quotative / Probabilistic / Judgement
- In each row: Singular / Plural (exclusive, inclusive 1.Pl)
- Basic sentences:

r szerint Ili ott volt a gyűlésen. / same / r szerint Ili gyönyörű.

- r acc_to Ili there was the meeting.Sup / r acc_to Ili beautiful
- Q: 'In r's opinion, Ili took part in the meeting.' / P: same / J: 'In r's opinion, Ili is beautiful.'
- Grades of acceptability: ✓ > (?) > ? > ?? > *? > * (on the basis of minimal pairs evaluated by the authors)

Epistemic or evidential
Probability or judgement

- It is not clear whether a lexical item is an epistemic or an evidential marker (at least in Cognitive Grammar classification, Langacker 2017)
  - However, it is not to decide in a label-based classification
- Predicates do not differentiate the two types in every situation:
  - Inference takes e' as a definition element: Inference turns to judgment in the case that there stands no intersubjective definition for the participants of the discourse (What does it mean, for instance, "moving home" exacty?)
  - Judgement can be regarded as inference as follows: we take the epistemically weighted summarized/averaged opinion of a big relevant set of conceptualizers:

Ili (mindenki szerint) gyönyörű.

'Ili is beautiful (acto everybody).'

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Figure 1. The System of Scientific Antecedents of ℜeALIS

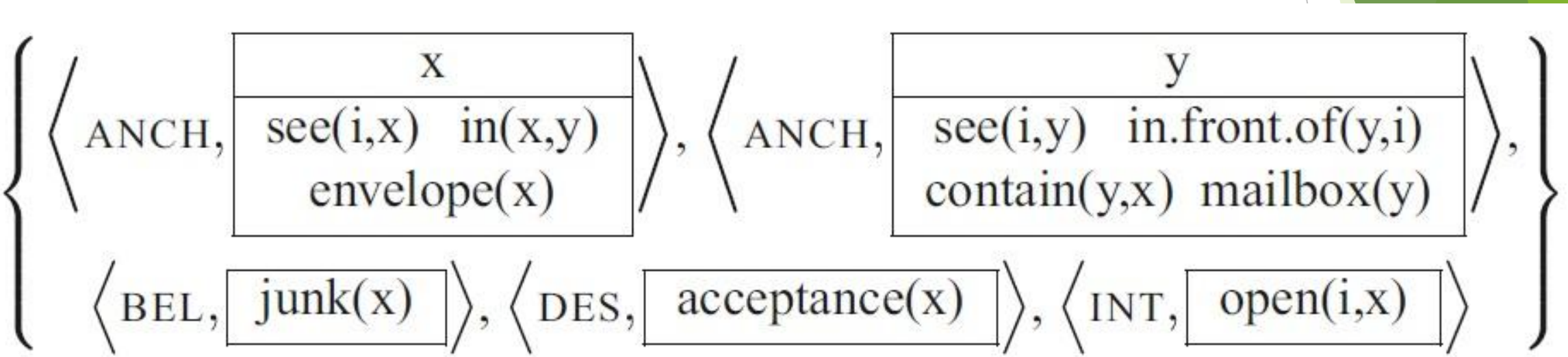

Figure 2. DRS-based mental-state representation with Attitude Description sets (Maier 2016: 477)

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ReALI

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Figure 1. The System of Scientific Antecedents of ReALIS

Framework ℜeALIS (Reciprocal and Lifelong Interpretation System) (Alberti 2011, Alberti *et al.* to appear 2018)

- As we strive for explanatory adequacy, we hypothesize that children—on the basis of the meagre data set available to them—hold possession of the system of intensional profiles as follows.
- Only certain "generator values" should be set and keep in mind; they appear with a black background in. Other values in the profiles are decided by means of general constraints requiring certain values to equal or to stand in complementary distribution.
- The iBuB-values in the general target-oriented mentalization, for instance, are assumed to coincide with the iB-value or to be its opposite (α^* is defined as the set consisting of the scale values which are not in set α or $\{\alpha\}$). (Our ultimate endeavor is to derive certain fairly different intensional profiles by changing a single generator value.)

Table 3. The Three Basic Conventionalized Intensional Profiles and Their Shared Basis

Target-oriented mentalization	Declarative	Imperative	Interrogative
For e: iB	iB=+5$_\alpha$	iB=–5$_\gamma$	iBiB=γ•β *(–5•±5)* → iB∈"0"
iBuB∈''+5, iBuB ∈ iB or iB*	iBuB∈α*	iBuB=γ	iBuBiB=β *(''+5•γ'•±5)* → iBuBiB∈''+5•(,)+5•''0''
For e':...•W, r∈R⊆{i,u,o},	W=uB+	Default: e'=res$_e$	W=iB+
(ΣiB·rD)/|5R|∈''+5	iBrDuB+=±5$_\beta$	*For e':* iBrD	iBrDiB+=β
iBuA∈''+5•''+5	iBuAuB+=β	*For e':* iBuA	iBuAiB+=β *A factor:* iBuB=β'∈β
For e'': iIuI+∈''+5•+5	iIuI+uB+=α	*For e:* iIuI+	iIuI+iB+=β'
iAiIuI+∈''+5	iAiIuI+uB+=α *A factor:* iE=α	*For e:* iAiIuI+	iAiIuI+iB+=β'

Framework ℜeALIS (Reciprocal and Lifelong Interpretation System): labels

i, u, o (+a)

B, D, A, I, E

–, 0, +

-5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5 (cf.: Nuyts 2017: 69)

Framework ℜeALIS

- We attempt to base the current model of profile system on the assumption that the iB-value always serves as a generator, that is, “what I know about the truth status of the given eventuality”
- The iB-generator of the imperative is the value –5, as a truth value of the propositional content the given sentence conveys.

Table 3. The Three Basic Conventionalized Intensional Profiles and Their Shared Basis

Target-oriented mentalization	Declarative	Imperative	Interrogative
For e: iB	iB=+5$_\alpha$	iB=–5$_\gamma$	iBiB=γ•β *(–5•±5)* → iB∈"0"
iBuB∈''+5, iBuB ∈ iB or iB*	iBuB∈α*	iBuB=γ	iBuBiB=β *(''+5•γ'•±5)* → iBuBiB∈''+5•(,)+5•''0''
For e':...•W, r∈R⊆{i,u,o},	W=uB+	Default: e'=res$_e$	W=iB+
(ΣiB·rD)/|5R|∈''+5	iBrDuB+=±5$_\beta$	*For e':* iBrD	iBrDiB+=β
iBuA∈''+5•''+5	iBuAuB+=β	*For e':* iBuA	iBuAiB+=β *A factor:* iBuB=β'∈β
For e'': iIuI+∈''+5•+5	iIuI+uB+=α	*For e:* iIuI+	iIuI+iB+=β'
iAiIuI+∈''+5	iAiIuI+uB+=α *A factor:* iE=α	*For e:* iAiIuI+	iAiIuI+iB+=β'

Framework ℜeALIS

- The imperative in (4a), for instance, is senseless if Fanni is (already) vegetarian. The “negative knowledge” should be shared by the addresser and the addressee: iB=–5=iBuB, as illustrated by the rejecting reaction of a potential listener presented in (4b).

(4) a. Fanni, légy vegetáriánus!

Fanni, be.Conj vegatarian

‘Fanni, be vegetarian!’

b. Már egy éve vegetáriánus vagyok!

already for_a_year vegetarian be.1Sg

‘I have already been vegetarian for a year.’

Framework ℜeALIS

- Let us now turn to the dimension of desires and interests underlying them. Texts (5b,b',b") are all potential continuations at the speaker's disposal. The variants illustrate that in the background of using the given imperative sentence (5a) there may stand the speaker's desire (5b) as well as the listener's one (5b') or perhaps that of an outsider (5b"). Moreover, to carry out e may be a common interest, at least in the speaker's opinion (5c). Accounting appropriately for all these facts requires a flexible model.

(5) a. Menj haza! R=?

go.Conj home

'Go home!'

b. I am fed up with you. R={i}

b'. You'd better be at home. R={u}

b". Are you saying this because of my husband? He is just watching a match with his friends, and he prefers me not disturbing him at home.' R={o}

c. (5a) + [I'm convinced that this way both of us will fare better.]

Framework ℜeALIS

- R={i,u}; (iBiD·iBiD+iBuD·iBuD)/10=(5·5+3·4)/10=3,7
- The desires should be averaged, or rather, summarized as a first step. It is also worth considering that the speaker is likely to be aware of others' desires in different degrees; it is the technique of weighting that the mathematical toolbox offers in such cases:
- epistemically weighted average of interests.
- One might think that it offers too much freedom, but we claim that it will get specified just like pronouns such as *this* or *everyone* in real contexts. The speaker knows whose interest they intend to serve, and the listener should also make a reliable decision on this topic.

In the case of *szerint*: also epistemically weighted averege of BELIEFS! (by judgement)

A cognitive perspective on evidentiality (Nuyts 2017: 61–62, 66)

(1)

> evidentiality

> epistemic modality

> deontic modality

> time

> quantitative aspect / dynamic modality

> phasal aspect

> (parts of the) STATE OF AFFAIRS

Note that evidentiality is placed on the top of this hierarchy.

A cognitive perspective on evidentiality (Nuyts 2017: 61–62, 66)

- ”this hierarchy … constitutes a very basic dimension of our cognitive system for **conceptualizing ‘the world’**…
- Climbing up the hierarchy involves a **gradual widening of the perspective on the state of affairs** and, correspondingly, **an increasing role for the speaker**. The higher up in the hierarchy, **the more the speaker has to do to ‘perform’ the qualification**, in terms of drawing in information beyond the state of affairs of concern and in interpreting the situation of the latter in that light – hence **the more room there is for creative involvement on his/her part** in coming to the qualification of the state of affairs. In sloganesque terms: **‘the higher up, the more conceptual work’.**

A cognitive perspective on evidentiality (Nuyts 2017: 61–62, 66)

- This element of **'work load' and the corresponding degree of speaker presence** will be a crucial factor in the analysis of the evidential categories."
- In the categories at the top **speaker activity hence speaker presence becomes the absolutely dominant element:** they involve different kinds of **explicit speaker reflections on the state of affairs**.

Variants of *szerint* based on Langacker's (2017) categorization

- „Language is a basic means of achieving epistemic control and intersubjective alignment.
- I view evidentiality as one dimension of epistemic assessment, which is best treated in a unified account of embodied experience and the striving for epistemic control.
- …the speaker – by following an inferential path – projects its realization with greater or lesser confidence.
- the same two dimensions of epistemic control: source of information or degree of epistemic certainty"

Variants of *szerint* based on Langacker's (2017) categorization

- „Evidentials are … organized egocentrically with respect to source and reliability of information. … sources representing increasing distance from the center are"
  - internal experience ($szerint_{judgment}$)
  - perception ($szerint_{quotativ}$ from an anchored o's perspective)
  - inference (based on higher-level cognition) ($szerint_{probabilistic}$:evidence+inference)
  - and report (contributions from other conceptualizers) ($szerint_{quotativ}$/$szerint_{probabilistic}$ from the speaker's perspective)
  - Report ll.=hearsay (from an unanchored o's perspective)

Table 4. Types of *szerint*-profiles

	Declarative	Imperative	Interrogative (*y/n*)
	Probabilistic *szerint*–δ		
	δ=o: iBδB∈+5•'+4 iB ≤γ	δ=o: iB=–5 iBδB∈+5•–5	iB∈"0"
	δ=i: δB∈+5•'+4	δ=i: δB=–5	
	δ=o: iE=0 iE"=+5 iBδE='+5•0 iBδE'='+5•+5		δ=o: iE=0 iBδE='+5•0 iBuBδE'='+5•'+5• +5
	δ=i: iE=0 iE'=+5		δ=u: iE=0 iBδE='+5•0 iBδE'='+5•+5
	iBuB≤ iBuBδB∈α*• (α*='"0" v. ''0")	iBuB='+5•γ' (γ'=–5 or γ'∈–5')	iBuBiB∈''+5•(')+5•'' 0''

Table 4. Types of *szerint*-profiles

Declarative	Imperative	Interrogative (*y/n*)
Probabilistic *szerint*–δ		
δ=o: iBδB∈+5•'+4 iB ≤		
δ=i: δB∈+5•'+4		
δ=o: iE=0 iE''=+5 iBδE='+5•0 iBδE'='+5•+5		
δ=i: iE=0 iE'=+5		
iBuB≤ iBuBδB∈α*• (α*='"0" v. ''0")		

I know that o conjectures that e is true.
My knowledge is weaker than o's.

I have no immediate experience on e.
I have direct evidence on e".
I conjecture that o has no immediate experience on e.
I conjecture that o has immediate experience on e', which o infers e.

I conjecture than your knowledge is weaker than my/ o's.
I conjecture that you still do not know that o conjectures that e is true.

Table 4. Types of *szerint*-profiles

Declarative	Imperative	Interrogative (*y/n*)
Probabilistic *szerint*–δ		
δ=o: iBδB∈+5•'+4 iB ≤γ	δ=o: iB=–5 iBδB∈+5•–5	
δ=i: δB∈+5•'+4	δ=i: δB=–5	
δ=o: iE=0 iE''=+5 iBδE='+5•0 iBδE'='+5•+5		
δ=i: iE=0 iE'=+5		
iBuB≤ iBuBδB∈α*• (α*='"0" v. ''0")	iBuB='+5•γ' (γ'=–5 or γ'∈–5')	

I know that e does not hold.
I know that o knows that e does not hold.

I conjecture that you know that e does not hold.

Table 4. Types of *szerint*-profiles

Declarative	Imperative	Interrogative (*y/n*)
Probabilistic *szerint*–δ		
δ=o: iBδB∈+5•'+4 iB ≤γ	δ=o: iB=–5 iBδB∈+5•–5	
δ=i: δB∈+5•'+4	δ=i: δB=–5	
δ=o: iE=0 iE''=+5 iBδE=''+5•0 iBδE'=''+5•+5		
δ=i: iE=0 iE'=+5		
iBuB≤ iBuBδB∈α*• (α*='"0" v. ''0")	iBuB='+5•γ' (γ'=–5 or γ'∈–5')	

I know that e does not hold.
I know that o knows that e does not hold.

I conjecture that you know that e does not hold.

e-re: iIuI+=''+5•'+5

I want you to intend that e should be performed, but this is not necessarily a strict order, only an advice ('5)

How to capture the judgment character?

$$\delta=o:\ \underline{iB\delta B}\in +5\bullet+5,\quad (R'')\ \underline{iBrB}=-5$$

- I know that o judges e to be true.
  (o's subjective judgment)
- I know that there is a set R" of
  conceptualizers
  who judge e to be false. (Intersubjetive judgement as a basis of comparison.)

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Thank you!