Chapter 4

Epistemic comparatives and other expressions of speaker’s uncertainty

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Our study endeavors to further our understanding of the ways the speaker’s perspective is expressed in natural language. We analyze a rarely discussed construction, namely epistemic comparatives and their interaction with inferential indirect evidentials and epistemic modals. We show that epistemic comparatives are incompatible with inferential indirect evidentials, but are well-formed with epistemic modals. We base our discussion on data from Bulgarian and we also show that similar facts hold in Romanian, thus strengthening the empirical coverage. On the theoretical side, we claim that inferential indirect evidentials are structurally distinguished from epistemic modals. This accounts for their different behavior with epistemic comparatives, thus providing further support to accounts which take indirect evidentials and epistemic modals to be separate categories.

Keywords: epistemic comparatives, indirect evidentials, epistemic modals, inferentials, Bulgarian, Romanian

1 Introduction

Recent research on epistemic modality has brought to the fore a previously neglected construction, namely epistemic comparatives (hereafter ECs; von Fintel & Kratzer 2014; Herburger & Rubinstein 2014). We illustrate this phenomenon with the example in (1) from Bulgarian. In this sentence, the speaker conveys that she believes the state of affairs where Ivan is in the office to be more plausible than the state of affairs where Ivan is at home.
We contribute to the rising interest in ECs by examining some previously unreported properties of these constructions. Starting from Bulgarian, we address an interesting puzzle raised by the interaction of ECs with other expressions of speaker’s uncertainty. This puzzle concerns the difference between epistemic modals and grammaticalized evidentials. ECs are not possible with inferential grammaticalized evidentials, while they are well-formed with epistemic modals. The sentence in (2) contains a present perfect, which in Bulgarian obtains an indirect evidential (IE) interpretation. The curious observation is that the EC is not well-formed under the inferential reading of the indirect evidential.

(2) ?Ivan bil po-skoro v ofisa otkolkoto vkušti.
    Ivan be.PST.PTCP more-soon in office than home
    Intended: ‘Apparently, it is more plausible that Ivan is in the office than at home.’ (Bulgarian)

However, ECs seem to be possible with epistemic modals, as seen below:

(3) Ivan po-skoro moje da e v ofisa otkolkoto vkušti.
    Ivan more-soon can DA is in office than home
    ‘It is more plausible that Ivan might be at work than at home.’ (Bulgarian)

These facts are not restricted to Bulgarian. We show that similar patterns obtain in yet another language that has ECs and grammaticalized evidentiality, namely Romanian. Parallel observations from outside the Slavic family make available a clearer perspective into the nature of ECs and evidentiality, highlighting the cross-linguistic uniformity of these phenomena. We provide a comprehensive analysis for both Bulgarian and Romanian.

More precisely, we propose to explain the puzzle by arguing that the ill-formedness of ECs with grammaticalized evidentials boils down to competition for the same position. We build on a decompositional account of ECs (Herburger & Rubinstein 2014) and an analysis of the Assert operator as a degree relation (Greenberg & Wolf 2018). We show that our proposal makes a number of correct predictions, including the difference between inferential and hearsay evidentials when combined with ECs.

The paper is organized as follows: §2 provides some background on ECs and evidentiality, §3 presents the core observation, §4 spells out our analysis of the
facts described in §3, §5 contains some concluding remarks and avenues for future research.

2 Background on epistemic comparatives

ECs compare two propositions with respect to the probabilities assigned (usually) by the speaker.\(^1\)\(^2\) As we already mentioned, in the Bulgarian example in (1), the speaker communicates that she believes (or is committed to act as if she believes) the state of affairs where Ivan is in the office to be more plausible than the state of affairs where Ivan is at home.

One of the defining properties of ECs is that they employ a comparative form of a temporal adverb. A fuller definition of ECs should be in terms of their meaning and distribution. For reasons of space, we only mention this salient characteristic here and refer the readers to the works on ECs mentioned in this paper. (4) illustrates the Bulgarian \((po-)skoro\) with its usual temporal meaning.\(^3\)

\begin{itemize}
\item (4) Toj dojde po-skoro otkolkoto očakvah.
\end{itemize}

\begin{itemize}
\item he came more-soon than expected.1sg
\end{itemize}

`He came sooner than I expected.' (Bulgarian)

ECs have not been thoroughly investigated. There are four studies we are aware of: von Fintel & Kratzer (2014); Herburger & Rubinstein (2014); Goncharov (2014); Goncharov & Irimia (2018). von Fintel & Kratzer (2014) look at the properties of

\(1\)Propositional comparatives can, in fact, be classified into three types: (i) metalinguistic comparatives, expressing appropriateness (Bresnan 1973; McCawley 1988; Embick 2007; Morzycki 2011; a.o.), (ii) preference comparatives, ranking choices (Giannakidou & Stavrou 2009; Giannakidou & Yoon 2011), and (iii) epistemic comparatives, ordering speaker’s probabilities (von Fintel & Kratzer 2014; Herburger & Rubinstein 2014). There is no consensus in the literature on whether these three types of comparatives should be treated uniformly or not (see Morzycki 2011 for discussion). We stay away from this debate here, as we focus on ECs.

\(2\)Relativization to the speaker is true only of unembedded ECs. When ECs are embedded under an attitude predicate, they are relativized to the attitude holder and when ECs occur in a question, they are relativized to the hearer, see Herburger & Rubinstein (2014: 562).

\(3\)How modal uses of temporal adverbs like \(skoro\) relate to their temporal uses is an important question. Although we do not address this issue here, we believe the diachronic account of the development of modal uses of adverbs like \(skoro\) (and \(rather\)) from their temporal uses presented in Gergel (2016) is on the right track.
ECs in German without attempting a formal analysis. Goncharov (2014) describes ECs in Russian. Herburger & Rubinstein (2014) use ECs to argue that possibility modals in German are not gradable. We believe the analysis proposed by Herburger & Rubinstein (2014) is on the right track. We modify it slightly in §4 to align it better with our assumptions. Goncharov & Irimia (2018) discuss the cross-linguistic variation of ECs, and provide an account for it.

In the next section we introduce the puzzle that is the focus of the present paper. The facts are based on novel data related to ECs in Bulgarian. We also show that similar facts obtain in Romanian. Although not a Slavic language, Romanian proves very useful for deepening our understanding of the Bulgarian facts and for making cross-linguistic generalizations. Romanian has ECs, as seen in (5a). Similarly to Bulgarian, this sentence is constructed with an adverb (mai degrabă ‘more soon’), which also has a temporal meaning, illustrated in (5b).

(5) a. Ion este mai degrabă la birou decât acasă. Ion is more ADV.early at office than home ‘According to the speaker, it is more plausible that Ion is in the office than at home.’

b. Trebuie să vii mai degrabă. need SBJV come.2SG more ADV.early ‘You need to come sooner.’ (Romanian)

Importantly, Romanian is part of the Balkan Sprachbund, just like Bulgarian. Thus, it exhibits several features that are characteristic to this geographical area, among which: (i) presence of suffixed definiteness; (ii) lack of sequence-of-tense phenomena; (iii) an analytic future constructed from the auxiliary want (see especially Tomić 2006a). Another feature that Bulgarian and Romanian share, which is most important for us here, is the existence of grammaticalized evidentiality. Looking at two languages – Bulgarian (Slavic) and Romanian (Romance) – in a typological contact situation can give us relevant hints into the nature of the phenomena discussed in this paper. In the next section we show that ECs are not well-formed with grammaticalized indirect evidentials, under inferential interpretations. We use data from both Bulgarian and Romanian.

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4ECs built from temporal adverbs can be absent in certain languages, for example present day English, as seen in (i). ECs with temporal adverbs existed in Middle/Early Modern English, as discussed in Gergel (2016). ECs formed as ‘it is more likely to ... than’ arguably have similar meaning, but for the purposes of this paper we take them to be a different constructions.

(i) * John is {sooner/more/rather} at work than at home.
3 ECs and grammaticalized evidentials

Both Romanian and Bulgarian have verbal forms that express (indirect) evidentiality. We take the existence of these forms to support the claim that (indirect) evidentiality is grammaticalized in these languages.\(^5\)

We provide two relevant examples in (6a) and (6b):

(6) a. Ivan bil vkušti.
   'Apparently, Ivan is at home.'
   (Bulgarian)

   Ivan be.PST.PTCP=EVID home

b. Ion o fi acasă.
   'Apparently, Ion is at home.'
   (Romanian)

   Ion PRESMp be at.home

As mentioned in the introduction and illustrated in (6a), the Bulgarian past participle can carry IE interpretations, see Jakobson (1956); Comrie (1976); Palmer (1986); Izvorski (1997); Alexiadou et al. (2003); Tomić (2006b); a.o. In Bulgarian, the present perfect is ambiguous. It can have a regular temporal interpretation or function as an evidential. The present perfect is formed from a present auxiliary and a past participle. With the 3rd person the auxiliary can be omitted. In such cases, the present perfect is unambiguously interpreted as evidential, see Izvorski (1997: fn. 7). In this paper, we use this strategy to rule out the temporal interpretation (bil is 3SG.PAST.PART).\(^6\)

In the Romanian example in (6b), IE is conveyed by the presumptive mood (PRESMP), as discussed especially by Slave (1956); Coşeriu (1976); Reinheimer Răpeanu (2000); Squartini (2001); Irimia (2010; 2018); a.o.\(^7\)

The puzzle we discuss in this paper is that ECs are not well-formed in sentences with IEs, whereas they are grammatical with modal auxiliaries.\(^8\) Compare (7) with (8):

(7) a. ?? Ivan bil po-skoro v offisa otkolkoto vkušti.
   Intended: ‘Apparently, it is more plausible that Ivan is in the office than at home.’
   (Bulgarian)

   Ivan be.PST.PTCP more-soon in office than home

\(^5\)In this paper we make a distinction between grammaticalized evidentials and what we will later call phrasal/lexical evidentials. See §5 for some discussion.

\(^6\)We are grateful to Roumyana Pancheva for clarifying this point.

\(^7\)The Romanian presumptive form o ‘PRESMP.3sg’ is a modal auxiliary which shows ambiguity between a modal future reading and an evidential reading. The presumptive mood in Romanian can also be constructed from other modal auxiliaries, e.g. conditional, subjunctive.

\(^8\)We limit our investigation to indirect evidentiality because it has been convincingly demonstrated that ECs are unacceptable with direct evidence, just like regular epistemic modals (see Herburger & Rubinstein 2014).
One important observation is that the incongruence between the indirect evidential and the EC only affects the **inferential indirect evidentials** (IIE).9

It is well known that indirect evidentials come in two broad categories: inferential (the statement is based on the inference the speaker draws from available evidence) and hearsay (the statement is based on somebody else’s report). In Bulgarian the present-perfect-as-an-evidential in (6a) is ambiguous. It can obtain both inferential and hearsay readings (see especially Smirnova 2013; Koev 2017). Ill-formedness only arises under the inferential reading. The hearsay interpretation (‘based on what I heard, it is more plausible that Ivan is in the office than at home’) is not deviant.10 The Romanian example in (7b) is not ambiguous. Hearsay readings of the **Presmp** are normally constructed from conditional morphology on the auxiliary (e.g. ar=cond.3), see Irimia (2018).11

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9 We are grateful to Roumyana Pancheva for the illuminating discussion on this point.

10 Koev (2017: fn. 2) notes that the inferential reading of the present-perfect-evidential in Bulgarian is more restricted than its hearsay reading. There is also speaker variation in this respect. Therefore, speakers who only have the hearsay reading will not perceive the contrast we are interested in.

11 One way to disambiguate the hearsay readings from the conditional ones is by embedding them under overt hearsay marking (‘they say that’), as in the following example. Note that this sentence also illustrates the phenomenon of evidential concord.

(i) (Se spune că) Ion ar be.PRESmp.3d fi fost be.INF la biro mai degrabă adv be.INF later Decât be.ADJ at home ‘(They say that) based on hearsay, it is more plausible that Ion was in the office rather than at home.’
To summarize, the novel observation is that ECs are compatible with epistemic modals, but are deviant with grammaticalized IIEs. The observation is based on Bulgarian and Romanian, two languages which grammaticalize evidentials using the present perfect and the presumptive mood respectively.

4 Proposal

In a nutshell, our proposal is that -er in ECs and grammaticalized (inferential) evidentials are both degree modifiers of the (gradable) SPEECH ACT (SA) operator Assert. Thus, they computationally compete for the same position. Therefore, the deviance of the examples in (7) is similar to *John is more that tall, in which more and that specify the degree of tallness. To flesh out our account we build on the insights in Greenberg & Wolf (2018), who propose that Assert contains a degree argument and thus has to compose with a degree modifier (similarly to gradable adjectives). We combine this insight with the idea in Davis et al. (2007) that evidentials reset the degree of credence of the speaker.

4.1 Preliminary remarks

We begin this subsection by discussing Greenberg & Wolf (2018) and then, spell-out some details of Herburger & Rubinstein’s (2014) analysis of ECs, on which we build our account.

Greenberg & Wolf (2018) base their proposal on the idea that Assert is modifiable. The evidence they use comes from the difference in distribution between MODAL ADVERBS (MAdvs) and MODAL ADJECTIVES (MAdjs). It has been previously noticed in the literature that MAdvs and MAdjs differ in (at least) the following respects.

First, speaker orientation is stronger with MAdvs than MAdjs, as seen in the contrast between (9a) and (9b), cited from Greenberg & Wolf (2018).

(9) a. A: It is probable that they have run out of fuel.
    B: Whose opinion is this?

b. A: They have probably run out of fuel.
    B: # Whose opinion is this?

Second, only MAdjs are possible in the antecedent of conditionals that do not have an assertive force by themselves (e.g. Kratzer 1991), as shown in (10):
(10)  a. # If John is possibly/probably/definitely in the office, I will call the office.
    b. If it is possible/probable/certain that John is in the office, I will call the office. (Greenberg & Wolf 2018)

Finally, in confirmational tag-questions, yes picks up the content of the proposition when MAdv is used, see (11a). On the other hand, MAdj confirms the degree of credence, see (11b).

(11)  a. A: John is possibly/probably/certainly in the office, eh?/right?
     B: Yes. (John is in the office.)
    b. A: It’s possible/probable/certain that John is in the office, eh?/right?
     B: Yes. (It’s possible/probable/certain that John is in the office.)

Greenberg & Wolf (2018) use these differences to suggest that MAdvs function as Assert modifiers. To implement this idea compositionally they use the degree-semantics framework. More specifically, they propose the denotation of Assert in (12).

\[
\lambda p \lambda d \cdot \text{CR}_x(p) \geq d
\]

where \(\text{CR}_x\) is a function that takes a proposition \(p\) and returns a degree to which \(x\) is committed to behave as if \(x\) believes that \(p\). This is important for explaining the difference between IIE and hearsay.

According to this system, simple sentences like (13a) have the LF in (13b), where the degree argument is saturated by a contextually set POS(itive) operator, defined in (13c). This is similar to the standard treatment of gradable adjectives in simple sentences like \(\text{John is tall}\) in degree-semantics (e.g. Kennedy & McNally 2005). (13d) computes the truth-conditions of (13a). (13a) is true iff there is a contextually

\[\text{Assert}_x = \lambda p \lambda d \cdot \text{CR}_x(p) \geq d\]
set degree $d$ such that the speaker has credence in the proposition that John is home at least to $d$.

(13)  

a. John is at home.  
b. LF: [[ POS [ Assert ] ] [John is at home] ]  
c. $\lambda G \lambda p \exists d [ d \geq \text{STANDARD}_c \land G(p)(d) ]$  
d. $\lambda x [ \lambda G \lambda p \exists d [ d \geq \text{STANDARD}_c \land G(p)(d) ] (\lambda p \lambda d . \text{CR}_x(p) \geq d) ] (\lambda G \lambda p \exists d [ d \geq \text{STANDARD}_c \land G(p)(d) ] (\lambda p \lambda d . \text{CR}_x(p) \geq d) ] (\text{J. is at home})$  

(14)  

a. John is probably at home.  
b. LF: [[ probably [ Assert ] ] [John is at home] ]  
c. $\lambda G \lambda p \exists d [ d > 0.5 \land G(p)(d) ]$  
d. $\lambda x [ \lambda G \lambda p \exists d [ d > 0.5 \land G(p)(d) ] (\lambda p \lambda d . \text{CR}_x(p) \geq d) ] (\lambda G \lambda p \exists d [ d > 0.5 \land G(p)(d) ] (\lambda p \lambda d . \text{CR}_x(p) \geq d) ] (\text{J. is at home})$  

A potential objection to the idea of gradable Assert could be that SA operators are not normally part of the compositional derivation and cannot be embedded. However, various contributions have shown that under certain conditions SA operators can be embedded, see Greenberg & Wolf (2018) for references.

Turning now to ECs, we follow the decompositional account of Herburger & Rubinstein (2014), who analyze German ECs of the type in (15). For Herburger & Rubinstein (2014) eher is decomposed into a comparative head -er with the regular denotation in (16a) and an epistemic component eh-, which they take to be a believe-type predicate with a degree argument, see (16b).
According to the speaker, it is more plausible that Hans is at work than at home.’ (German)

\[\text{-er} \lambda P \lambda Q . \text{max}(Q) > \text{max}(P)\]
\[\text{eh-} \lambda p \lambda d . z \text{ is } d\text{-ready to believe } p\]

(17) a. LF: [[-er [than ⟨eh- Hans is⟩ at home]] [eh- Hans is at work]]

According to this system, the example in (15) has the LF in (17a) and the truth-conditions in (17b). (16) and (17) are from Herburger & Rubinstein (2014: 564–565). With angle brackets (⟨…⟩), we signal the material that is not phonologically present.

Interesting support for the decompositional analysis of eher comes from the fact that in Austrian and Bavarian German there is a discourse particle eh- with a similar epistemic interpretation, see (18) from Herburger & Rubinstein (2014: ex.32). See also Zobel (2017) for a detailed investigation of eher.

(18) Das ist auf regionaler Ebene eh möglich.

That is anyways possible on a regional level.

4.2 Analysis

We begin our analysis by discussing the interpretation of INFERENTIAL INDIRECT EVIDENTIALS (IIEs). We propose that they function as degree modifiers of Assert on a par with MAdvS (as discussed above). This claim is limited to IIEs; in this paper, we remain agnostic with respect to other types of evidentials, apart from hearsay evidentials that, as we show below, are not modifiers of Assert. Furthermore, building on Davis et al. (2007), we assume that IIEs reset the threshold of the credence function from a contextually set value (set by POS) to the evidential value, see (19). This is illustrated for Romanian in (20). Bulgarian IIEs
receive a similar account. For reasons of space, we provide only the LF and the truth-conditions.\footnote{We gloss over the mechanics of how the evidential meaning comes about and how the source of evidence is encoded. These details are orthogonal to the point made in this paper, but see the discussion in Koev (2017).}

\[(19) \quad \text{[Evid}_{\text{IE}}]^c = \lambda G \lambda p \exists d [d = \mu^c(evid) \land G(p)(d)]
\]

where $\mu$ maps the strength of evidence to a degree on the credence scale in $c$

\[(20) \quad \text{a. } \text{Ion o fi acasă.}\]
\[\text{Ion at home: } '\text{Apparently, Ion is at home.' (Romanian)}\]

\[(21) \quad \text{b. } \text{LF: [ [Evid}_{\text{IE}}[ \text{Assert }] ] [\text{Ion is at home}]]\]
\[(22) \quad \text{c. } \exists d [d = \mu^c(evid) \land CR_x([\text{Ion is at home}]) \geq d]\]

(we where $x =$ the speaker in $c$)

Our proposal for IIEs makes the immediate prediction that IIEs are incompatible with MAdvs, as they compete for the same position. This prediction is borne out for Romanian posibil, as shown in (21):

\[(21) \quad ?? \text{Ion (posibil) o fi (posibil) acasă.}\]
\[\text{Ion possibly at home: } '\text{Possibly, Ion is apparently at home.' (Romanian)}\]

We now account for the core observation, namely that ECs are incompatible with IIEs. We propose that the epistemic component in ECs, expressed by $\text{eh-}$ in German (see the observations above) can be assimilated to Greenberg & Wolf’s (2018) Assert. We generalize Herburger & Rubinstein’s (2014) analysis of German to Bulgarian and Romanian and represent $\text{eh-}$ abstractly as Epist below. Both Assert and Epist are gradable and both manipulate (usually) the speaker’s degree of credence in the proposition expressed by the prejacent. There is, however, an important difference between the two: Epist is presuppositional, i.e. it is undefined if the speaker has direct evidence (see the discussion in Herburger & Rubinstein 2014).

\[(22) \quad \text{[Epist}_x^c] = \lambda p \lambda d \cdot CR_x(p) \geq d\]

(defined only if $x$ doesn’t have direct evidence for $p$)
To simplify the computation of comparatives and make it parallel to modal adverbs, we slightly modify the structure advocated by Herburger & Rubinstein (2014) for eher-comparatives. We assume that EC in (23a) has the LF in (23b). We further assume that -er has the denotation in (23c), where the than-clause is a definite description of degrees (as assumed for gradable adjectives), see (23d). For reasons of space, we omit the details of how the meaning of the than-clause is obtained. The truth-conditions for (23a) (if defined) are given in (23e) and paraphrased in (23f). We show this using Bulgarian, but the same holds for Romanian.

(23)  
\[\begin{align*}
\text{a. Ivan po-skoro e v ofisa otkolkoto vkuštì.} \\
\text{Ivan more-soon is in office than home} \\
\text{‘According to the speaker, it is more possible that Ivan is at work than at home.’ (Bulgarian)} \\
\text{b. } \frac{\text{[[-er [than } \{\text{Epist Ivan is at home}\} \text{ Epist] [Ivan is in the office]]}}{\text{[[-er [than Epist}_x \text{ Ivan is at home]}}} = \frac{\lambda d \lambda G \lambda p \exists d' [d' > d \land G(p)(d')]}{\lambda G \lambda p \exists d' [G(p)(d') \land d' > \max \{d : CR_x(\text{[Ivan is at home]}) \geq d\}]} \\
\text{c. } \frac{[-er [than Epist}_x \text{ Ivan is at home]}}{\text{[[-er [than Epist}_x \text{ Ivan is at home]}}} = \frac{\lambda p \exists d' [CR_x(p) \geq d' \land d' > \max \{d : CR_x(\text{[Ivan is at home]}) \geq d\}]}{\exists d' [CR_x(\text{[Ivan is in the office]}) \geq d' \land d' > \max \{d : CR_x(\text{[Ivan is at home]}) \geq d\}]} \\
\text{d. In prose: There is a degree to which x believes Ivan is in the office is plausible and this degree is higher than the maximal degree to which x believes that Ivan is at home is plausible (where x is the speaker)} \\
\text{Given these assumptions, ECs are deviant with IIEs for the same reason posibil is deviant with IIEs in (21) above. That is to say, IIE competes with -er for the degree modifier position. (24b) shows a simplified LF for the ill-formed (24a) repeated from above (the underlined part shows the competition).} \\
\text{b. } \frac{\text{[[-er than (Ivan is) at home ] / Evid}]}{\text{[[-er than (Ivan is) at home ]}}} \frac{\text{Epist ] [Ivan in the office]}}{\text{[[-er than (Ivan is) at home ] / Evid}]} \frac{\text{Epist ] [Ivan in the office]}}{\text{[[-er than (Ivan is) at home ]}}} \\
\end{align*}\]
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Our account also explains why hearsay evidentials are well-formed with ECs. Several researchers, among which Faller (2002) and Smirnova (2013) have pointed out that hearsay evidentials do not require the speaker’s commitment. In our system, this can be implemented by saying that hearsay evidentials are not Epist/Assert modifiers. Therefore, they do not compete with -er in ECs for the degree modifier position.

As epistemic modals are not degree modifiers of Epist/Assert, they are felicitous with ECs, see (25a) repeated from above and its simplified LF in (25b).\(^ {14}\) The same holds for Bulgarian in (26).

\[(25)\]
\[\text{a. Ion poate fi mai degrabă la birou decât acasă.} \]
\[\text{Ion can-3SG be-INF more ADV.early at office than home} \]
\[\text{‘It is more plausible that Ion might be in the office than at home.’} \]
\[(\text{Romanian})\]
\[\text{b. LF: [[ [-er than } \langle \text{Ion be} \rangle \text{at home } ] \text{Epist } ] [ \text{might [Ion be in the office]]} \]

\[(26)\]
\[\text{Ivan po-skoro moje da e v ofisa otkolkoto vkušti.} \]
\[\text{Ivan more-soon can DA is in office than home} \]
\[\text{‘It is more plausible that Ivan might be at work than at home.’} \]
\[(\text{Bulgarian})\]

Independent support for our proposal comes from the fact that ECs are also ill-formed with MAdvs. Recall that according to Greenberg & Wolf (2018), MAdvs are degree modifiers of the gradable Assert. Thus, they are expected to compete with -er in ECs, see (27).

\(^ {14}\)Independent support for this comes from Irimia (2018) who has shown that there are important structural differences between the IIE reading and the non-IIE modal reading of Romanian presmp. Modal interpretations are obtained when the modal features are merged in Mod\(^ 0\) and raised to T\(^ 0\). IIE interpretations are obtained by the merge of features related to the speaker’s deictic location ‘now’ in the Sentience projection in the CP layer above the modal in T\(^ 0\). Note that according to this account IIE features are interpreted higher than modal features. One question would be why examples like (7b) are not well-formed under the future reading of the relevant morpheme. The situation with this auxiliary is more complex. First, not many speakers accept an interpretation of this morpheme which is purely future. For those speakers, though, for which the unmarked future reading is possible, no ill-formedness arises with EC. For the majority of the other speakers, the question is what type of epistemic future this auxiliary encodes that is distinct from both IIE, as well as from a more well-behaved future, but at the same time is also ill-formed with ECs. We leave this issue for further research, as the exact readings need further attention (see also Mihoc 2013).
(27) * Ion posibil este la birou mai degrabă decât acasă.
    Ion possibly is at office more soon than home
    Intended: ‘According to the speaker, it is more plausible that Ion is possibly in the office rather than at home.’ (Romanian)

To summarize, by assimilating the epistemic component in ECs to gradable Assert (Greenberg & Wolf 2018), we derive the incompatibility of ECs and IIEs as a result of the competition for the degree modifier position. This proposal assumes that (some) evidentials function as degree modifiers. This correctly predicts the difference between inferential and hearsay indirect evidentials, assuming that the latter does not involve speaker’s commitment. We, thus, identify three (overt) elements that can function as degree modifies for Epist/Assert: MAdvs, IIEs, and -er in ECs.

### 4.3 Predictions

Our account makes a number of correct predictions. The first prediction is that the IIE is compatible with regular comparatives. In regular comparatives, IIE scopes above -er and the structure is grammatical, as shown in (28a) for Romanian and in (28b) for Bulgarian. In (28a) and (28b), -er merges low as it compares degrees of tallness/happiness, rather than degrees of belief as in ECs. The simplified LF for (28a) and (28b) is illustrated in (28c).

(28) a. Ion o fi mai înalt decât Maria.
    Ion PRESMP=IIE be more tall than Mary
    ‘Apparently, John is taller than Mary.’ (Romanian)

b. Ivan bil po-stastliv ot Maria.
    Ivan be-PST.PTCP=IIE more-happy from Maria
    ‘Apparently, Ivan is happier than Maria.’ (Bulgarian)

c. LF: [[EvidIIE(Assert)] [ [ -er [than Mary is d-tall/happy]] [John is d'-tall/happy]]]

The second prediction is that IIE can co-occur with epistemic attitude predicates like ‘believe’. This is illustrated in (29a) for Romanian and in (29b) for Bulgarian. We give the simplified LF for these examples in (29c).

(29) a. Ion o fi crezând toate minciunile.
    Ion PRESMP=IIE be believe.GER all lie.the.PL
    ‘Apparently, Ion believes all the lies.’ (Romanian)
b. Ivan bil vjarval na vsički l’ži.
   ‘Apparently, Ivan believes all the lies.’ (Bulgarian)

c. [[Evid\_IIE(Assert)] [Ion believes all the lies]]

These data support our account of the ill-formedness of ECs with IIEs. They also rule out alternative analyses according to which the deviance is due either to the incompatibility of evidentials and comparatives or to a potential conflict between evidentials and epistemic attitudes.

5 Concluding remarks and future research

We have analyzed some previously unnoticed facts related to epistemic modals and evidentials when they occur with epistemic comparatives in Bulgarian and Romanian. We showed that ECs are incompatible with IIEs and explained this pattern by claiming that the two categories compete for the same position. Given that the ill-formedness does not arise with epistemic modals, the data examined here argue for accounts under which inferential evidentials are separated from epistemic modals (Faller 2002, Aikhenvald 2014, Murray 2010; a.o.).

From a broader perspective, the observation presented in this paper and its account give rise to several questions. In the remainder of the conclusion we briefly touch on three of them, leaving the detailed investigation for future research.

First, one expectation is that ECs should be ill-formed with indirect evidentials across-the-board. However, there appear to be cases in which ECs are well-formed with expressions that could be analyzed as having evidential meaning.\(^{15}\) We illustrate some examples below. In (30) and (31) we see that evidential-like adverbials like vidimo and aparent ‘apparently’ are well-formed with the EC.\(^{16}\)

\(^{15}\)We thank Sergei Tatevosov for this observation.

\(^{16}\)As expected, adverbials with hearsay semantics are well-formed, see below. Recall that hearsay evidentials are not Assert modifiers, thus do not compete with ECs.

(i) Kazvat Ivan po-skoro e v offisa otkolkoto vkušti.
    ‘As they say, Ivan is in the office rather than at home.’
    (Bulgarian)

(ii) Cică Ion este la birou mai degrabă decât acasă.
    ‘As they say, John is in the office rather than at home.’
    (Romanian)
Examples of this type touch on an important issue, namely the difference between grammaticalized and phrasal evidentials. We take the former to be expressed by means of (inflectional) morphology on the verb. In the latter class we include adverbial evidentials (like apparently, etc.) and other phrasal units (like in my opinion, etc.), which have evidential semantics, see for example Aikhenvald 2014, a.o. We follow standard accounts for phrasal evidentials as having different syntax from grammaticalized evidentials (Faller 2002, Aikhenvald 2014; a.o.). Thus, the well-formedness of (30) and (31) is not problematic for our account, as lexical evidentials do not compete with -er for the assert modifier position.

Second, we also observe that ECs can be embedded under expressions like I guess, etc, that are sometimes claimed to have evidential interpretations. Two examples from Romanian are given in (32).

(32) a. Bănuiesc că Ion este la birou mai degrabă decât acasă.  
    guess.1.sg that Ion be.3sg at office more soon than home  
    ‘I guess Ion is in the office rather than at home.’  

b. Cred că Ion este la birou mai degrabă decât acasă.  
    believe.1.sg that Ion be.3sg at office more soon than home  
    ‘I believe Ion is in the office rather than at home.’  

(31) Aparent, Ion este la birou mai degrabă decât acasă.  
    apparently Ion is at office more soon than home  
    ‘Apparently, Ion is in the office rather than at home.’  

(30) Vidimo, Ivan po-skoro moje da v ofisa otkolkoto vkušti.  
    apparently, Ivan more-soon can DA is in office than home  
    ‘It is more plausible that Ivan might be at work than at home.’ (Bulgarian)

However, for cases like (32), there is independent evidence that they are bi-clausal (for example the presence of overt complementizers like că ‘that’). Therefore, competition does not arise. It is also well known that ECs can be embedded under attitude predicates like believe, hope, etc. (see Herburger & Rubinstein 2014, as well as the discussion in footnote 2). We assume that the embedding under I guess is amenable to a parallel analysis.17

More surprisingly, embedding improves the ungrammaticality of grammaticalized evidentials with ECs. See the contrast in (33a) vs. (33b) and (33c) from

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17 We thank an anonymous review for bringing to our attention Czech data that support the same conclusion. We are also grateful to another anonymous reviewer who pointed out to us the connection between embedding under I guess and attitude reports.
Romanian. This contrast deserves detailed attention and we leave it for further research.

(33)  
a. ?? Ion o  

                 la birou mai degrabă decât acasă.  

             Ion  

PRESM.3.SG  at office more soon  than  home  

‘I guess Ion is in the office rather than at home.’

b. Bănuiesc că  

             Ion o  

fi la birou mai degrabă decât acasă.  

guess.1.SG  that  Ion  

PRESM.3.SG be at office more soon  than  home  

‘I guess Ion is in the office rather than at home.’

c. Cred că  

             Ion o  

fi la birou mai degrabă decât  

believe.1.SG  that  Ion  

PRESM.3.SG be at office more soon  than  

home  

‘I believe Ion is in the office rather than at home.’  

(Romanian)

Finally, one of the anonymous reviewers makes the interesting observation that Polish ECs are impossible in negated future contexts. The same point can be made using Romanian data, as seen below:

(34)  ?? Ion nu  

                 va  

fi la birou mai degrabă decât acasă.  

Ion  

not  

FUT be at office more soon  than  home  

Intended: ‘Ion will not be in the office rather than at home.’  

(Romanian)

In Bulgarian similar examples seem to be well-formed, see (35).

(35)  Ivan ne šte da  

byde na rabota, a  

po-skoro v kušti.  

Ivan  

not  

FUT  DA  be  at  work  but  more-soon  at  home  

‘Ivan will not be at work rather than at home.’  

(Bulgarian)

However, the future marker šte in Bulgarian has been shown to be a versatile category with various types of interpretations (Rivero & Simeonova 2014). Thus, more refined diagnostics are needed to settle this problem. We leave a detailed account of this observation for further research.
**Abbreviations**

<table>
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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<td>ADV</td>
<td>adverb</td>
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<tr>
<td>COND</td>
<td>conditional</td>
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**Acknowledgements**

We would like to thank Roumyana Pancheva and Dimitar Kazakov for discussing the Bulgarian data with us. We are grateful to the audience of FDSL 12.5 and two anonymous reviewers for their helpful comments and questions. For Julie Goncharov, this research project was financially supported by the State of Lower-Saxony, Hannover, Germany (VWZN3181). For Monica Alexandrina Irimia, parts of this research have been funded by a grant from the University of Modena and Reggio Emilia. All errors are our own.

**References**


4 Epistemic comparatives and other expressions of speaker’s uncertainty


Squartini, Mario. 2001. The internal structure of evidentiality in Romance. *Studies in language* 25(2). 297–331. DOI:10.1075/sl.25.2.05squ


