

Epistemic indefinites under epistemic modals in Czech*

Radek Šimík

University of Potsdam/SFB632

1. Introduction

Epistemic indefinites (EIs) – formed in Czech by the postfix *-si* attached to wh-words – express, beyond standard indefinite semantics¹, ignorance about the precise identity of the referent. In (1), for instance, the speaker does not know the identity of the student that called².

- (1) Hledal tě **jakýsi** student.
looked.for you.acc some.EI student
'Some student was looking for you (but I don't know who it was).'

The ignorance implication introduced by the EI is conventional (though not “at issue”; see Potts 2005 or Simons et al. 2011) and cannot be easily cancelled, e.g. by saying ‘Guess who (it was)’, which would signal that the speaker knows the identity of the referent (the guess-who test is used, e.g., in Aloni & Port 2013); see (2a). Other indefinites only conversationally implicate ignorance, (2b), or even suggest the knowledge of the referent’s identity, (2c).

- (2) a. Hledal tě **jakýsi** student. # Hádej, kdo to byl.
looked.for you.acc some.EI student guess who it was
b. Hledal tě **nějaký** student. Hádej, kdo to byl.
looked.for you.acc some student guess who it was

* Apart from the FDSL10 this paper was presented in the Potsdam Syntax-Semantics Colloquium. I would like to thank the audiences, two anonymous reviewers, and the editor Olav Mueller-Reichau for their helpful comments.

1 The meaning of indefinite NPs as well as their compositional makeup are orthogonal to the purposes of this paper. For reasons of exposition, I assume that argumental indefinites denote existential quantifiers (Frege 1879; see Heim 2011 for a recent defence) but the present proposal could be reformulated using other denotations such as the ones based on restricted variables (Heim 1982), sets of individuals (Kratzer & Shimoyama 2002), choice functions (Winter 1997), or dynamic existential quantifiers (Groenendijk & Stokhof 1991). Concerning the issue of DP-internal compositionality, the present paper should be compatible with various possibilities; see, e.g., Yanovich (2008) for an explicit analysis of the Russian *kakoj* (corresponding to the Czech *jaký*) and its role in the composition of indefinite NPs.

2 Boldface in examples is used for guiding reader’s attention. All examples are in Czech unless marked otherwise.

- c. Hledal tě **jeden** student. Hádej, kdo to byl.
 looked.for you.acc one student guess who it was
 ‘Some student was looking for you. Guess who it was.’

EI exist, in different semantic and morphological flavors, in many languages (see Geist 2008 for Russian and Richtarčíková 2013, this volume for Slovak, to name some Slavic references). In this paper, I concentrate on Czech and particularly on the novel observation that Czech EIs cannot occur in the scope of epistemic modals.

The rest of the paper is organized as follows. In section 2, I provide the core observation and a sketch of the analysis. Section 3 is an overview of the basic semantic properties of Czech EIs, mainly their scopal properties and the properties of the ignorance implication. In section 4, I propose an explanation of the core observation. I argue that the ignorance implication of EIs is trivialized under epistemic modals. Section 5 discusses some predictions and open issues.

2. The puzzle and a sketch of the solution

Czech EIs are unacceptable when they cooccur with epistemic modals, irrespective of the syntactic category of the modal (verbal or adverbial) and of the semantic force of the modal (necessity or possibility).³ For ease of reference, I will call this phenomenon *epistemic clash*.

- (3) *We’re coming back from a party and expect to find Tom sleeping in his bed. Yet, the bed is empty and snoring sounds are coming from elsewhere in the house.*

- a. *{**Musí / může**} spát na **jakémsi** gauči.
 must might sleep.inf on some.EI couch
 Intended: ‘He must/might be sleeping on some couch (but I don’t know which).’
- b. *{**Určitě / možná**} spí na **jakémsi** gauči.
 surely maybe sleep.3sg on some.EI couch
 Intended: ‘Surely/Maybe he’s sleeping on some couch (but I don’t know which).’

The combination of epistemic modals with other indefinites is acceptable.

3 I mark the relevant unacceptability by * though it is intuitively not as strong as ungrammaticality. Note, however, that it is not what is normally considered contextual infelicity (marked by #), as there is no context in which the sentences are good. I will argue that the unacceptability has a semantic source, but is stronger than a run-of-the-mill semantic deviance (e.g. triviality) because it involves Gajewski’s (2002) L-analyticity. See footnote 12 and the related discussion.

(4) *The same context as in (3)*

- a. {**Musí / může**} spát na {**nějakém / jednom**} gauči.
 must might sleep.inf on some one couch
 ‘He must/might be sleeping on some couch.’
- b. {**Určitě / možná**} spí na {**nějakém / jednom**} gauči.
 surely maybe sleep.3sg on some one couch
 ‘Surely/Maybe he’s sleeping on some couch.’

I will argue that the ignorance that stems from the evidential nature of epistemic modals (von Stechow & Gillies 2010) entails the ignorance implication of EIs. Since EIs are only licensed if the ignorance they express is non-trivial (Aloni & Port 2013), they are ruled out under epistemic modals.

3. Properties of Czech epistemic indefinites

A corpus study reveals two different uses of the determiner *jakýsi* ‘some’, only one of which qualifies as the epistemic use. The following sentences (all from the Czech National Corpus, ČNK) illustrate the difference. In (5) *jakousi* is a typical epistemic indefinite, implying that the speaker does not know the identity of the Swedish woman that was arrested. In (6), on the other hand, the determiner has a hedging effect, meaning ‘a kind of’ or ‘something like’. There is no implication that the speaker does not know the identity of the referent. In fact, in neither example in (6) does the phrase containing the determiner denote any referent (or state its existence): in (6a) the phrase *jakýmsi středem Procházkovy rodiny* ‘a kind of center of the Procházka family’ is predicative and in (6b) the existence of a referent is denied, since the phrase *jakýsi manuál...* ‘a kind of manual...’ takes narrow scope w.r.t. the implicit negation introduced by the verb *chybí* ‘miss’.^{4,5,6}

4 There is not enough space for presenting the details of the corpus study. I refer the reader to the handout from the conference, which can be downloaded at <http://www.sfb632.uni-potsdam.de/~simik/pdf/simik-epistemic-hand.pdf>.

5 Many of the non-epistemic examples can be reformulated using the determiner *takový* ‘such’ (or *takový nějaký*, lit. ‘such some’), giving rise to what Hirschová (1988) calls “untypical uses” of this normally definite/demonstrative determiner and probably corresponding to what Wood (2002) calls the intensifying *such*. Malte Zimmermann (p.c.) made me aware of a potentially similar hedging use of *so’n(e)* ‘such’ in German; see Umbach & Ebert (2009).

6 An anonymous reviewer finds it too strong to say that (6b) denies the existence of a manual. Being unsure whether the reviewer is a native speaker, I can just reaffirm my claim: the most likely reading of (6b) is one where there is no manual, or at least no manual

- (5) [...] nejprve omylem zatkli **jakousi** Švédku. (ČNK)
 first mistakenly arrested some.EI Swedish.woman
 ‘First they mistakenly arrested some Swedish woman.’
- (6) a. Její dům byl **jakýmsi** středem Procházkovy rodiny. (ČNK)
 her house was some center Procházka’s family
 ‘Her house was a kind of / something like a center of the Procházka family.’
- b. Chybí jim **jakýsi** manuál s radami, jak v konkrétní situaci
 miss.3sg them some manual with advice how in particular situation
 reagovat, [...] (ČNK)
 react.inf
 ‘They’re missing a kind of / something like a manual with advice on how to react
 in particular situations.’

As illustrated below, only the epistemic use exhibits the epistemic clash, which supports the present claim that it is due to the semantics (rather than any formal property) of Czech *-si* indefinites.

- (7) *Nejprve **možná / určitě** zatkli **jakousi** Švédku.
 first maybe surely arrested some.EI Swedish.woman
 Intended: ‘First they might/must have arrested some Swedish woman (I don’t know which).’
- (8) a. Její dům **mohl / musel** být **jakýmsi** středem Procházkovy rodiny.
 her house could had.to be some center P.’s family
 ‘Her house might/must (as far as we know) be a kind of center of P. family.’
- b. **Možná / Určitě** jim chybí **jakýsi** manuál s radami.
 maybe surely them miss.3sg some manual with advice
 ‘Maybe/Surely they’re missing a kind of manual with advice.’

From now on I will only deal with the epistemic use of *-si* indefinites. In the rest of this section I present some basic semantic properties of Czech EIs.

Czech EIs take wide scope w.r.t. extensional quantifiers/operators. There is no reading of (9) that is true in a situation in which Karel did not invite anybody from Prague – a reading that a narrow-scoping indefinite (e.g. *někoho* ‘somebody’) can express. Likewise, (10) is only true in a situation where everybody

available to ‘them’. This said, it should also be pointed out that (6b) has a less prominent reading, on which *jakýsi* is used in the epistemic way. On that reading, the phrase *jakýsi manuál...* ‘some manual...’ introduces a referent and the ignorance implication is present. Needless to say, it is important to keep these two readings apart when judging or further manipulating the sentence. Thus, (8b) is only acceptable on the non-epistemic reading.

was supposed to contact one and the same person from Prague (*někoho* is compatible with the covarying reading).

- (9) Karel nám **neřekl**, že kontaktoval **kohosi** z Prahy.
 K. us neg.told that contacted somebody.EI from Prague
 ‘Karel didn’t tell us that he contacted somebody from Prague.’ (∃>-)
- (10) **Každý** měl za úkol kontaktovat **kohosi** z Prahy.
 everybody had for task contact.inf somebody.EI from Prague
 ‘Everybody was supposed to contact somebody from Prague.’ (∃>∀)

Czech EIs also take wide scope w.r.t. intensional verbs, root modals, and deontic modals. (11) can only be true if there is an actual secretary that Karel is looking for (*nějakou* ‘some’ is compatible with there being no actual secretary that Karel is looking for). Likewise, (12) can only be true if there is an actual Norwegian man that Marie wants / has to marry (again, as opposed to the variant with *nějakého*).

- (11) Karel **hledá** **jakousi** sekretářku.
 K. look.for.3sg some.EI secretary
 ‘Karel is looking for some secretary.’ (∃>look for)
- (12) Marie se **chce** / **musí** vdát za **jakéhosi** Nora.
 M. refl want.3sg must.3sg marry to some.EI Norwegian.man
 ‘Marie wants / has to marry some Norwegian man.’ (∃>want/must)

Czech EIs scope below intensional attitude predicates like *think* or *believe*. By uttering (13), the speaker is not committed to the existence of a unicorn and can thus use the sentence to express that Karel (say, a psychiatric patient) believes there to be a unicorn that he rides on Wednesdays. Despite the availability of the narrow scope, the ignorance about the identity of the unicorn remains a property of the speaker.

- (13) Karel **si myslí**, že každou středu jezdí na **jakémsi** jednorožci.
 Karel refl think.3sg that every Wednesday rides on some.EI unicorn
 ‘Karel thinks that he rides some unicorn every Wednesday.’ (think>∃)

That EI-induced ignorance can only be anchored to the speaker is more clearly illustrated in (14).⁷ Let us assume that I am the speaker of (14). Let us further assume that Petr Šimík is my brother – a referent that I can identify. If it were equally possible to anchor the ignorance to the speaker, i.e. to me, or to Marie, the latter would have to win because the former choice leads to a contra-

7 Note that proper names in Czech readily combine with all sorts of determiners, definite and indefinite. There is nothing special about *jakýsi* in this respect.

diction – (14) would express that I do not know the identity of my own brother. Yet, according to my intuition, the ignorance is anchored to me, and the reason why (14) is felicitous is that the name *Petra Šimíka* is forced to refer to somebody of that name – somebody who is not necessarily my brother.

(14) **Marie** říkala, že potkala **jakéhosi** Petra Šimíka.

M. said that met some.EI P. Š.

‘Marie said that she met (somebody called) Petr Šimík (I don’t know who it was).’

As I will show later, the speaker-ignorance-only property of Czech EIs (which does not hold for other languages, see Aloni & Port 2013) is part of the reason why the epistemic clash appears so systematically.

The ignorance expressed by EIs is only partial. Anticipating the analysis from section 4.2, Aloni & Port (2013) argue that the speaker can always identify the referent in one way or another. Importantly, however, this identification method is not the one that is contextually required for the knowledge of the referent. Among the most common identification methods that are available to the speaker (judging on my small corpus study; see footnote 4) are visual identification (identification by ostension in Aloni & Port’s terms), exemplified in (15a), and identification by reported evidence, exemplified in (15b), where the speaker relies on a newspaper source for purposes of the identification of the ‘mafia boss’. The fact that the speaker decides to use the EI, in spite of being able to identify the referent in some way, suggests that she does not possess the knowledge required to identify the referent in some contextually more relevant way. In the cases at hand, the speaker implies that she cannot provide any relevant closer description or perhaps the name of the referent.

(15) a. [...] tu jsem v dáli spatřil [...] **jakousi** štíhlou věž. (ČNK)
suddenly aux.1sg in far spotted some.EI narrow tower

‘[...] suddenly I spotted [...] a narrow tower. I don’t know what tower it was.’

b. Připomíná mi to jeden citát, který jsem si kdysi vystříhl z
reminds me it one quote which aux.1sg refl once cut out
novin. Ptali se tam po zatčení **jakéhosi** šéfa mafie, jak vlastně
newspaper asked refl there after arresting some.EI boss mafia how actually
ta mafie pracuje, [...] (ČNK)
the mafia works

‘It reminds me of a quote that I once cut out from a newspaper. There they were asking some mafia boss (I don’t know who he was), after arresting him, how the mafia is actually working.’

Czech is like German and unlike Italian or Spanish (see Alonso-Ovalle & Menéndez-Benito 2003) in that the Czech EI places virtually no restrictions on

which methods of identification are available and which are unavailable to the speaker. In Italian and Spanish, Aloni & Port (2003) argue, examples like (15a) are impossible because the EI determiner – *un qualche* in Italian and *algún* in Spanish – requires that the unavailable identification method is higher on the scale “ostension > naming > description” than the available identification method.⁸

4. Analysis

My proposal consists of two basic ingredients: von Fintel & Gillies’ (2010) assumption that epistemic modals come with an evidential component and Aloni & Port’s (2013) theory of referent identification. I discuss these aspects of the proposal separately and then show how they apply to the Czech epistemic clash.

4.1 Evidential presupposition in epistemic modals (von Fintel & Gillies 2010)

Informally, von Fintel & Gillies (2010) argue that for an epistemic modal M and a proposition p , uttering $M(p)$ implies that the speaker has no direct evidence that p or that not p . For example, if I say “It must/might be raining”, it follows that I have no direct evidence that it is raining and that I have no direct evidence that it is not raining (with possibility modals this effect only arises under negation). Consequently, the utterance will be felicitous in a situation like (16a), where the evidence for p is inferential, in (16b), where the evidence is auditory (and inferential), but not in a situation like (16c), where the evidence is visual and therefore direct.⁹

- (16) a. *I’m indoors and see people coming in with wet umbrellas.*
It must/might be raining.
- b. *I’m indoors and hear dripping sounds coming from outside.*
It must/might be raining.
- c. *I’m looking out of a window and see that it’s raining.*
#It must/might be raining. (cf. It is raining.)

8 Examples of the various possible combinations of identification-method (un)availability can be found in the handout (see footnote 4).

9 In languages with grammatical evidentiality visual perception is the primary (if not the only) licenser of direct evidential markers (e.g., Floyd 1997).

Czech modals behave just like English ones: the example (17) is only felicitous in contexts (16a) and (16b) but not (16c). Similar examples (requiring different predicates) could be formed using verbal modals.

- (17) Určitě / možná prší.
 surely maybe rain.3sg
 ‘It must/might be raining.’

Von Fintel & Gillies argue that the evidential implication of modals is a presupposition. Adopting this assumption, we can formulate simplified lexical entries for epistemic *must/surely* and *might/maybe* as in (18) and (19), respectively. Given some evaluation world w , *must/surely* denotes a partial function from propositions p to truth values and yields 1 iff p is entailed by the belief-state B of the speaker in w ; likewise, *might/maybe* denotes a partial function that yields 1 iff its argument p is compatible with the speaker’s belief-state in w . Moreover, the functions are only defined if the speaker has no direct evidence that p or that not p in w .

- (18) $[[\text{must/surely}]]^w = \lambda p. 1$ iff $\forall w' [B_{\text{speaker},w}(w') \rightarrow p(w')]$
 defined only if the speaker has no direct evidence in w that $p(w)$ or $\neg p(w)$
- (19) $[[\text{might/maybe}]]^w = \lambda p. 1$ iff $\exists w' [B_{\text{speaker},w}(w') \ \& \ p(w')]$
 defined only if the speaker has no direct evidence in w that $p(w)$ or $\neg p(w)$

Let us now have a look at what happens when an epistemic modal combines with a statement containing an indefinite. More particularly, we are interested in cases where the indefinite scopes below the epistemic modal, as that is how Czech epistemic indefinites behave (see (13) in section 3).

- (20) Somebody must be at the front door.

- (21) $[[\text{must}]]^w(\lambda w'. \exists x. x \text{ is at the front door in } w') = 1$ iff $\forall w'' [B_{\text{speaker},w}(w'') \rightarrow \exists x. x \text{ is at the front door in } w'']]$

defined only if the speaker neither has direct evidence that (a), nor that (b)

- a. $\exists x. x$ is at the front door in w
 b. $\neg \exists x. x$ is at the front door in w

It follows from the truth-conditions (21) (or more precisely from the presupposition (21a)) that the speaker cannot *see* anybody that would make (20) true. More generally, in a proposition where an indefinite scopes below an epistemic modal, the speaker cannot see (visually verify the existence of) any individual that makes the proposition true. The existence of such an individual is inferred indirectly.

4.2 Licensing EIs by shifting the method of identification (Aloni & Port 2013)

Aloni & Port (2013) (A&P) argue that EIs belong to the class of indefinites that require licensing (negative polarity items are typical representatives). For ease of exposition, I will call the class *sensitive indefinites*. Sensitive indefinites are licensed in two steps: (i) they induce an obligatory shift in the domain of quantification and (ii) they express a felicity condition associated with that shift. The famous case of *any* as analyzed by Kadmon & Landman (1993) can serve as an example. The shift that *any* induces on its quantification domain is widening. Suppose that *a book* in (22a) quantifies over the set of books Dave has recently started reading $\{b_1, b_2, b_3\}$. Then *any book* in (22b) quantifies over a proper superset – not just the books he has started reading but also, e.g., all the other books Dave has, such as $\{b_1, b_2, b_3, b_4, b_5, b_6\}$. That is, the original set gets widened by using *any*. The felicity condition that *any* contributes is strengthening: in order for (22b) to satisfy this condition (to be acceptable), it must asymmetrically entail the corresponding statement without *any*, i.e. (22a). In our example, this is indeed the case: (22b) entails (22a) but not vice versa.

- (22) a. Dave didn't read **a** book yesterday.
 b. Dave didn't read **any** book yesterday.

An example where the felicity condition is not satisfied, i.e. where *any* does not produce a stronger statement is (23). While (23a) entails that Dave read one of the books $\{b_1, b_2, b_3\}$ yesterday, (23b) entails that Dave read one of the books $\{b_1, b_2, b_3, b_4, b_5, b_6\}$ yesterday. As a result, *any* produces a weaker statement – (23b) does not entail (23a) – and that leads to unacceptability.

- (23) a. Dave read **a** book yesterday.
 b. *Dave read **any** book yesterday.

A&P apply the same logic to EIs. They argue that EIs induce a shift in the *method of identification* of the individuals in the domain of quantification. The analysis is based on Aloni's (2001) assumption that one and the same set of referents can be identified using different identification methods.¹⁰ For instance, a particular set of three men (provided a certain context *c*) can be identified by naming (24a), description (24b), ostension/pointing (24c) (indices marking different ways of pointing), etc.

10 Formally, a method of identification corresponds to a *conceptual cover*, i.e. a set of individual concepts. For reasons of space, the discussion here is kept very informal.

- (24) a. $[[\text{man}_{\text{naming}}]]^c = \{\text{Adam, Ben, Carl}\}$
 b. $[[\text{man}_{\text{description}}]]^c = \{\text{the man with black hair, the man with blond hair, the man with gray hair}\}$
 c. $[[\text{man}_{\text{ostension}}]]^c = \{\text{that}_1 \text{ man, that}_2 \text{ man, that}_3 \text{ man}\}$

You might be able to identify an individual by one method (e.g. naming) but not by another (e.g. ostension/description), as in (25).

- (25) The man's name is Ben but I can't show him to you in this picture – I don't know what he looks like.

Now, the context usually specifies which method of identification is required for “knowing an individual”. You can be ignorant of a person's appearance (as in (25)) and at the same time there will be contexts where you can truthfully say that you know who the person is (namely Ben).

Coming back to EIs, consider now (26), repeated from (1). A natural context for (26) is one where I'm reporting to an officemate of mine that a student looked for him while he was absent. By using the EI *jakýsi* I convey that I cannot identify the student in a contextually relevant way, e.g., a way that would help my officemate identify the student. Such a way might be naming. The fact that I could identify the student visually (I could point at him if I saw him) will not help in the current context.

- (26) Hledal tě **jakýsi** student.
 looked.for you.acc some.EI student
 ‘Some student was looking for you (but I don't know who it was).’

We may model the meaning of (26) as follows. On the one hand, (26) expresses the existence of some student identifiable by the speaker visually such that the student looked for the hearer, (27a). On the other hand, (26) expresses the non-existence of a student identifiable by the speaker by naming such that the student looked for the hearer, (27b) – the ignorance implication of EIs.¹¹

- (27) a. $\exists x. [[\text{student}_{\text{visual}}]]^c(x) \ \& \ x \text{ looked for the hearer}$
 b. $\neg \exists x. [[\text{student}_{\text{naming}}]]^c(x) \ \& \ \text{the speaker knows that } x \text{ looked for the hearer}$

11 As pointed out by an anonymous reviewer, (27b) feels a bit strong, provided the student in question does in fact exist. Perhaps a slightly modified paraphrase helps: the student that looked for the hearer does not belong to the set of students that the speaker can identify by naming.

Using this example, we can now get to the specifics of A&P’s proposal concerning the licensing of EIs. First, the EI shifts the domain of quantification by shifting it to a method of identification that is irrelevant for knowledge in the current context, i.e., $[[\text{student}_{\text{naming}}]]^c$ shifts to $[[\text{student}_{\text{visual}}]]^c$ (e.g. {Adam, Ben, Carl} shifts to {that₁ man, that₂ man, that₃ man}). Second, the EI expresses a felicity condition that the shift is justified only if it is not “vacuous”. According to A&P, the shift would be vacuous if the ignorance implication (27b) could not be derived, particularly, if the speaker *could* identify the individual in the contextually relevant way. What I would like to add here is, I believe, quite a natural extension of the notion of a “vacuous shift”: The shift can also be vacuous if the ignorance implication derived by that shift is already entailed by the basic statement (or its presuppositions). In such a case, the shift is vacuous because it does not lead to an informative ignorance implication. In the next subsection, I argue that this is precisely what happens when EIs appear under epistemic modals.

4.3 Deriving the epistemic clash

The epistemic clash is illustrated once again in (28) (modified from (3)): the EI determiner *jakémsi* is not acceptable under the epistemic modal *určitě* ‘surely’, (28a), while its non-epistemic correlate is, (28b).

- (28) a. *Tom **určitě** spí na **jakémsi** gauči.
 Tom surely sleep.3sg on some.EI couch
 Intended: ‘He must be sleeping on some couch (I don’t know which one).’
- b. Tom **určitě** spí na **nějakém** gauči.
 Tom surely sleep.3sg on some couch
 ‘He must be sleeping on some couch.’

Consider first the meaning of (28b).

- (29) $[[\text{(28b)}]]^w = 1$ iff $\forall w' [B_{\text{speaker},w}(w') \rightarrow \exists x. \text{Tom sleeps on a couch } x \text{ in } w']$
 defined only if the speaker neither has direct evidence that (a), nor that (b)
- a. $\exists x. \text{Tom sleeps on a couch } x \text{ in } w$
 b. $\neg \exists x. \text{Tom sleeps on a couch } x \text{ in } w$

Let us now turn to the core case, where the epistemic clash happens – (28a). First, it is important to determine the method of identification required for knowing the identity of the referent contributed by the EI. I would like to suggest that the method is dictated by the use of the epistemic modal. The evidential component of the epistemic modal clearly suggests that what is required for

knowledge (not only of the referent but of the whole proposition) is direct evidence. In 4.1 I suggested that direct evidence translates to visual evidence. This is intuitively right: if the speaker could see the couch Tom is sleeping on, i.e., if she *knew* that Tom is sleeping on some couch, she would not be able to use the modal in the first place: the modal is licensed precisely because the speaker does not have direct evidence that Tom is (or is not) sleeping on some couch. Thus, the use of the modal dictates that the method of identification required for knowing the identity of the couch that Tom is sleeping on is visual. This in turn leads to the derivation of the ignorance statement in (30ii).

- (30) $[[[(28a)]]^w = 1$ iff
- i. $\forall w' [B_{\text{speaker},w}(w') \rightarrow \exists x. \text{Tom sleeps on a couch } x \text{ in } w' \ \& \ x \text{ is identifiable by the speaker in some non-visual way in } w \text{ (e.g. by reported evidence)}] \ \&$
 - ii. $\neg \exists x. x \text{ is a couch identifiable by the speaker visually in } w \ \& \ \forall w' [B_{\text{speaker},w}(w') \rightarrow \exists x. \text{Tom sleeps on } x \text{ in } w']$

defined only if the speaker neither has direct evidence that (a), nor that (b)

- a. $\exists x. \text{Tom sleeps on a couch } x \text{ in } w$
- b. $\neg \exists x. \text{Tom sleeps on a couch } x \text{ in } w$

At a closer look we realize that the presupposition of the modal, (30a)/(30b), (asymmetrically) entails the ignorance implication introduced by the EI. This is so if in general (31) holds, which seems intuitive. Applied to the case at hand, if the speaker has no direct evidence that there is (or is not) a couch on which Tom is sleeping, then it follows that there is no couch such that the speaker has direct evidence that Tom is sleeping on it.

- (31) For any P, if the speaker has no direct evidence that $\exists x. P(x)$ or $\neg \exists x. P(x)$, then $\neg \exists x$ such that the speaker has direct evidence that $P(x)$.

The reason why the epistemic clash does not just lead to some sort of sense of redundancy but rather to complete unacceptability follows from A&P's assumption that EIs belong to the class of what I call sensitive indefinites. In particular, in order for the indefinite to be licensed/acceptable at all, the shift in the method of identification it induces must not be vacuous. The epistemic clash creates a situation where the shift leads to an ignorance implication that is already entailed by the evidential presupposition of the modal. Hence, the shift is vacuous, making the the contribution of the EI trivial, and the whole sentence in which it appears unacceptable.¹²

12 This proposal can be understood in terms of Gajewski's (2002) "L-analyticity". A semantically trivial statement is "L-analytic", and therefore, as Gajewski argues, ungram-

5. Summary, predictions, and an open issue

Let me summarize. In section 2 I introduced the core observation of this paper: Czech EIs are unacceptable under epistemic modals. In section 4 I proposed an analysis of this unacceptability which is based on two independent proposals: (i) von Stechow & Gillies' (2010) idea that epistemic modals presuppose the lack of direct evidence on the part of the speaker (or more generally the epistemic judge) that would support the truth or falsity of the modal's prejacent and (ii) Aloni & Port's (2013) idea that EIs must be licensed by the non-vacuous expression of ignorance. The present proposal is based on the idea that the ignorance implication of EIs is trivial under epistemic modals because it is entailed by the epistemic modal's evidential presupposition. This triviality falls under the rubric of Gajewski's L-analyticity, producing unacceptability. In this final section, I would like to briefly discuss a number of predictions and one problem of the present proposal.

In section 3 I showed that the ignorance of Czech EIs is always on the part of the speaker, never other attitude holders (such as external arguments of attitude predicates). This, however, is not true of epistemic modals, which can have an epistemic judge different from the speaker. The present proposal predicts that if the epistemic judge of the EI and the epistemic modal differ, the epistemic clash should not arise. This is indeed the case – (32) is acceptable.

- (32) **Podle Marie Tom možná spí na jakémsi gauči.**
 according.to M. T. maybe sleep.3sg on some.EI couch
 'According to Mary Tom might be sleeping on some couch (I don't know which).'

It is further predicted that attitude predicates whose interaction with evidentiality is not that strong/conventional would be compatible with EIs in Czech. Or at least the epistemic clash should not be that pronounced. This is exactly what we observe, there is only a tinge of unacceptability in examples like (33).

matical, if the triviality is preserved under any replacement of the logical constants. For instance, the statement *John is John* is trivial, but not L-analytic because replacing a constant lifts the triviality: *John is Dave*. In contrast, the replacement of any constant in sentences involving the epistemic clash (while sticking to the epistemic nature of the modal) will still deliver a trivial ignorance implication. In that sense, the implication is L-analytic and hence ungrammatical. Yet: Can this be reconciled with the claim made in footnote 3 that the unacceptability caused by the epistemic clash does not feel as strong as ungrammaticality? I hypothesize that the unacceptability is not so pronounced because the L-analyticity targets content that is not "at issue" (in the broad sense of Simons et al. 2011).

- (33) [?] **Myslím si / Věřím**, že Tom spí na **jakémsi** gauči.
 think.1sg refl believe.1sg that T. sleep.3sg on some.EI couch
 ‘I think / believe that Tom sleeps on some couch (I don’t know which).’

A further prediction that is worth mentioning concerns the interaction of Czech EIs with evidential markers. Like epistemic modals, evidential markers provide a cue for how the ignorance implication of the EI is to be interpreted: in section 4.3 I argued that the epistemic modal forces the EI-induced ignorance to be related to the direct/visual method of identification. There is an important difference, however: while epistemic modals indicate the *missing* kind of evidence required for verifying/falsifying the prejacent, evidential markers indicate the *source* of the evidence for verifying/falsifying the prejacent. The cue that the EI takes from an evidential is, therefore, a “positive” one: the evidential indicates the method of identification that the speaker relies on while establishing the referent of the EI. The method of identification that is unavailable to the speaker (but required for knowledge) remains contextually determined and unaffected by the evidential. Therefore, nothing like an “evidential clash”, comparable to the epistemic clash, is expected. An example of how EIs interact with evidentials in Czech is in (34). On the most prominent (if not the only) interpretation of (34), the speaker identifies the referent of the couch that Tom is sleeping on by relying on reported evidence – a cue taken from the reportative evidential marker *prý* ‘allegedly/they say’. At the same time, (34) implies that the speaker cannot identify the referent in some other, contextually relevant way.

- (34) Tom **prý** spí na **jakémsi** gauči.
 T. allegedly sleep.3sg on some.EI couch
 ‘They say that Tom is sleeping on some couch (I don’t know which).’

I would like to finish by mentioning what appears to be the biggest problem for the present analysis: the fact that the epistemic clash has not been observed for EIs in other languages. Example (35) (constructed after A&P) shows that the German EI determiner *irgendein* combines with epistemic modals without any problems. Moreover, it does seem to trigger the epistemic effect: (35) implies that the speaker does not know the identity of the doctor that Maria married.

- (35) Maria **muss irgendeinen** Arzt geheiratet haben. (German)
 M. must some.EI doctor married have
 ‘Maria must have married some doctor (I don’t know which one).’

I cannot offer a solution to this problem in this paper. Yet, I would like to point out an important difference between the Czech and the German EI: the German EI has a much broader range of meanings. As argued by A&P, there are contexts (e.g. under negation or under deontic modals) where the ignorance im-

plication is completely absent from *irgend-* indefinites, being replaced by other implications, such as the indifference or free choice implication. Therefore, since the ignorance implication is in principle detachable from German EIs, it cannot be *a priori* ruled out that *irgend-* indefinites in examples like (35) do not contribute an ignorance implication at all and hence do not produce the epistemic clash.¹³ The problem is that we cannot even tell. Due to the evidential presupposition contributed by the epistemic modal, an ignorance implication is present in (35) even without the EI, i.e., with a corresponding plain (narrow scoping) indefinite. To make things clear – the present analysis predicts that *irgendein* under epistemic modals contributes no ignorance implication and is, technically, not an EI at all. I leave the issue of testing the prediction for future research.¹⁴

Bibliography

Aloni, M. (2001) Quantification under conceptual covers. PhD thesis, University of Amsterdam.

Aloni, M. & A. Port (2013) Epistemic indefinites cross-linguistically. In: Y. Fainleib, N. LaCara & Y. Park (eds.), *NELS 41: Proceedings of the 41st Annual Meeting of the North East Linguistic Society, Vol. 1*. Amherst, MA: GLSA Publications, 29-42.

-
- 13 Slovak EIs are arguably very close to German ones. Richtarčíková (this volume) shows that the ignorance implication of Slovak EIs disappears under some operators such as imperatives, deontic modals, or certain attitude verbs, being replaced by an indifference implication (see, e.g., Richtarčíková's examples (2) or (4) and the associated discussion). And, indeed, Richtarčíková (p.c., but cf. her example (7) in this volume) notes that Slovak EIs are acceptable under epistemic modals, just like German ones. For completeness, recall that in Czech, there are no operators that can "remove" the ignorance implication of the EI (see section 3), which leads to the epistemic clash under epistemic modals. Finally, let me point out that the non-epistemic "hedging" use of the Czech *-si* indefinite, which does not exhibit the epistemic clash (ex. (8)), requires a different kind of treatment, as it lacks the ignorance implication in any context; no operator is needed to achieve that.
- 14 An anonymous reviewer is wondering whether the epistemic and the putative non-epistemic use of *irgend-* indefinites under epistemic modals could not be distinguished based on the relative scope of the modal and the indefinite. In particular, s/he suggests that while the epistemic indefinite could scope over the modal (introducing a discourse referent), the non-epistemic one could scope below the modal (not introducing a discourse referent). I am afraid, however, that no such difference is expected. In either analysis, the assumption is that the indefinite scopes below the modal. For the non-epistemic analysis, low scope is needed to generate the ignorance effect (from the evidential implication of the modal) and as regards the epistemic analysis, A&P also assume low scope. In any case, the facts suggest that, indeed, epistemic(-like) indefinites scope low because they do not introduce discourse referents: something like (35) cannot be felicitously followed by 'He was at the party yesterday.' (Marta Wierzba, p.c.)

- Alonso-Ovalle, L. & P. Menéndez-Benito (2003) Some epistemic indefinites. In: M. Kadowaki & S. Kawahara (eds.), *NELS 33: Proceedings of the 33rd Annual Meeting of the North East Linguistic Society*. Amherst, MA: GLSA Publications, 1-12.
- Czech National Corpus – SYN. Institute of the Czech National Corpus, Praha. Accessed on November 19, 2013. URL <http://www.korpus.cz>
- von Fintel, K. & A. S. Gillies (2010) *Must... stay... strong!* *Natural Language Semantics* 18, 351-383.
- Floyd, R. (1997) *La estructura categorial de los evidenciales en la Quechua Wanka*. Lima: Ministerio de Educación, Instituto Lingüístico de Verano.
- Frege, G. (1879) *Begriffsschrift: Eine der arithmetischen nachgebildete Formelsprache des reinen Denkens*. Verlag von Louis Nebert.
- Gajewski, J. (2002) On analyticity in natural language. Manuscript, MIT, Cambridge, MA.
- Geist, L. (2008) Specificity as referential anchoring: Evidence from Russian. In: Grønn, A. (ed.), *Proceedings of Sinn und Bedeutung 12*. Oslo: ILOS, 151-164.
- Groenendijk, J. & M. Stokhof (1991) Dynamic predicate logic. *Linguistics & Philosophy* 14, 39-100.
- Heim, I. (1982) The semantics of definite and indefinite noun phrases. PhD thesis, University of Massachusetts at Amherst.
- Heim, I. (2011) Definiteness and indefiniteness. In: C. Maienborn, K. von Heusinger, & P. Portner (eds.), *Semantics: An international handbook of natural language meaning*. Berlin: de Gruyter, 1025-1058.
- Hirschová, M. (1988) Netypické případy užití výrazů *takový, tak*. *Naše řeč* 71, 57-61.
- Kadmon, N. & F. Landman (1993) *Any*. *Linguistics & Philosophy* 16, 353-422.
- Kratzer, A. & Y. Shimoyama (2002) Indeterminate pronouns: The view from Japanese. In Y. Otsu (ed.), *Proceedings of the 3rd Tokyo Conference on Psycholinguistics*. Tokyo: Hituzi Syobo, 1-25.
- Potts, C. (2005) *The logic of conventional implicatures*. Oxford: Oxford University Press.
- Richtarčíková, V. (2013) Ignorance and indifference: Epistemic indefinites in Slovak. Masters thesis, Pompeu Fabra University.
- Richtarčíková, V. (this volume) Epistemic indefinites in Slovak: Alternatives and exhaustification.
- Simons, M., J. Tonhauser, D. Beaver & C. Roberts (2011) What projects and why. In: N. Li & D. Lutz (eds.), *SALT 20: Proceedings from the 20th Conference on Semantics and Linguistic Theory*. Ithaca, NY: CLC Publications, 309-327.
- Umbach, C. & C. Ebert (2009) German demonstrative *so*: Intensifying and hedging effects. *Sprache und Datenverarbeitung: International Journal for Language Data Processing* 1-2, 153-168.
- Winter, Y. (1997) Choice functions and the scopal semantics of indefinites. *Linguistics & Philosophy* 20, 399-467.
- Wood, J. L. (2002) Much about *such*. *Studia Linguistica* 56, 91-115.
- Yanovich, I. (2008) Ordinary property and identifying property wh-words: Two *kakojs* in Russian. In: F. Marušič & R. Žaucer (eds.), *Studies in formal Slavic linguistics: Contributions from Formal Description of Slavic Languages (FDSL) 6.5*. Frankfurt am Main: Peter Lang, 309-323.

simik@uni-potsdam.de