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## The dynamic construal of epistential meaning

### Abstract

This paper<sup>1</sup> proposes a reassessment of the category of inferentiality from a functional cognitive theoretical perspective. It presents a view of evidential, inferential and epistemic meaning as emerging via dynamic construal from intersubjective acts of sharing knowledge/experience. Inferentiality will be regarded as a metaevidential phenomenon (cf. Horváth 2013) distinguishable in principle from evidentiality proper; however, a neat separation of these categories will be discarded. More specifically, the present proposal argues for a shared domain encompassing both inferentiality and epistemic modality, since both are subject to the same processes of inference and subjectification. This semantic domain will be called epistemic-inferential, or in short, epistential.<sup>2</sup> The paper begins with a critique of previous treatments of evidentiality in linguistics before making the case for an alternative cognitive account highlighting the interaction between evidentiality and epistemic modality. Finally, it presents the findings of a corpus-based study of Hungarian evidential markers of visual perception (Kugler 2013) to illustrate the model's functioning and the underlying process of grammaticalization.

*Keywords:* epistemic modality, evidentiality, inferentiality, subjectification, subjectivization

## 1 Evidentiality and inferentiality as linguistic constructs

### 1.1 Definitions of evidentiality

The category of evidentiality is generally applied to linguistic markers of the sources of speaker knowledge, i.e., types of evidence (cf. Aikhenvald 2003: 1, Bybee 1985: 184-185, de Haan 1999, Kiefer 2000: 328-331, Palmer 1986: 20-21, 51, 66ff., van der Auwera & Plungian 1998: 85). In addition, it may also receive a broader interpretation to include speaker commitment to the truth of a proposition (Palmer 1986: 20).<sup>3</sup>

The scientific term itself comes from Franz Boas (1911: 443, quoted by Jacobsen 1986: 3-4, see also Dendale & Tasmowski 2001). It derives from the English word *evidence*, which

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<sup>2</sup> The term *epistential* was originally created by Faller (2002: 87-90) to denote the intersection of epistemic and evidential domains. I depart from this usage by taking *epistemic* and *inferential*, rather than *epistemic* and *evidential*, to be the input for the blend.

<sup>3</sup> Other authors assign speaker commitment to the domain of epistemic modality (see e.g. Cornillie 2009).

immediately establishes a line of interpretation (reinforced by the theoretical context of early descriptions, and still drawing adherents among objectivists) that sees evidentiality as a system of verification (cf. Dendale & Tasmowski 2001). Under this view, evidentiality would reduce to factuality and matters of truth. However, anthropological observations suggest that, far from reflecting facts and truth independently of the conceptualizers, it is fundamentally shaped by experience and attributions of significance (Nuckolls 1993: 236).

## 1.2 A typology of evidential categories

Two main types of evidence are usually distinguished on the basis of highlighting and combining the deictic component and the factor of witnessing: direct evidence (+DIR),<sup>4</sup> whose source is the speaker's sensory experience (visual, auditory, or other), and indirect evidence (-DIR), in which "the source of the speaker's information is of [...] a secondary nature" (Willett 1988: 57). Indirect evidence can be either reported or inferential,<sup>5</sup> with the latter further divided into 'results' grounded in some experience or observation, and 'reasoning' based on a speculative mental construct (Palmer 1986: 84-85, 95, Willett 1988: 57, Kiefer 2000: 329). This classification is summarily presented in Table 1 (adapted from Willett 1988: 57).<sup>6</sup> Willett regards inference as indirect (-DIR) even when it relies on the speaker's sensory experience. In such cases, the speaker's direct evidence serves merely as a point of departure for reaching a conclusion, the result of inference being indirect as a consequence. I will return to this problem in section 1.2.1.

However, typologies can also separate the criteria of directness (based on the deictic component) and witnessing, where the contrast lies between first-hand (+1ST) and second-hand (-1ST) information. Following de Haan (2001: 197), I have therefore supplemented Willett's system by the features just mentioned.

Types of evidence (Willett 1988: 57)			Semantic features (de Haan 2001: 197)	
direct	attested	visual	(+DIR), (+1ST)	
		auditory		
		other sensory		
indirect	reported	hearsay	(-DIR), (-1ST)	
				second-hand
				third-hand
	folklore			
inferred	inferring	result	?(+DIR), (-1ST)	
		reasoning; mental construct	?	

*Table 1: Types of evidence and associated semantic features*

<sup>4</sup> Here, semantic decomposition is merely used for expository purposes as part of an overview of the specialized literature. Following Sinha (1999), I regard meaning as an act rather than a mental object to be decomposed or put together. In later sections, I will draw on the results of feature-based analysis, but only by reinterpreting features as dimensions or parameters of semantic domains, explored from a functional cognitive perspective.

<sup>5</sup> The subtypes of inferential evidence in Cornillie (2009: 50) are: circumstantial, generic and conjectured inference.

<sup>6</sup> The categories given in the table articulate the dimension of source-evidentiality. Both Nuyts (2001) and Cornillie (2009) discuss 'intersubjectivity', another dimension of evidentiality that "is about the shared status of the evidence" (Cornillie 2009: 45). The present paper uses the concept of intersubjectivity in a broader sense.

In de Haan's approach, inference based on experience is a direct second-hand type of evidence. It is (+DIR) because of the role of the speaker's perceptions within her deictic domain, but it is also (-1ST) since she is only inferring the occurrence of an event rather than witnessing it. The question marks are my additions, intended to reflect problems with feature assignments.

The above systems built on binary oppositions are problematic for a variety of reasons. In what follows, I will first point out intrinsic problems of the models (1.2.1-1.2.2.), then make some critical remarks that pave the way for an alternative interpretation of evidentiality (1.3., 1.4.).

1.2.1 The treatment of inferentiality leads to a conflict in the above classifications. This will be illustrated with a Hungarian example similar to the Tuyuca data presented by de Haan (2001: 194, 218). Suppose that the speaker makes the utterance in (1) on arriving home in the evening and finding morsels on her desk.

- (1) Valaki            *ehetett*                    az íróasztalomnál.  
 someone-NOM. eat-may-PAST-3SG. the desk-my-by  
 'Someone may have eaten by my desk.'

In (1), *-het* 'may' is an inferential marker connected to the speaker as a deictic centre; it is the speaker who infers that someone has eaten by her desk. Of the figures in the referential scene, the desk is located with respect to the speaker's deictic domain; grounding to the speech situation is effected by the definite article *az* and the first person possessive suffix *-om* attached to the head noun *íróasztal* 'desk'. The speaker has visual evidence of the desk and the morsels on it, hence, in de Haan's terms, this is a case of inference from direct experience (+DIR). However, the speaker of (1) did not witness the eating event (-1ST); rather, she only infers its probability from her visual experience and her general knowledge about eating.

According to de Haan (2001: 218), the classificatory dilemma is the following. In systems distinguishing between direct (+DIR) and indirect (-DIR) evidence, inference is similar to evidence types based on a direct experiential source, since its result subtype draws on direct evidence. On the other hand, models prioritizing the witnessing criterion have inference belong with quotative evidence (cf. 'reported', 'hearsay' in Table 1) since both are based on second-hand (-1ST) rather than first-hand experience. Indeed, the latter systems allow utterances with inferentials to have a quotative interpretation.

It should be noted, though, that the directness of inferentiality only applies to the overall experience (the location of the desk and the morsels being accessed from the speaker's perspective), and not to the target structure (cf. Langacker 2008: 83), viz. the eating event also involving the desk and the morsels as "participants". This is why, despite the directness of the speaker's experience, Willett's system cannot assign a (+DIR) feature to cases like (1). The suffix *-het* 'may' opens up the mental domain of potentiality for interpreting the target structure, that is, the event itself is interpreted as possible and not as an actual occurrence to be included in the deictic domain. The epistemic basis for accessing this possible event is provided by the speaker's experience and her knowledge about eating in general and the eating habits of her family in particular. The speaker is thus a reference point both for locating the morsels and the desk and for interpreting the inferential process pertaining to the eating event. In the latter case, the speaker's knowledge or belief serves as a reference point for establishing mental contact with the target structure (cf. Langacker 1991: 207, 2006: 22, 2008: 83, Pelyvás 1998, 2006, Tátrai 2011: 70-71, 197).

1.2.2 The classifications in Table 1 are best applied to languages in which (according to the linguists studying them) the evidential systems are based on binary oppositions. As de Haan remarks, “[b]y choosing which of the two features is basic, languages decide whether the deictic component or the witnessing component is the underlying factor that drives the evidential system” (de Haan 2001: 218). However, alternative binary systems also exist in which the main splits are not determined by either the deictic component or witnessing. For example, there is a model in which quotative evidence stands in opposition with all other types of evidence. Three- or fourfold classifications, for their part, generally dismiss basic oppositions, although each of them holds that at least one type of evidence has an experiential basis (Aikhenvald 2003: 3-6).

### ***1.3 Evidentiality as an anthropological and linguistic phenomenon***

In what follows, I will critically assess the approach presented in the previous section from a functional perspective informed by anthropological as well as linguistic considerations.

According to Givón (1982: 44), participants of a speech situation may evaluate the strength of evidence along several hierarchical scales:

- a) Personal/deictic hierarchy: speaker > hearer > third party
- b) Sensory/source hierarchy: vision > hearing > other senses > feeling
- c) Directness hierarchy: senses > inference
- d) Proximity hierarchy: near the scene > away from the scene

These scales correspond to the classifications shown in Table 1, and treat the reliability of evidence as *a priori* established by the nature of each subcategory. Arguably, however, the weight or reliability of evidence is subject to construal rather than being objectively given. In particular, reliability may be influenced by factors such as the type of event in the target conceptualization. For example, when the speaker infers that ‘somebody is singing’, visual information is not more pertinent than auditory (their combination being the strongest). Secondly, knowledge of the informant may crucially feed into decisions, as e.g. quotative evidence from an expert may be more relevant than first-hand experience reported by dabblers, and so on (for details on construal, see Section 2).

Willett’s system reflects a measure of scientific objectivism whereby a fact or event existing independently of discourse participants needs to be verified by the speaker. However, as Nuckolls (1993: 253) points out, the dichotomy between fact and value (characteristic of scientific thought) is misleading in the study of evidentiality. Her example is from Pastaza Quechua, whose speakers give equal epistemic priority to their experience and thinking (Nuckolls 1993: 253). The *-mi* evidential suffix, which is used to mark evidence from direct experience, is also employed in cases where others may easily challenge the views expressed by the speaker (e.g. when expectations or hopes are at stake). Nuckolls (1993: 236, 253) concludes that this usage is motivated by strong speaker commitment to the significance of the message. In other words, the use of evidentials does not involve a verificational process; rather, it simply highlights the significance attached by speakers to their strongly held views, whether or not these are supported by direct experience.

More generally, even when speakers supply direct evidence (which is widely considered to have a verificational dimension), they do not simply communicate objective truths. Objectivist

distinctions between facts and values, and between the processes of verification and evaluation are an inadequate basis for describing evidentiality.<sup>7</sup>

#### 1.4 *The issue of inferentiality*

The domain of evidentiality cannot be treated as a unitary whole if inference is also taken to belong here. This is because the latter process does not concern the specification of a source or type of evidence; rather, it has a metaevidential character (Horváth 2013: 49). This is illustrated by the contrast between (2) and (3)–(4) below.<sup>8</sup>

- (2) De *láttam*, hogy néztél rá!!  
 ‘But *I saw* how you looked at him/her!’
- (3) A közkedvelt szórakozóhelyre ezúttal egy *láthatóan* erősen ittas férfi akart betérni.  
 ‘This time, an *obviously* heavily drunk man wanted to enter the bar/party hall.’
- (4) [Pál apostol] *talán* rövidlátó lehetett. (BNYGY)  
 ‘[Paul the Apostle] may *perhaps* have been short-sighted.’

In (2), the verb form *láttam* ‘I saw’ profiles the speaker’s visual experience in the past, whose significance she wishes to highlight. This type of evidence is characterized by directness and witnessing.

In (3), *láthatóan* ‘visibly, obviously’ again evokes the speaker’s experience. Inference on drunkenness is direct from a deictic point of view; more specifically, the visual source takes precedence, and this is a case of first-hand evidence regarding the criterion of witnessing. Apart from the visual source, observation of the drunken person’s behaviour including his speech may play a role in the evaluation of experience. Of these factors, the expression *láthatóan* profiles visual evidence; its primary meaning can be given as ‘based on evidence from a visual source’. The mental distance between experience and result of evaluation is limited, hence this kind of inference is fairly reliable.

The example in (4) illustrates the functioning of epistemic modality. The verb form *lehetett* ‘may have been’ clearly signals that the speaker is making an assumption on a situation to which she does not have direct access; her view can be neither cross-checked or verified. The basis of

<sup>7</sup> Here I rely mostly on Nuckoll’s (1993) arguments. Another line of attack would be to challenge the objectivist dichotomy between *realis* and *irrealis*, as languages vary greatly as to whether their speakers would represent a given event as real or unreal (cf. van Gijn & Gipper 2009). Moreover, the conceptual basis of *irrealis* and *realis* is better viewed as a scale with clearly counter-factual events at one extreme, factual ones at the other, and possible events across the whole spectrum. Languages differ in terms of where certain events are situated on the scale (cf. van Gijn & Gipper 2009: 155, 173, see also Bybee, Perkins & Pagliuca 1994: 236-40), and where cut-off points lie for purposes of representation. For example, a possible event may either be represented as *realis* or *irrealis*, depending on the language, and habitual actions can be expressed as *irrealis* despite their factuality, as a result of their lack of grounding in time.

<sup>8</sup> Unless indicated otherwise, the data in this paper are from the Hungarian National Corpus (HNC) of the Research Institute for Linguistics of the Hungarian Academy of Sciences (<http://corpus.nytud.hu/mnsz/>). Data from other corpora are classified by abbreviations: BNYGY stands for the Beszélt Nyelvi Gyűjtemény (Collection of Spoken Language) of the Department of Hungarian Language, Faculty of Humanities, Eötvös Loránd University (not available online), and BEA for the Beszélt Nyelvi Adatbázis (Spoken Language Database) described at <http://www.nytud.hu/dbases/bea/index.html>.

her assumption (literary data) can only be retrieved from the discourse context. Hence, in construing the meaning of *talán* ‘perhaps’, the source of inference remains in the background; the modal adverb profiles the speaker’s assumption-making and level of commitment (the process of subjectification<sup>9</sup>) rather than its inferential basis (Langacker 2008: 66ff.).

As the examples demonstrate, in cases of inferentiality of the result type (cf. (3)), it is not the type or source of evidence that moves into spotlight. Rather, what is being signalled is that the process of inference is based on **some** kind of evidence. In (4), which illustrates the functioning of epistemic modality and result, the basis of inference can at best be recovered from the situational or discourse context. Finally, specifying the type of evidence may also be impossible and irrelevant, as in (5):

- (5) Az utókor – ha lesz – *valószínűleg* nagyobb becsben fogja tartani a családi amatőr képeket, mint a World Press díjnyertes fotóit.  
 ‘Later generations – if there are any – will *probably* cherish the family’s amateurish photos more than the award-winning pictures of the World Press exhibition.’

The above example illustrates a mental construct of the *if... then...* type. Although reasons can be adduced to support the speaker’s assumption, there are no grounds for verifying it or clearly establishing its basis. This is why Givón (1982) dismisses the idea of mental constructs having evidential force. However, it is also unrealistic to suppose that utterances like (5) should have no inferential basis whatsoever, i.e. that they should fall outside the domain of inferentiality.

Horváth (2013) distinguishes inferentiality from (types of) marking evidence by highlighting the metaevidential character of the former:

[...] inferential evidentiality is sharply different from the other two types. Markers of direct or quotative evidence supply the evidence itself by specifying the source of information, i.e. whether the speaker was an eye- or ear-witness to the state of affairs in question or only heard about it from someone else. By contrast, in cases of inferential evidentiality, the focus is not on the speaker specifying her source of information of a particular type. Instead, she uses some source which may be left implicit (knowledge, observation, etc.) to infer that a given state of affairs holds, or is more or less likely to hold. Hence, what we have here is in fact a metaevidential procedure; the speaker necessarily evaluates the sources she has access to, but her interest is not in specifying their nature. (Horváth 2013: 49)

The evidential force of inference varies with factors such as the type of indexical relationship, and its strength and degree of conventionality in a given community (e.g. DRUNKENNESS → LACK OF COORDINATION: strong and natural connection, highly routinized recognition; SEVERAL PEOPLE IN THE SAME PLACE → ???: context-bound inference, ambiguous interpretation). Within the category of inference, many languages treat results and mental constructs analogously. And when in a given language, there is no grammaticized marker for indicating result-type inferencing (as is the case in Hungarian), the reliability of inference can only be assessed by contextual clues or other corroborating evidence. This makes it more difficult for the discourse partner to decide whether to subscribe to the view expressed in the utterance (cf. Douven 2010: 37).

<sup>9</sup> *Subjectification* denotes the process of making linguistically explicit that the event or assumption profiled by the clause is being accessed by the speaker’s mind (cf. Langacker 2006: 18, Pelyvás 2006). When referring to the diachronic process whereby an expression’s meaning becomes more and more bound up with the conceptualizers’ mental processes and discourse-organizing activity, I instead use the term *subjectivization* (cf. Traugott 1989, 1995). For the relationship between the two terms, see Athanasiadou, Canakis & Cornillie (2006: 2-6) and Traugott (1989: 35).

To summarize, inferentiality can be distinguished from evidentiality on the grounds that it has a metaevidential nature. However, it cannot be separated from epistemic modality, since (as we have seen in the examples above), both are characterized by processes of inference. Furthermore, they both involve subjectification (cf. footnote 9), whereby the speaker (her experience, knowledge, etc.) is interpreted as a reference point for accessing a target conceptualization (cf. Langacker 2006, Pelyvás 2006). Significantly, both inferentiality and epistemic modality feature the speaker as the person inferring the occurrence of an event, hence it is her knowledge and beliefs which underlie the inferential process. I therefore conclude that epistemic modality and inferentiality define one and the same semantic domain.

In the literature, various solutions have been proposed for describing the relationship between evidentiality and modality. Specifically, the following three analyses have emerged (cf. Dendale & Tasmowski 2001: 341-342, Kugler 2008: 283-284):

- a) disjunction: the two categories are completely separate, classification is an either-or matter<sup>10</sup> (Willett 1988, Kiefer 2000, Nuyts 2001, de Haan 1999, 2001);
- b) inclusion (one category is included in the other):
  - evidentiality as a subsystem of epistemic modality (Palmer 1986, see also Givón 1982, Biber et al. 1999: 764, 854),
  - epistemic possibility as a subsystem of evidentiality (Chafe 1986, Biber & Finegan 1989);
- c) epistemic modality (epistemic necessity) and inferential evidentiality are overlapping categories (van der Auwera & Plungian 1998, Faller 2002, Kiefer 2005).

My proposal is close to the third option but cannot be subsumed under it. In what follows, I will discuss this account in detail.

## 2 The dynamic construal of categories and meanings

In the previous section, I took steps towards a functional interpretation of evidential and epistemic-inferential (epistential) categories. I regarded evidentiality and inferentiality as separable, whereas inferentiality and epistemic modality were seen as inextricably linked. Let us note, however, that from a functional perspective, all three categories are manifestations of natural epistemology, hence none of them should be treated as completely independent (cf. Givón 1982). In the remainder of this paper, the categories mentioned will be described in terms of dynamically and intersubjectively construed cognitive models (Langacker 2008: 30ff.).<sup>11</sup> The criteria taken over from the literature will be integrated as dimensions or parameters of these models.

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<sup>10</sup> This of course does not preclude the possibility that certain markers, e.g. modal adverbs may belong to both categories. However, linguists committed to disjunction view this as an idiosyncratic phenomenon rather than as a consequence of the nature of these categories (cf. Nuyts 2001). Approaches that keep the two categories distinct generally criticize the c) option, dismissing it as a case of “categorical confusion”. As Cornillie (2009: 57) remarks, “Equating the evaluation of the reliability of the evidence with the epistemic evaluation of likelihood leads to the current confusion between the two categories”. In Cornillie’s view, “rather than representing a concrete overlap domain, epistemic and evidential expressions may more accurately be described as having similar subdimensions [reliability of knowledge (evidentiality) and speaker commitment (epistemic modality), respectively] that meet at some point” (Cornillie 2009: 51). Thus, this approach denies full overlap of the categories but accepts that they are in contact with one another.

<sup>11</sup> My point of departure is Lakoff’s notion of IDEALIZED COGNITIVE MODELS (“[...] we organize our knowledge by means of structures called IDEALIZED COGNITIVE MODELS, or ICM’s, and [...] category structures and prototype effects are by-products of that organization”, Lakoff 1987: 68). I view models as dynamically

As schemas, models are organized on a language and culture specific basis, each having a unique history as well. They evolve and are brought into play during the social interaction of interlocutors. The language and culture-bound nature of evidential models is supported by the fact that languages and cultures may afford prominence to alternate dimensions, with differences in the assessment of reliability of evidential sources. Examples include variation in attributions of significance to such sources as information from dreams and quotative evidence.<sup>12</sup>

Furthermore, languages may vary strongly in terms of which categories are overtly treated as belonging together or being in contact. For example, languages in which no unique markers are associated with the subtypes of inferentiality (result and mental construct) reflect a stronger sense of an epistemic-inferential continuum even if epistemic modality (the attribution of probability) has its own special markers. Less obvious is the close relationship between epistemic and inferential categories in languages which assign identical markers to inferentiality and quotative evidence, these standing in opposition with all other types of evidence (cf. Aikhenvald 2003). However, the metaevidential (Horváth 2009) or meta-informational character of inferentiality and epistemic modality still establishes contact between these domains.

The historical dimension needs to be incorporated, first, because the system of marking devices emerges from a grammaticalization process (cf. Traugott 1989, 1995), and second, because the structure of the model itself is a social and historical construct. Shared knowledge evolves and is passed on via the co-ordinated linguistic activity of interlocutors (cf. Tolcsvai Nagy 1998: 24-27, Tátrai 2011: 27ff.). Individual experiences may become part of shared knowledge over time, and certain contents or types of knowledge may also drop out of this heritage. In this context, shared knowledge (or the common ground) is not viewed as a mental object existing in social space; rather, it is linguistic conceptualization drawing on conventional patterns of linguistic activity. Aspects of information clearly interpretable as parts of shared knowledge are often left unmarked and implicit in a discourse, whereas those which are harder to access and/or accept tend to receive overt coding. Both references to the common ground and the signposting of individual assessments are highly relevant for the construal of knowledge and meaning by the discourse partners.

## **2.1 The model of evidentiality**

Evidentiality is defined as the marking of the source and type of information. Its primary role is to establish the significance of an experience or information.

Parameters of the model of evidentiality include:

- a) direct speaker experience (subjectification) vs. information gained from someone else (perspectivization)
- b) type of experience (visual, auditory, or other), in close relationship with the type of event in the target structure (visible, audible, or otherwise perceived); presence or absence of an identifiable informant (when there is no such informant, the source may be common knowledge or hearsay); the type of informant when there is one (individual or group; characteristics), how she is connected to the event (participant, eye- or ear-witness, mediator)

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evolving intersubjective constructs, closely corresponding to Langacker's notion of cognitive domains (Langacker 1988: 386, 2008: 12). The changes have been inspired by Croft's (1994) analysis of the cognitive model of speech acts.

<sup>12</sup> See e.g. the role of reference to an authority in the European rhetorical tradition.



- c) degree of speaker commitment<sup>13</sup>
- d) reliability of the source
- e) knowledge bearing on the evidential marker being employed (activation patterns in the network of markers, collocations, association with genres or registers, etc.).

The model's functioning is illustrated with the following example.

- (6) [...] a kocsik *szemmel láthatóan* jobban csúszkáltak mint tavaly, ami nem jelenti azt, hogy akkor nem sodródtak a kanyarokban, de *láthatóan* bizonytalanabbak a fiúk.  
 '[...] *obviously* (lit. *visibly*) to the eye, the cars have been sliding more than last year, which does not mean that they were not drifting in the curves then but the boys are *clearly* (lit. *visibly*) more unsteady now.

With regard to parameters a) and b), the speaker has direct visual experience of the sliding of the cars. The event can be observed as it is unfolding, cf. the expression *szemmel láthatóan* 'obviously to the eye'. Although the speaker is not at the premises, she is following the race on television, so the sliding can be easily ascertained (cf. dimension d)). As for e), the tautological nature of the expression reaffirms the significance of visual experience. The second occurrence of *láthatóan* 'visibly' is clearly different, however. In this case, the speaker is comparing the present experience with her memories of last year's event, and based on available visual evidence, infers that the drivers are more unsteady this time (which cannot be directly observed). Hence, *láthatóan* does not profile direct visual experience here; rather, it highlights an inferential process resulting from that experience (cf. 2.2). Since such markers are typically associated with reliable, direct (typically visual) evidence (cf. e)), they are capable of signalling the speaker's high level of commitment to the validity of her observations and inference (cf. dimension c)).

## 2.2 *Epistemic-inferential (epistential) modality as a cognitive model*

A speaker's assessment of the probability of an event/situation cannot be dissociated from processes of inference, which calls for an integrated account of epistemic modality and inferentiality. As mental constructs demonstrate, inferentiality does not necessarily require experiential (or any other type of) evidence as a point of departure. Inferences drawn from experience are not logical sequences independent from speaker knowledge and the discourse world; rather, they are everyday routines which can be influenced by covert factors as well (cf. Kiefer 2005: 48). It follows from this that no principled distinction can be made between the inferential processes of inferentiality and those of epistemic modality.

Speaker responsibility and commitment are associated both with evidentiality and the epistential category (cf. Cornillie 2009: 51). There is an important difference however. In the case of evidentiality, speaker commitment (or lack thereof) primarily concerns the reliability of the source, often with an emphasis on the significance of an experience. By contrast, epistemic modality involves speaker commitment to the validity of an inference, with associated degrees of probability.

The cognitive model of epistemic-inferential modality can be rendered as follows: based on her existing knowledge (processed experience, available information), the speaker infers the occurrence of an event/situation, evaluating its degree of probability.

<sup>13</sup> The expressions *degree*, *extent*, etc. used in the models always refer to a continuum of values rather than a series of discrete settings to be defined *a priori*.

Parameters of the epistential model include:

- a) subjectification: the speaker serves as a reference point for accessing the result of inference, viz. the event/situation being profiled as probable to a certain extent
- b) the basis for inferring the occurrence of an event/situation, and for the attribution of probability: observation of experience (visual, auditory, etc.), second-hand information, common or individual knowledge, beliefs, etc.
- c) accessibility/recoverability of the basis of inference and the attribution of probability (whether or not it is made explicit in the discourse)
- d) when the basis of inference is accessible: how strong (conventional/routinized) the relationship is between the basis and the result of inference (a scale from contiguity to non-obvious mental associations)
- e) the degree of reliability of the basis of inference (as evaluated intersubjectively by the discourse participants)
- f) the mental distance between the speaker's reality (the ground) and the possible world of the event/situation being profiled
- h) in close correlation with mental distance: the degree of predictability of the event/situation in the target conceptualization; the quantity and nature of contextual factors influencing the inferential process; the strength of inference
- h) degree of speaker responsibility and commitment
- i) knowledge pertaining to the epistential marker being employed.

In the example in (1), when the speaker infers (from seeing the morsels) that someone has eaten by her desk, she serves as a reference point for both the observation and the result of inference (cf. a)). As regards the parameter in b), her grounds for making the inference include visual experience and her general knowledge about eating; however, this is not made explicit in the utterance (cf. c)). The relationship between the basis and the result of inference is one of contiguity (cf. d)), the evidence is reliable (cf. e)) and the mental distance is small (cf. f)). Hence, high levels of reliability (cf. g)) and speaker commitment (cf. h)) can be established. Finally, as far as the parameter i) is concerned, the verbal suffix *-het* 'may' is a generic marker of potentiality in Hungarian; therefore, only the co-text (and the constructional schema, including aspects of word order) and the situation help determine the source of the attribution of possibility. In the case at hand, this source is the speaker's inference.

### 3 Results of a corpus-based analysis of Hungarian markers of visual evidence

In this section, I will present the results of a corpus-based study of six Hungarian lexicalized evidential markers (*láthatóan*, *láthatólag* 'visibly'/'conspicuously', *szemmel láthatóan*, *szemmel láthatólag*, *szemlátomást* 'obviously to the eye', *látszólag* 'apparently'). The selected lexemes primarily serve to highlight the speaker's visual experience.

For the analysis, I used a random sample of 100 occurrences for each lexeme taken from the Hungarian National Corpus (HNC), and also explored patterns of use in BNYGY (a corpus of 220.687 word tokens) and BEA (an audio corpus of spontaneous conversations with a running time of 336 minutes). Apart from two exceptions, *látszólag* (occurring three times in BNYGY) and *láthatóan* (with one token in BEA), I found no spoken language data in these corpora for the lexemes under investigation.

### 3.1 *Frequency and the motivation of data*

In descending order of frequency, the lexemes can be listed as follows (token per million words, based only on data from the HNC): *látszólag* (20,26), *láthatóan* (19,74), *szemmel láthatóan* (4,43), *láthatólag* (3,09), *szemlátomást* (2,55), *szemmel láthatólag* (0,69). The longer forms are less frequent than the short ones; this generalization is also supported by my previous study on modal adverbs (habilitation thesis), with examples including *kétségtelenül* ‘without doubt’ and *kétségbevonhatatlanul* ‘unquestionably’, *nyilván* and *nyilvánvalóan* ‘obviously’, *biztosan* and *bizonyosan* ‘certainly’, etc. A further factor is that longer expressions tend to be tautological, profiling an explicit connection between the concepts EYE and VISION, i.e. affording central status to the means of seeing in the overall semantic structure (Tolcsvai Nagy 2010: 32). As a result, the meaning of these lexemes is less prone to undergoing abstraction, their use being restricted for the most part to the expression of concrete visual perception.

Among compounds and phrases, the greater conceptual unity of *szemlátomást* iconically motivates the greater proximity of its components, and may account for the higher frequency compared to the expression *szemmel láthatólag*.

Further factors behind frequency differences include the degree of productivity of the inflectional suffix, and relatedly, the degree of analysability of the pattern. Expressions containing the productive *-an* ‘-ly’ suffix are typically more frequent than their synonyms with *-lag*. This discrepancy is widely attested among modal adverbs, e.g. with *feltehetően* vs. *feltehetőleg* and *vélhetően* vs. *vélhetőleg* (all meaning ‘presumably’), but not without exceptions: *előreláthatólag* ‘foreseeably’ is twice as frequent<sup>14</sup> in expressions of speaker opinion than *előreláthatóan*. This may be motivated by the fact that *-lag* is often employed as a marker of subjectification, and there may be a functional split between *-an* (highlighting “external” features of the perceived event) and *-lag* (which is more intimately bound up with mental processes internal to the conceptualizer). For example, in the examples below, the meaning of *barátian* ‘in a friendly way’ is more objectively construed than that of *barátilag* ‘as a friend’, ‘as a friendly gesture’.

- (7) [...] egyik társa *barátian* felajánlotta, átadná az egyik megbetegedett vendég meghívóját.  
 ‘[...] one of his/her companions offered *in a friendly way* that he/she would pass on the invitation card of a guest who has fallen ill’
- (8) Ezeket csak *barátilag* írom.  
 ‘I am only writing these (to you) *as a friend*’.
- (9) E kritizálók szemében a gesztus a pápától, még ha *barátilag* érthető volt is, megbántotta a francia laicitás híveit.  
 ‘In the eyes of these critics, this move from the Pope, while interpretable as a friendly gesture, offended the supporters of the French lay movement.’

A similar semantic difference can be found in *láthatóan* vs. *láthatólag*, and their derivatives *szemmel láthatóan* vs. *szemmel láthatólag*.

<sup>14</sup> It is still rare, with a frequency of 6.72 tokens per million words (HNC), and no occurrence at all in the spoken language corpora.

In the case of *szemlátomást*, the second component *látomást* has an even higher degree of unit status than *láthatólag* and *láthatóan*; similarly, *látszólag* ‘apparently, seemingly’ shows more internal cohesion than *látszóan* ‘visibly’, which is not analysed here.<sup>15</sup> Presumably, the frequency of *szemlátomást* and *látszólag* results from their unit status and short length rather than the productivity of the patterns they instantiate.

### 3.2 *The network of functions motivated by the basic meaning*

The verb *lát* ‘see’ and its derivatives profile either visual perception or the evaluation of visual experience, or else the processing of other kinds of sensory experience. And at an even more abstract level, they may also evoke knowledge and understanding. In such cases, the conceptual domain of KNOWLEDGE/UNDERSTANDING gets activated by metaphorical extension from the conceptual domain of VISION (SEEING).

In the expressions *láthatóan*, *láthatólag* ‘visibly, apparently’, *szemmel láthatóan*, *szemmel láthatólag* ‘obviously to the eye’, the *-hat* ‘may’ suffix opens up the mental space of POSSIBILITY for the concrete and metaphorical meanings related to VISION. This explains the meaning of the composite expressions which can be paraphrased as ‘visibly by the speaker (subjectification) and by others (intersubjectivity), accessibly (by vision or higher-order mental processes), verifiably, to be known for certain, etc.’

- (10) A kiscica olyan sovány volt, hogy nem is volt árnyéka, *szemlátomást* éhes volt, és nagyon félt.  
 ‘The kitten was so thin it had no shadow, *obviously to the eye* it was hungry and very much afraid.’

In (10), *szemlátomást* highlights the speaker’s experience. The inference of hunger is direct in terms of the deictic criterion, the evaluated evidence being primarily visual, and first-hand as far as the parameter of witnessing is concerned. In addition to the visual source, careful observation of the sound, movement and general behaviour of the kitten may have contributed to the evaluation of experience. In the utterance, the expression’s primary meaning ‘based on visual experience’ is being activated, as motivated by the component structures. The mental distance between perception and evaluation of experience is small, hence the inference is fairly reliable.

Cases of extension typically profile perception/experiencing while keeping the source of sensory information unspecified (allowing for non-visual sources). This is illustrated well by example (11), whose processing is not hindered by the fact that the utterance profiles the lack of auditory stimuli, or at a more abstract level, the lack of any form of overt political action.

- (11) A gondos előkészítés megtette hatását: a kormányzó német kereszténydemokraták belső ellenzéke *szemlátomást elhallgatott* és így nem veszélyezteti az egységdemonstrációt.  
 ‘Careful planning did the trick: the internal opposition of the ruling German Christian Democrats has *obviously* (lit. obviously to the eye) *fallen silent*, and so poses no threat to the demonstration of unity.’

<sup>15</sup> This expression has only 7 occurrences in the HNC, and it is completely absent from the spoken language corpora of the present study.

In addition to profiling visual or other sensory experience, the expressions can also direct attention to experience-based inferences (inferentiality of the result type), which amounts to entering the epistential domain (cf. (12), (13)).

- (12) [...] Clinton *szemlátomást* hosszú küzdelemre igyekezett felkészíteni az amerikaiakat a terrorizmus elleni harcban: [...]  
 ‘*Obviously to the eye*, Clinton attempted to prepare Americans for a long fight in the war against terrorism.’
- (13) Az összenövés *szemmel láthatóan* elkerülhetetlen.  
 ‘*Obviously to the eye*, their fusion cannot be avoided.’

All lexicalized expressions I have investigated show evidence of epistential use, suggesting that their grammaticalization leads to ever higher degrees of subjectivization. The subjectivization path from evidentiality to epistential modality is made possible by the contact of the domains involved. Furthermore, the process may be influenced by the fact epistential modality has more numerous lexicalized markers in Hungarian than evidentiality.

- (14) Bár a zavarkeltés *szemlátomást* [Személynév] egyik célja *lehet*, mégis korábbi kiállításában az egyes sorozatok jóval összetartóbbnak tűntek.  
 ‘Although *obviously to the eye*, causing confusion may be one of the goals of [person’s name], the constellations of his previous exhibitions seemed to be more convergent.’
- (15) A gyorsuló infláció közepette ez az álláspont *szemlátomást* nem tartható.  
 ‘In the midst of accelerating inflation, this stance is no longer tenable, *obviously to the eye*.’

These two excerpts are clear examples of epistential modality. In (14), *szemlátomást* may indicate speaker observations, but the verb form *lehet* ‘may be’ makes it clear that based on unspecified experience, the speaker is voicing her opinion on the goals of the artist which she has no direct access to. In other words, in construing the meaning of *szemlátomást*, reference to concrete experience stays in the background (even though the inference is clearly based on certain signs), and what is being profiled is the speaker’s commitment to her opinion.

In (15), the object of negotiation is the (un)tenability of a stance rather than any perceivable phenomenon. The speaker is indicating the circumstance (accelerating inflation) which in her view causes the partner’s standpoint to lose credit; however, this is not a directly experienced sign on which an inference of the result type could be based. Similarly to the previous example, *szemlátomást* profiles the speaker’s personal views and commitments rather than the basis of her inference.

In certain contexts, the expressions under study may highlight the importance of some information regardless of its type or source (where the latter may or may not be direct experience), cf. (16).

- (16) Az eredmény *szemmel láthatólag* őt igazolta, lett egy marginális pártocskája, igaz, hogy az a megmaradt néhány fő mostmár tényleg úgy ugrál ahogy ő füttyöl.  
 ‘*Obviously to the eye*, the result has proved his point, he now has a small and marginal party but at least the few people to have remained are really following his lead.’

The relative frequency of functions is presented in Table 2. The percentages do not add up to 100% because the functions often overlap, and some data can be assigned to multiple groups at the same time. The results suggest that highlighting visual perception and the evaluation of complex experience are especially likely to be bound up with other functions.

	highlighting visual perception	evaluation of visual perception	evaluation of other kinds of perception or information	inference, opinion
<i>láthatóan</i>	8	22	29	68
<i>láthatólag</i>	1	20	24	83
<i>szemmel láthatólag</i>	2	27	32	65
<i>szemlátomást</i>	5	36	26	54
<i>szemmel láthatóan</i>	8	44	53	37
<i>látszólag</i>	14		82 <sup>16</sup>	4

Table 2: *The relative frequency of functions*

The functions of *látszólag* ‘apparently, seemingly’ differ greatly from those of the other five expressions. Made up of the stem *látszó* ‘visible, perceivable’ and the inflectional suffix *-lag* ‘-ly’, the lexicalized expression means ‘the way it seems; based on visual experience; apparently/seemingly’. In the polysemous network, the meaning mentioned last has come to be central as a result of grammaticalization. Through the meaning ‘seemingly; based on unreliable perception or inference’, the expression is primarily interpreted as a counterfactual marker of deceptive experience (17) or purposeful deception (18).

(17) Így a *látszólag* továbbra is ötajtós kocsit négyajtóssá alakult.

‘This way the *seemingly* still five-door car has become one with four doors.’

(18) A tulajdonos *látszólag* belement az üzletbe, majd a látogatók távozása után értesítette a rendőrséget.

‘The owner *seemingly* agreed on the deal, then after the leaving of the visitors he informed the police.’

In a large number of cases, the six expressions reviewed do not mean ‘in a visible manner or state’; the suffixed forms have lexicalized into fixed units and undergone grammaticalization. The suffixes are not freely interchangeable; cognitive processes may be denoted by the same stem fused with alternate suffixes (see also *feltehetően, feltehetőleg* ‘presumably’). There is also clear evidence of condensation, as the original dependents (e.g. *valaminek látható* ‘capable of being regarded as something’ or *valahogyan valaki által látható* ‘visibly in some way by somebody’; *ép szemmel jól láthatóan* ‘capably of being seen well with a good eye’) generally missing from the collocation frame of the lexicalized expressions. Exceptions

<sup>16</sup> As a result of the different semantic structure of this expression, its functions call for a different classification compared to the other five expressions. The figure of 82% reported here subdivides into three types, viz. evaluation of deceptive experience (7%), superficial or false evaluation of complex information (60%), and indication of purposeful deception (15%).

include *jól láthatóan* ‘in a highly visible way’ (8 occurrences), *a példából láthatóan* ‘visibly from the example’ (1 token), *szabad szemmel láthatóan* ‘visibly by a free eye’, *laikus szemmel láthatóan* ‘visibly by a layman’s eye’ (1 token each). Multiword phrases can typically not be interrupted by any item, although *szemmel láthatóan* ‘visibly by the eye, obviously to the eye’ does show up a few exceptions (with *alig* ‘hardly’, *is* ‘also’ or *nem* ‘not’ intervening), all pertaining to visual perception.

In her study of the grammaticalization of *apparently* ‘obviously; seemingly’ and *evidently* ‘obviously; capably of being proved’,<sup>17</sup> Traugott (1989: 46-47) has discovered a similar process of subjectivization.

As shown by the analysis of (2)–(4), evidentiality (2) and epistential-inferential processes (3)–(4) can be separated theoretically. However, the development of Hungarian evidential markers lends strong support to the claim that the boundary can be crossed, with grammaticalization taking the direction from evidentiality to epistential modality.

#### 4 Summary

In this paper, I have proposed a functional cognitive reassessment of the category of inferentiality in its relation to evidentiality and epistemic modality. In contrast to previous accounts focusing on classification and often taking an objectivist stance, my approach explores the dynamic intersubjective construal of inferential and epistemic meaning, grounded in the discourse partners’ knowledge/experience of the world. The analysis has crucially relied on cognitive models which correspond closely to everyday language use, and are thus highly adaptive in empirical investigations.

In the second part of the paper, I discuss the results of a corpus-based study of subjectification in six lexicalized evidential markers of visual experience. It can be observed that none of the six expressions profiles a visual source in its primary function. In the case of *szemmel láthatóan* and *szemlátomást* ‘obviously (to the eye)’, the central function is to highlight that the speaker (as a reference point) represents the target structure as a situation being experienced and processed by herself. Observation is not limited to visual perception; rather, it may involve the evaluation of a complex multi-modal experience. In the case of *láthatóan*, *láthatólag*, and *szemmel láthatólag*, the prototypical function is the marking of inference and speaker opinion (epistential modality), with more than half of the occurrences *szemlátomást* also belonging here. By employing *látszólag* ‘apparently, seemingly’, the speaker generally represents the situation profiled by the clause as deceptive experience or the result of false inference. Of the six expressions under study, this latter is the least associated with the voicing of speaker opinion, being firmly grounded in experience. However, its special feature is that it serves as a counterfactual marker profiling the unreliability of that experience.

The development of Hungarian evidentials suggests that over the course of grammaticalization, the category boundary between evidentiality and epistemic-inferential modality can be crossed, with historical change taking the direction from evidentiality to

<sup>17</sup> Traugott (1989) assigns evidential markers into the epistemic domain; however, for her, the precise relationship between the two categories is not a pressing concern. Rather, she focuses on the fact that there is functional contact between the categories, with “epistemics and evidentials shar[ing] a great number of similarities in their semantic development” (Traugott 1989: 33).

epistential modality. This development also involves ever higher degrees of subjectivization. Besides the interaction of semantic domains, a possible language-particular factor influencing the process is that epistential modality has a much higher number of lexicalized markers in Hungarian than evidentiality. In fact, Hungarian evidential marking is optional, and has no well-established systemic organization.

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