

The morphological and semantic classification of 'evidentials' and modal verbs in German: the perfect(ive) catalyst.

Nach einem rezenten Spruch des *Hoge Gerechtshof* muß jede ndl. Haftpflichtversicherung dem Schläger, der einem andern mit seiner beringten Faust ein Auge ausgeschlagen hat, die vom Verletzten eingeklagten Kosten zur Gänze decken. (10. Okt. 1999)

Die Bürgermeister von 20 Gemeinden fordern vom ndl. Innenminister die offizielle Lizenz zum lokalen Hanfanbau, um die offiziellen Drogenkaffeehäuser in ihren Gemeinden nicht durch kriminelle Lieferanten mit Haschisch versorgen lassen zu müssen. (11.Okt.1999).

"Also wenn ich darf, wenn ich soll, aber nie kann, wenn ich will,
dann mag ich auch nicht, wenn ich muß.
Wenn ich aber darf, wenn ich will,
dann mag ich auch, wenn ich soll, und dann kann ich auch, wenn ich muß."
(*Eulenspiegel*, Robert Mensau)

Abstract: This paper draws a link between the typological phenomenon of the paradigmatically supported evidentiality evoked by perfect and/or perfectivity and the equally epistemic system of modal verbs in German. The assumption is that, if perfect(ivity) is at the bottom of evidentiality in a wide number of unrelated languages, then it will not be an arbitrary fact that systematic epistemic readings occur also for the modal verbs in German, which were preterite presents originally. It will be demonstrated, for one, how exactly modal verbs in Modern German still betray sensitivity to perfect and perfective contexts, and, second, how perfect(ivity) is prone to evincing epistemic meaning. Although the expectation cannot be satisfied due to a lack of respective data from the older stages of German, a research path is sketched narrowing down the linguistic questions to be asked and dating results to be reached.

1. Introduction

1.1. Terminological and conceptual range

Evidentiality and related categories and terms have been the subject of extensive research in the past two decades (see, for example, Chafe&Nichols 1986; Conrad&Lukas 1995; Guenchéva 1996; Sumbatova 1999). According to DeLancey (1997:33), "[...] the grammatical marking of evidentiality [has] long been regarded as an exotic phenomenon found only in a few obscure languages [but] has in recent years come to be recognized as a widespread and significant typological parameter." Moreover, there is agreement, although not contested by other linguists, that the evidential mode is essentially on a par with other epistemic expressions (Chafe&Nichols 1986). The latter position is the immediate cause for the present investigation, which makes the attempt to relate such evidentials both of form and specific content to modal verbs in German. There is, first, a clear semantic overlap between evidentials and epistemic readings of Germanic (and German) modal verbs. This alone should suffice for drawing the parallel and investigate the reasons for this similarity and find a possible deeper relation between the two forms of predication. Furthermore, evidentials across languages are, more often than not, triggered by perfects and its specific discourse-related semantics, and since, sec-

ond, the original set of modal verbs in Germanic are preterite presents by origin still betraying this root by their morphological form, the attempt will be made to accommodate this diachronic origin of West Germanic modal verbs in the general typological setting of the perfect root of evidentials and trace its process of grammaticization.

There is a wide range of terms to approximately cover the same phenomenon. The Slavic, Turcologist and Uralist grammarians' traditions speaks about the *auditive*, the *narrative*, or the *absentive* (Honti 1997: 162) or else also *Nichtaugenzeugenschaftsmodus* (Jaszo 1976: 355; Honti 1997: 174). In the English typological literature, *evidential* is used next to *inferential* or *indirect* (Comrie 1976). For all I know, the Indo-European grammatical tradition does not use *evidential* at all, but, rather, *epistemic* or *subjective* (versus *objective*), compare the equivocative Russian *vremya neočevidnogo deystvija*. The term *mirative*¹ recently reintroduced by DeLancey's (1997) appears to be a subtype of the more general *evidential* representing a particular meaning among the more general term.

This is the division of arguments in the present paper. First, in section 1.2., morphological paradigms of evidentiality will be presented mainly from what has become to be called the Baltic-Turkic 'evidentiality belt'. It will be seen that numerous evidential paradigms are identified by the perfect tense (and the analytic perfect, in particular). In sections 2 and 3, the focus will be laid on what plausibility can be found for the fact that the perfect elicits evidential readings. Next, in section 4, modal verbs of German will be presented solely with the eye on the distinctions between deontic ('root') and epistemic usage. It will be seen that German modals (other than English modals) not only display are sensitive to perfect and perfective contexts. However, counter to expectation, such behavioral sensibility is true for deontics rather than epistemics. Since, as shown in 6, this aspectual distinction is accompanied by a clear finiteness criterion (epistemic uses never occur non-finitely), it will be posited that this finiteness constraint on epistemic modal readings in Modern German (as well as throughout in Present Day English) may have been introduced late in the development of the Middle High German period. Though no direct evidence can be found in the singularly scarce documentation of modal verbs in the history of German, there is indirect evidence that such an assumption is not hopelessly pursued (section 7). It will be concluded (section 8) that the finiteness criterion plays the prominent role for any investigation of both the synchronic and diachronic scenarios of German modal verbs and that, once a solution of the historical question is found, the aspectual comparison with perfect-triggered evidentials is of secondary order.

1.2. Evidentiality paradigms

Despite the wide extension of the term *evidential*, there are subtypes other than that of (*ad*)*mirativity*. Thus, in Lithuanian there are two separate participial forms, the nominative active participle (NAP) denoting the 'report' or 'hear-say' type of evidential, and the neuter passive participle (NPP) 'inference on the basis of observable results' evidential. Both have different paradigmatically fully pro-

¹ *Admirativity* or *admirative* appears to have been around longer. If Latin is chosen for its source, *admirative* is the more felicitous term as compared to *mirative*. However, it is questionable whether too much weight needs to be given to such purely semantic distinctions. What is more important is whether different behavioral properties can be detected for the different terminologies.

ductive forms (Gronemeyer 1998: 1).

- (1)a Šiaŋakt lij-ę
 last-night rain-NAP.PAST.NT
 'I see it rained last night'
 b Šiaŋakt ly-ta
 last-night rain-NPP.PAST
 'Evidently, it rained last night'

No doubt, evidentiality has its morphological paradigm in its own right. In the Western section of the Fenno-Ugric languages, and its subpart of the Baltic-Sea Fennic languages - i.e. in Finnish, Laps, Mordwinian, Cheremis, Votjakian and Syrjanian, the so-called Permic group - as well as in historical Hungarian, two types of fully productive paradigmatic pasts are distinguished: a paradigm for 'witnessing' and another for 'non-witnessing' (Bereczki 1992:72; according to Honti 1997: 165f.). See (2) below.

		WITNESSING PARADIGM	NON-WITNESSING PARADIGM	
(2)a	Votyak	<i>mɯniz</i>	<i>mɯnem</i>	'has gone'
	Cheremis	<i>mijəš</i>	<i>mijen</i>	
	Hungarian	<i>mene</i>	<i>ment</i>	
b	Votyak	<i>mɯne val</i>	<i>mɯne vɯlem</i>	'went'
	Cheremis	<i>mija əl'e</i>	<i>mija ulmaš</i>	
	Hungarian	<i>megy vala</i>	<i>megy volt</i>	
c	Votyak	<i>mɯnem val</i>	<i>mɯnem vɯlem</i>	'had gone'
	Cheremis	<i>mijen əl'e</i>	<i>mijen ulmaš</i>	
	Hungarian	<i>ment vala</i>	<i>ment volt</i>	

Notice that synthetic and analytic forms interchange according to tense or aspect, not with respect to the directness of witnessing. In other words, I am far from maintaining that evidential readings derive from , or are triggered by, perfects and/or perfectives only. According to Bereczki (1992: 517; Honti 1997: 168f.) the Hungarian periphrastic forms were *auditive* functions originally, which bleached due to the weakening Turkic linguistic contact in Modern Hungarian. The same holds for the periphrastic perfect and pluperfect in the dialects of Finnish (Itkonen 1966: 282; Honti 1997: 169). It is perhaps not superfluous to point out that the non-finite component in the periphrastic temporal complexes is not always a preterite participle, but occasionally also a gerund, as in Cheremis (Honti 1997: 172), or more generally, a deverbal nominal as in Laps (Honti 1997: 170). All of these render a statal property of the event referred to.

It has often been claimed, for example, that Bulgarian as well as Macedonian interlink the analytic perfect with the *auditive* (Horalek 1967: 206; Honti 1997: 175), which is held to be due to Turkic influence through centuries of close political and linguistic contact. We may want to investigate whether it is not the case perfectness or perfectivity is at the bottom of evidentiality in these languages.

Whether one tries to avoid mutual areal influences or not, it is striking that one often speaks of the 'Old World *evidential belt*' covering Turkish, Kartvelian, Bulgarian-Macedonian and Albanian. This belt extends to include Georgian and the adjoining, only partly genetically related, Kartvelian languages ((East) Armenian, Laz, Mingrelian, Svan) as well as Turkish and Persian (Boeder 1998) or Estonian (Comrie 1976: 86) and Lithuanian (Gronemeyer 1998) where the PERFECT has triggered a general evidential reading. See the following Georgian example, where the example in (3a) renders the evidential triggered by the perfect tense, whereas (3b) is the (narrative) AORIST form (Boeder 1998: 10, ex. (27)-(28)). (3c-d) are taken from Tschenkeli (1957: 491f.).

MODERN GEORGIAN

- (3)a *tovli mosula*
 snow has.come
 "snow must have fallen"
- b *tovli movida*
 snow came
 (as in a narrative irrespective whether or not the reporter has seen the snow falling)
- c studenti tserda tserilebs
 the student wrote.IMPERF letter.PL
- d student'ma datsera tserili
 the student wrote.AOR the letter
- e student'ma dautseia tserili
 the student has.written.PERF the letter

Tschenkeli (1957): 492) is very specific about the link between the perfect (as opposed to the imperfect) and the aorist) and what he calls the "ungesehene, nicht wahrgenommene Tempus" or the "anscheinende Zeitform", respectively. In Svan, the most archaic of the Kartvelian languages of the split ergative type, the perfect series is employed to express the evidential meaning of the verb (Sumbatova 1998: 1). Within this series, there are both imperfective and perfective paradigms. See (4)-(5) for illustration of either evidential paradigm. The imperfective evidentials come in the form of a special participle and the copula in the present, past or subjunctive.

- (4)a (story about avalanches that had fallen down in the winter of 1986-1987 told by a young man from the village of Mulaxi)
amçikka mi mam xwardäs şwäns, mare kämumbwex mäj xola dwrew læmär
 once I not was Svania.DAT but tell.AOR.3PL say bad time be.IEVID.3SG
mulaxs i mtlijänd şwäns
 Mulaxi.DAT and whole Svania.DAT
 "I was not in Svania at that time, but they said it was a bad time for Mulaxi and the whole of Svania"

Notice the difference of aspect or tense on the Svan equivalents for *tell* (in the aorist) and, on the other hand, for the copula *to be* (in the perfect tense). The evidential meaning of the corresponding

perfective paradigm demonstrates that the Svan perfect is essentially an evidential. In other words, in addition to the perfect meaning (if present in the first place), the meaning is that of indirect evidence, or mirativity, for the event reported. More generally and in the most neutral case: the meaning of the perfect is that of a completive action that was not observed by the speaker in the real world (Sumbatova 1998: 5). See (5) below.

- (5)a active verbs: perfects are formed synthetically
 miga
 1SG.O-OV.build.PERF (O= 'object', OV= 'object version')
 'I have apparently built'
- b passive verbs: perfects are formed periphrastically (passive participle + confix *lə__e*)
 algēli (from **ad-lə-r-g-ēl-lə*)
 PV.3SG.IO-OV.build.be.PRES.3SG (PV= 'preverb', IO= 'indirect object')
 '(it) has apparently been built'

In what follows I will focus on evidentials that clearly connect to perfects or perfectives, and I will demonstrate that such a link is far from arbitrary. From this one can conclude that there may be more to what appear areal clusterings of this phenomenon due to language contacts.

2. The semantic evidentiality release behind the perfect (participle)

It follows beyond doubt from the small number of languages totally unrelated to Germanic and unrelated even to Indo-European discussed above, that it is the perfect that triggers the development of EVIDENTIALS. It has often been stated on the basis of extended empirical data sampling across languages that typical historical sources of evidentials are perfects and, more generally, resultative constructions (Willett 1988, Bybee&Dahl 1989 *Bybee&Dahl (SiL): Perfekt > Evidentials*). Comrie (1976: 110) sees the relation between perfects and evidentials (or 'inferentials') □in the fact that both categories present not an event in itself, but via its results [...]□. Irrespective of whether the perfect is expressed synthetically (which often stems from a younger morphological fusion of an older participle morpheme into the copula) or periphrastic, the preterite participle is a perfect semantic and syntactic representative of a state category, and often resultative state, and, consequently, has adjectival properties (which, among other, restrict its subject to a NON-AGENT). Boeder (1998: 31, echoing Johanson 1996) coins the terms which are to be compared □postterminal□ and □indirective□ to get closer to an explanation, and he points out that results always imply a causal relation. The important issue in this relation is the distinction of an INTERNAL and an EXTERNAL type of CAUSALITY (IC vs. EC). This is mirrored in the following examples (gleaned from Rutherford 1970; cf. Boeder 1998: 31). Notice the enthymemic character of the link between the first and the second clause in (6b).

- (6)a he's not coming to class because I know that he's sick (EC: *X is the case because Y*)
 b he's not coming to class, [ENTHYMEME] because he just called from SD
 (IC: *I say X because Y*)
 c Mary isn't here because she has to work in her office ... EC

d Mary isn't here because I don't see her ... IC

While *EXTERNAL causality* can be rendered by the resultative perfect since both share the factual report that a present, unspecified state X is due to a past event Y, as in (7a) below, *INTERNAL causality* provides the reason for one's saying something. Witness (7) below, where the enthymeme of (6b) is made explicit.

(7)a X because Y ... EC
 b I say X because there is evidence Y for X ... IC

Note that the latter type of causality, IC, is not justified by the simple (7a) above. Rather, all sorts of justifications may apply (quite generally so, cf. Willett 1988: 57). Compare (6b) above, which classifies types of IC according to the underlying intentions or capacities that may be involved on the part of the people reporting or involved as protagonists in the reported event. There may be sources like inference, hearsay, guessing, probability, surprise ('(ad)mirativity') etc., all of which the perfect as such and alone leaves unspecified, whereas they become specified in the case of the sub-specifying EMVs in German rooted in the original, diachronically deontic predecessors as well as paradigmatically concomitant and diachronically co-existing DMVs. It is not more than trivial, and yet quite enlightening, to say that there is a constant oscillating movement between the two types of MV - a change which is due to the ever ambiguous participating semantic and syntactic characteristics of the clausal *actants* and *circumstants*. In a way, thus, the formula in (7b) above is the key to an understanding of evidentials and their relation to the (implicative) resultative perfect - where, beyond doubt, (1) above provides a clue to the types of \square evidence \square to be supplied for the relation of causality on levels beyond that of the event syntax and semantics.

There is an important inference to be drawn from (7b), however: namely the valid conclusion that the performative definition in (7b) accounts for the fact that evidentials are normally restricted to finite assertions (cf. Boeder (1998, section 5.7) on Georgian as well as for the present time meaning of the perfect). Recall, in this context, that MVs in all Germanic are PRETERITE PRESENTS, whose present tense meanings are derived from a perfective perfect with resultative purport (in the sense of the Latin inchoative verbal paradigm, as with *novi* and its implied perfective meaning "I know" (from "I have learned"), perfect of the present tense *nosco* "I learn (= "I acquire/get to know")"). The inflection as well as the ablaut change between singular and plural are still witness to this origin.²

2 It strikes one that perfects turn out to be triggers of ergatives just as well as evidentials. See Abraham 1999 for a discussion of the link between split ergatives (Hindi, Urdu, Balochi) and so-called 'ergative' predicates in the European languages. The puzzle boils down to the following question: what do evidentials as mood functors have to do with ergative systems where the case system is dependent upon the perfect(ive) trigger? While I have no conclusive answer to this (possibly ill-motivated) question, one factor may be involved: i.e. the fact that evidentials are triggered by temporal systems where the aorist paradigm opens an extra paradigmatic meaning for the pure perfect. It appears that languages not projecting such an aorist paradigm will not be able to develop evidentials. See the discussion of Svan (illustration (4) and (8)).

3. The historical origin of evidentials as tied to specific forms

Boeder (1998: 31ff.) speculates that the evidential meaning of the perfect in Modern Georgian is a reflex of the principally ambiguous usages of the resultative perfect all along from Old Georgian onwards. A similar conclusion is drawn by Sumbatova (1998: 14; see also Natadze 1955 and Machavarani 1988 for identical conclusions, authors not mentioned by Boeder 1998). The perfect is fundamentally ambivalent. On the one hand, it refers to a completed (hence, past) event. On the other hand, the perfect implies some state resulting from the completion of this event. Emphasizing a connection between an existing result and a completed past action leads to evidentials whose meaning is triggered by inference from the state subsequent to the primary event.

It is interesting to see that in languages providing more than one perfect paradigm, the grammaticization may run through several steps of relaxing the aspectual resultative denotation of the preterite participle in the predicative evidential composite. (8) is gleaned from Sumbatova's investigation of the Kartvelian language of Svan (Sumbatova 1998: 16).

(8)

LESS GRAMMATICIZED

↓	'true' resultative constructions
↓	experiential (non-preverbal) perfect
↓	perfective evidentials - retaining a resultative meaning: Georgian, Old Hungarian etc.
↓	- 'pure' evidentials (narratives)
↓	imperfective evidentials - independent of perfect(ive) trigger: Svan, German (?)

MORE GRAMMATICIZED

The grammaticality cline in (8) is relevant for our next issue to be discussed. We will show that modal verbs in German project evidential meanings in what appears to be a clear dependency with respect to the perfect and the perfective. Yet, the question may arise at a later point in the discussion whether German has grammaticized its epistemic modal readings to the extent that perfect(ivity) no longer plays this triggering role.

4. Morphological signal of evidentiality in German?

It is a completely open question, at first sight, why exactly MVs should trigger meanings such that EVIDENTIAL EMVs would emerge. While, often, such questions are pointless since their answers are unfathomable with respect to their true diachronic origins and pragmatic, or idiosyncratic lexical, preconditions, the diachronic cause in the present case can be provided. (9) gives evidence to what we call the AKTIONSART or ASPECT ARGUMENT.

4.1. The Aktionsart or aspect argument

(9) illustrates that aktionsart or terminative (perfective) aspect is at the bottom of the root-epistemics³ distinction of German modals.

- | | | |
|------|--|--------------|
| (9)a | <i>Er will/muß/kann/soll/mag zuhause sein</i> [-term]
he will must can shall may at home work | ...DMV, EMV |
| b | <i>Er durfte zuhause arbeiten</i> [-term]
he may- <i>PRET</i> at home work | ...DMV, *EMV |
| c | <i>Er dürfte zuhause arbeiten</i>
he might at home work | ...*DMV, EMV |

Abstracting from *können* "can", which is alethic and, consequently, can hardly be distinguished from an epistemic reading, what we see is that any MV other than *können* is stuck with the root reading as soon as the dependent main verb is terminative (inchoative). See (10).

- | | | |
|-------|---|-----------------------------|
| (10)a | <i>Sie will/muß/soll/kann/mag einschlafen/Ärztin werden</i> [+term]
she will... in-sleep a doctor become | ...DMV, *EMV |
| b | <i>Sie will/muß/soll/kann/mag schlafen/Ärztin sein</i> [-term]
she will... sleep/ a doctor be | ... ^(?) DMV, EMV |

Note the equivalent distribution in English below where ((a) is terminative, while (b) is non-terminative.

- | | | |
|-------|--------------------------------|--------------|
| (11)a | He <i>must</i> die[+term] | ...DMV, *EMV |
| b | He <i>must</i> be dying[-term] | ...*DMV, EMV |

As expected, another disambiguating factor would be adverbials excluding the inferential (epistemic) reading, such as *sicher* (-lich), *gewiß* "certain(ly)", *offensichtlich* "obvious(ly)". Furthermore, EMV is restricted to the present tense or preterite predication. Posteriority (future tense) is excluded. See (12).

- | | | |
|-------|---|-----------------------------|
| (12)a | <i>Sie will/muß/mag einen Diamanten kriegen/Ärztin werden</i>
she will... a diamond get/ a doctor become | ...DMV, *EMV |
| b | <i>Sie will/muß/mag/soll einen Diamanten haben/Ärztin sein</i>
she will... a diamond have/ a doctor be | ... ^(?) DMV, EMV |

³ Since I exclude the alethic modal verb *können* from my investigation, the remainder of the modals allows me to use the term *deontic* in its original sense as a cover term. Notice that the term *root* implies that no epistemic meanings and uses accompanied the early rise of the lexical elements. This is exactly what I claim is NOT correct (see, for a similar conclusion, also Traugott 1986).

Other than, for example, the equivalent in Danish, German (12b) does not fill up the epistemic paradigmatic gap created by the unacceptable (12a). The conclusion is again that reference to the future does under no circumstances yield an epistemic reading. Rather, future reference fuses the range of readings into the modal root reading. We shall have to see later whether there is any further extension of tense reference possible and whether or not this observation fits into some further generalization.

The chart in (13) schematizes the distribution between EMV/DMV and terminativity: [+term] on the embedded main verb disambiguates the MV-homonymy by excluding the epistemic reading. Notice that we have no explanation for this generalization.

(13) THE AKTIONSART OR ASPECT CONDITION SUMMARIZED

	[-terminative]	[+terminative]
EMV	+ cf. (10b), (12b)	- cf. (10a), (12a)
DMV	+/? cf. (10a), (11b)	+ cf. (11a)

Notice that the distributional result in (13) is far from trivial (and certainly not included in Palmer's comparison about the English modals and typological evidentiality, who, consequently, does not draw any conclusions as to the original preterite presentiality of Old English modal verbs; cf. Palmer 1987). Since modal verbs in Germanic (and only there) had perfective meanings and forms originally (except for *wollen*), and since, second, German modal verbs have retained some of the original sensitivity as perfectives (see also Abraham 1995, ch. 10), the consonance with evidentials triggered by perfects and perfectives entices us to investigate the question whether this can lie at the bottom for the epistemic variant of German modal verbs also. Notice that the very same cannot be claimed to hold for English modern modal verbs due to, at all appearances, to their complete loss of independent lexicality (and, along with this, their original aspectuality; cf. Abraham 1997).

Notice that our distributional findings legitimate the conclusion that in German the root meaning is the unmarked one, whereas the epistemic reading is the derived, marked one because of the observed restriction. However, it would be wrong to conclude from that that the historical uses should not include epistemic readings also depending on specific contexts.

Let us now look at another striking distributional fact which relates to temporal periphrastics.

4.2. The periphrasis, or finiteness, argument

The examples below permit the conclusion that it is the specific auxiliary in the periphrases that restricts the temporal forms to the root meanings excluding thereby the epistemic, subjective, and inferential interpretations. The examples illustrate only the perfect and pluperfect temporal complexes; see (12) above for the future periphrasis (*werden* "become" occurring also as an inchoative (main) verb) aligning completely with this observation.

- (14)a *Er hat(te) Geld verdienen wollen/müssen/sollen* ...DMV, *EMV
 he has/d money earn will...[-finite]
- b *Er wollte/mußte/sollte viel Geld verdienen* ...DMV, EMV
 he will-/must-/shall-PRET[+finite] much money earn

Notice that the auxiliary in these "modal periphrases" is selected by the modal verbs, not, however, by the main verb. This is shown by the fact that *sein*-selecting main verbs are embedded under *haben* "have" all the same. (6a) presents ergative/inchoative verbs which always select *sein*.

- (15)a *Er ist/*hat angekommen/gestorben*
 he is has arrived died
- b *Er *ist/hat ankommen wollen/müssen/sollen* ...DMV, *EMV

Note the difference between (14b) and (15b). (6b) corresponds to (14a). (15) unmistakably shows that tense and modality are projected via *haben* onto the MV, not, however, onto the main verb. This may appear somewhat truistic given the linear order of the verbal cluster in German. Note, however, that this linear order is not mirrored by any other Germanic language, except Frisian. See (16) for an inverted order of AUX/V in Dutch (SOV) as well as in Danish (SVO, although with a linear domain resembling the German *middle field*, i.e. the domain between V in clause-second position and V in clause last position in dependent sentences).

- (16)a DUTCH: *Hij *is/heeft willen/moeten aankomen* ...MV-V/²V-MV
 he is has will must arrive
- b GERM.: *Er hat ankommen wollen/müssen* ...*MV-V/V-MV
- c DAN.: *Han har villet tjene mange penge* ...MV-V/*V-MV
 he has will-ed earn much money

As soon as we give up the periphrasis, i.e. under the synthetic preterite form on the main verb, the reading of the verbal cluster is different. Compare (14a),(15b) showing MV-periphrasis, with (8) with periphrasis on the main verb.

- (17)a *Er will/soll/muß Geld verdient haben* ...²DMV, EMV
 he will/shall/must money earned have
- b *Er will/soll/muß angekommen sein* ...DMV, EMV
 he will... arrived be
- c *Er will/soll/muß Geld verdienen* ...DMV, EMV
 he will... money earn

(17) corresponds to (14b). See the different grammaticality checks in (13) above. When AUX and MV change functions, as compared to (14b) and (15b), in the role of tense and aspect periphrasis, respectively, the readings in (8) are the inverse of those in (15).

While (18) displays distributional characteristics under periphrasis on MV: a periphrastic MV excludes the EMV-reading; see (14a),(15b) vs. (14b). (19), collapsing (13) and (18), summarizes the constraints for the analytic forms on the main verbs.

(18) THE PERIPHRASTIC OR FINITENESS CONDITION SUMMARIZED

MV	PRETERITE [+FINITE]	PERFECT/PLUPERFECT/FUTURE PERIPHRASTIC/[-FINITE]
EMV	+ cf. (14b)	- cf. (14a)
DMV	+ cf. (14b)	+ cf. (14a)

This conditions states two things: that EMV cannot be the embedded component in MV-embeddings; and that EMV must always be finite. In other words, the epistemic reading is restricted to the MV occurring finitely. The DMV is not subject to this constraint.

The inferential uses of MVs (EMVs) in West Germanic (of which I have illustrated only German, but which material could easily be extended to cover also Dutch, West Frisian, and Yiddish as well as the substandards and dialects of German) possess an ostensive similarity with evidentials, in terms of their particular illocutive, non-veridical function, however not as regards their diachronic emergence from lexical or other grammatical elements and functions. We shall elucidate this presently. We have illustrated above the fact whatever the semantic remnants of the original preterite present-turned modal verbs in Modern German, the syntactic distributions valid for the epistemic, or evidential readings, of the MVs defy the periphrastic perfect or finiteness, whereas one would expect the opposite given the evidence of a wide number of unrelated languages of the world. This is a true linguistic puzzle. I will briefly come back to this question below. (19) summarizes our findings.

- (19)a DMV \Leftrightarrow [\pm terminative]; i.e. DMV compatible with any aspect property
- b DMV \Leftrightarrow [\pm finite]; i.e. acceptable under periphrasis both embedded and embedding
- c EMV $\rhd\lhd$ [+ terminative]; i.e. EMV not compatible with perfectivity/terminativity
- d EMV $\rhd\lhd$ [- finite]]; i.e. incompatible under periphrastic embedding (*Er muß-D/E gewollt-D/*E haben*).

Notice that it is (19c,d) which destroys, at first sight, the link that we have laid between the epistemic variant of MV in German and the evidential perfect trigger. We shall pursue this uncomfortable conclusion presently. Before we do so, however, let us pursue a few obvious paths of consideration on the basis of the interrelations between EMVs and evidentials (EVs) sketched above, since these have never been sketched, to the best of my knowledge.

4.3. The heterogeneous evidential meanings of German modal verbs

This brief subsection is meant to show that, despite the overwhelming congruence in epistemic function, epistemically used modal verbs in German nevertheless never betray their original deontic basis. Given the many readings evidentiality is expressed by in the different languages (see our brief terminological discussion in the beginning) it may be interesting and telling to see what the exact evidential background to each modal verb of German is. Quite clearly, the discussion of EMVs as relating to DMV-meanings allows - or, rather, forces - a more concrete understanding of the retained lexical specifics despite the encompassing bleaching results, which are due to grammaticalization. In the following list of EMV-inferentials in German, the evidential meanings of each lexical are in some way weakly reflecting the original deontic meaning. Quite clearly, (20a,b) correspond closely to the *auditive*, possibly also to the *admirative*, while (20c,d) mirror more closely the concepts of *subjective* or *inferential*; all *subjective*, *vremya neočevidnogo deystviya*, *Nichtaugenzeugenschaftsmodus* and *epistemic* fit as cover concepts for the four meanings as a whole.

(20)

a X _[EMV will-] +V	= "X will/wants others to believe V"	= "X pretends"
b X _[EMV soll-] +V	= "X soll/must be the case according to others"	= 'hear-say'
c X _[EMV muß-] +V	= "X muß/must be due to the accompanying facts"	
	= "X's factual conclusion warranted"	
d X _[EMV möglich-] +V	= "X is capable of V-ing"	= "X is possibly V-ing"

There is thus a common source to this array of evidentials in German, i.e. inferentiality. However, none of them has bleached to the point where the original lexical source (deontic meaning) is depleted completely. There is no reason to assume that, in some future time, the four meanings will merge to one common evidential function: not because the different meanings are meaningful distinctions upon the common reading of non-veridical evidentiality; and, second, because of the ever virulent principle of *one form, one meaning* in German.

5. Conclusion: the diachronic-developmental stage of epistemics

Let us draw the following first conclusions from the above with respect to prominent positions in the literature.

- (21) The historical change from the pure perfect to the regularized readings of the perfect evidential has, at the bottom of the phenomenon, nothing to do in any direct fashion with what Traugott (1988: 409), and, in a less direct way, also Sweetser (1990), have called the general tendency of change from external, fact-bound, relations to internal, speaker-oriented relations, and, consequently, from external to internal causality. Much rather, and a lot more pointedly and empirically soundly, this turns out to be a result of, and thus dependent upon, the weakening of selection constraints of the subject actants in the agreement carrying predicates (from fact-bound to person-bound subjects; thus from 'objectification' to 'subjectification')

ation'). There is no need to assume that a term such as 'subjectification' is in any way explanatory in a sense truly committed to detailed linguistic analysis unless this term in itself is explained on the basis of the weakening selection constraints on the part of the predicates.

- (22) The diachronic account that EMVs, just as EVs in general, are derived historically, and, thus, are diachronic dependents upon, DMVs is correct only to the extent that the basic selection restrictions were not relaxed from scratch, i.e. relaxed already in historical times. In fact and to the contrary, Traugott (1988) has observed numerous cases where such selection relaxations force readings much in the sense of modern EVIDENTIALS. Notice that this observation also nags on the triggering status of □subjectification□ as a historical explanation. EMVs, to recall the point of departure of the present section of this paper, are thus to be seen as diachronically concomitant with DMVs from scratch depending purely on the linguistic □stringency□ of the language user.
- (23) The various features of sensitivity of the German MVs under perfect and perfective weight is thus no longer surprising if judged against the two obvious parameters of historical weight: the fact that MVs were preterites with a resultative meaning at stages of the Germanic languages when these, for one, were still highly aspectual, and, second, when the synchronic constraints under perfect and perfective weight in Modern German (and Dutch, Yiddish, and West Frisian) apply. It is to be noticed in this context that the perfect in Georgian triggers the observed evidentials only in the temporal-aspectual context of an aspectual system, where the aorist contrasts eminently in function with the perfect. German, in this sense, is no longer a language aspect-prominent in any paradigmatically based way. Yet, there are sufficient syntactically distributional characteristics retained which reflect the previous former aspectual status of German, in what may be called a □retrieving syntagmatic-combinatorial syntactic and semantic sector of a former temporal-aspectual paradigmatics□.
- (24) The distinct evidential meanings of EMV in Modern German support the more general observation that the resultative perfect and evidentials are interlinked in other, less subclassifying languages. German lends support to this general findings by retaining some of the deontic, 'root' semantics of DMV in its evidential intension, while echoing the common factor of perfectivity in the verbal subclass of 'preterite presents'. Proof of this can be derived from studies on oral German texts entertained by Letness (1998: 9) with the result that occasionally the specific EMV *soll-* cannot be substituted by one of the other MV.
- (25) As a general conclusion with respect to Lightfoot's general assumption that the Middle English MVs relinquished the main paradigm of verbs, one may assume on the basis of our insights that this is due to the fact also that aspect as well as morphologically reflected aktionsart was totally lost as a determining factor. This, in turn, must have been a consequence mainly of the pervasive attrition of verbal inflectional and derivational morphology during the Middle English period - certainly a revolutionary development not reflected in the other Germanic languages, which were never under such profound exposition to, and influence of, a fundamentally different language as Old English, and thus never subject to such profound creolizing influences as Middle English.

6. The epistemic-evidential puzzle of German modal verbs

Let us now come back to the epistemic-evidential puzzle of German modal verbs (section 4.2.; illustration (19c,d)), which is in the center of our discussion and which has remained unsolved so far. A list of the criteria for the distributional and diachronic emergence of epistemic modal verbs in German and evidentials across languages provides a clue as to what matters in the comparison of the two categories.

(26)	German EMV		EVIDENTIAL
a	*in periphrastic perfects	≠	occur primarily in periphrastic perfects
b	*in non-finite contexts	=(?)	does not arise in non-finite contexts (?)
c	*in perfective contexts	≠	occur primarily in perfective contexts

Notice that there does not appear to be a clue that evidentials do not arise in non-finite contexts. Thus, we may want to say that German modal epistemics and evidentials have no mean of triggering properties.

German EMVs relate syntactically to DMVs according to the following range of possibilities and their illustrations.

(27)a	EMV dominates DMV: DMV [_{FIN} EMV], but * EMV [_{FIN} DMV]		
b	*EMV [_{FIN} EMV]		
c	DMV [_{FIN} DMV], at least unless disallowed semantically (for example, for 'horror aequi modi')		
(28)a	daß das gehorsame Kind	<i>müssen</i> [¬◇EMV]	<i>wollte</i> [◇EMV]
b	daß das gehorsame Kind	<i>wollen</i> [¬◇EMV]	<i>mußte</i> [◇EMV]
c	daß er zuhause sein		<i>mußte</i> [◇EMV]
d	daß er zuhause hat sein	<i>müssen</i> [¬◇EMV]	

Compare (28c,d) with (28a,b) above. With true evidentials, of course, the finiteness criterion never popped up, in contrast to epistemic modal verbs in German. The following illustrations testify to this generalization. ['E' signifies 'epistemic reading, 'D' a 'deontic' reading]

(29) Wenn sie dürfen(D/*E) soll(D/E), aber nie können(D/*E) will(D/E), dann mag(D/E) sie auch nicht müssen(D/*E). Wenn sie aber wollen(D/*E) dürfte(*D/E), dann mag sie auch sollen, und dann kann sie auch müssen.

How are we to explain the unexpected fact, given the overwhelming and cross-linguistic perfect evidence for evidentials, that it is just the epistemics that are incompatible with perfect contexts. It appears that the following only two conclusions remain.

(29) **Alternative 1 – the 'exclusion model'**: The obvious similarity of epistemic denotations of MVs

- (29) **Alternative 1 – the ‘exclusion model’:** The obvious similarity of epistemic denotations of MVs in (West) German(ic) on the basis of the meaning may be due to the original status of perfects of what were originally ‘preterite presents’. This distribution alone legitimates the crucial parallel between modal verbs in German and those evidentials restricted to the occurrence in the context of the perfect and/or the perfective. The fact that and temporal and aspectual distributions are such that they do not support epistemic readings of the MVs is a phenomenon which has to be kept apart and allows no direct conclusion as to the first typological comparison above. Modern modal verbs, thus, once were, but are no longer, subject to the perfect(ive) trigger for the epistemic/evidential reading. The perfect trigger for evidentials does not carry over to modal epistemics in German. All evidence to a possible general link is pure chance.
- (30) **Alternative 2 – the ‘finiteness parameter’:** Another conclusion with an interesting methodological purport is this: the Aktionsart-distributional sensitivity is diachronically young and has to do with the complementary finiteness distribution. The fact that EMVs are incompatible with the lexically inherent verbal feature [+term] may have to do with the fact that it cannot occur in a non-finite clausal function. This is all the more true since the modern periphrastic perfect has no perfect(ive) reading any longer, but has given way to a true preterite reading under preterite loss - at least in German and its dialects (among which Yiddish), but probably also in English and other Germanic languages. Our expectation that German modal verbs, once preterite presents, would have to show distributional sensitivity to the periphrastic perfect is thus unfounded in the first place. Now, if the finiteness parameter is historically younger than the aktionsart trigger of modal verbs, then we have a means to narrow in on the historical period of these two stages in terms of a *terminus post quem* or *ante quem non*. No doubt, this is a speculation. But it is worthwhile investigating in the absence of a better, more promising, claim, and in the presence of the evidence that perfectness and perfectivity is amenable to the emergence of evidentiality. We intend to investigate Old High German and Middle High German material with an eye on this question.
- (31) **Methodological conclusion:** If the finiteness parameter is historically younger than the aktionsart trigger of modal verbs, then we have a means to narrow in on the historical period of these two stages: on a prior stage where the finiteness constraint did not hold; and a consequent stage when, due to some influence, this constraint arose. If that were indeed the case, the investigation of the material in Old and Middle High German should allow an archeological *terminus post quem* and *ante quem non*.

Is there reason to assume that there is some diachronic reality behind this conclusion? Much in distinction to the diachronic body of investigation on older stages of English (Denison, as its last member in the chain), neither of the diachronic syntaxes by Behaghel and Hermann Paul can help one; the very notion of the distinction between deontic and epistemic readings of the modal verbs is inexistent. Fritz (1997), on the other hand, does not provide one single illustration for a double occurrence of modal verbs in Old High German or Middle High German. Nor is there any evidence in the general grammars of Middle High German about any change of the subcategorizing properties of modal verbs toward something like the finiteness parameter.

into the older stages of English and German.

7. Early epistemic readings of modals and double occurrences

7.1. Epistemic uses, next to deontic ones, in the early phases of German?

Strikingly enough, there are no records to be found in Behaghel (1923) or Paul (19%%). Yet, evidence for EMV-readings of the German equivalents of English 'may/can/must' can be found (according to Fritz 1997: 94-100; see also Fritz 1998: 128-129); examples are restricted to the earliest occurrences⁴:

- (32)a thaz *mag* thes wanes wesan meist Otfrid II.7.50 (863-871 A.D.)
'this may have contributed the most to this idea'
- b wie *kan* gesein in deinr gewalt Kaufringer, Sappler 1972, 3.426 (15th cent.)
die hell und auch das himelreich
'how may both hell and heaven be under your power?'
- c der (gekreuzigte) ist erstanden werlich/ Alsfelder Passionsspiel 7392; DWbN 6, 1799 (15th cent.)
das *dorffen* mer (die Sodaten am Grab) woil sagen sicherlich
'he has truly arisen, as we may say with certainty'
- d min herre was biderbe gnuoc, Hartmann, *Iwein* 2033-35 (early 13th cent.)
aber jener der in da sluoc,
der *muose* tiurre sin dan er [...]
'my master was good enough,
but he who beat him,
had to be even knightlier than him ...'

The picture that the historical attestation of German provides is somewhat discouraging. Let us see what is attested of historical material of English.

7.2. The older stages of English

If it is true that Old English modals behaved like Modern German modals (v. Kemenade 1989), we expect both epistemic readings and double occurrences of modals. Let us briefly illustrate this and then ask the question whether there was such a stage when non-finite uses of modals did not have to be root, but could also be epistemic. Are there such non-finite epistemic modals?

Epistemic modals, with and without subjects, are attested for Old English although "none of them can be regarded as an established carrier of epistemic meaning" (Denison (1993: 298) referring to Goossens (1982)). I restrict myself to just three samples from Denison's inventory Denison (1993: 298ff.).

⁴ As so often, I have had the privilege of Tette Hofstra's, my Groningen colleague's, help with questions of historical German.

- (33)a Wel þæt swa *mæg* OE: *Bede* 2 1.96.23
 well that so may
 "that may well be so"
- b wen is, þæt hi us lifigende lungre *wyllen* sniome forsweolgan OE: *PPS* 23.2
 expectation is that they us living quickly intend at once swallow up
 "It is likely that they will swallow us up at once"
- c Wende ic þæt thu thy wærra weorthan *sceolde* OE: *Jul* 425
 thought I that you the more-ware become should

By contrast, root meanings are quite common, and so are futural meanings, which are taken to have affinities with root as well as epistemic meanings (Denison 1993: 304). While it is interesting to find early epistemic readings of modals in the first place, it is even more striking to find double or embedded occurrences, which - if we are to believe Denison (1993: 310-311) and not Plank (1984: 310-314) according to whom epistemic modals never had non-finite forms - are instances of infinitival epistemic occurrences.

- (34)a And whan ye wole go withoute me ye quite common *shul* wel *mown* awaunte yow
 and when you will go without me [sc. *Reason*] you shall well be-able-to be-boastful
 ME: 1450 *Pilgr.L(Cmb)* 1.467
- b I fear that the emperor will depart thence, before my letters *shall may* come unto yours
 grace's hands. 1532 Cranmer *Let. In Misc. Writ.*
- c some waye y^j appered at y^e firste *to mow* stande the realme in great stede
 1533 More, *Wks.* IX 84.4

There are even three verb clusters of the type 'modal+modal+V' (Denison 1993 (311) as well as (in print: 3)).

- (35)a Also he *muste kunne* *evacuener* him that is ful of yuel humouris
 also he must know-how-to free him that is full of evil humours 1400 *Lanfranc* 17.2
- b infantis mowe receive thi sacrament of bapty m eer thei *mowe kunne* *worschipe* thee in-
 fants may receive your sacram. of bap. before they may know-how-to worship you
 1443 Pecock, *Rule* 375.2
- c if y se my neigbour goyng forto drenche him silf, y *oughte* forto *wille* *defende* him fro
 drenching 1454 Pecock, *Fol.* 129.5
 if I see my neighbour going to drown him self I ought to wish prevent him from drowning

8. Theoretical projection – and a provisional conclusion

Unless indeed EMV existed all along with DMV, as we have speculated, the break-down of DMV to EMV can only be envisioned as a process continuing over a considerable time span. We

have no record of this development, neither in English nor in German. In other words, we do not know what exactly accompanied this break-down in terms of loss of lexical and/or morphological features. The main question to ask in this context is this.

(36) Why is it that EMV cannot surface in non-finite form?

See also Roberts (1985: 29). An answer to (36) may be achieved by looking closely at the type of attrition EMV underwent. Notice that such attrition reflected upon for the diachrony of German may yield a clue also the type of attrition that English modals underwent on their way to Present Day English, since English modals have lost their deontic/root meaning to a great extent (i.e. totally except for *must*; cf. Abraham 1992). Now, what may seem to be missing with EMV as compared to DMV?

I will assume that in order for a verb to attain syntactic complement ('governed'; German 'regierten') status its subject will have to be theta marked (con Roberts (1985: 29)). This 'government' criterion excludes raising predicates since subjects of raising predicates do not project any semantic role. See the following illustrations.

- (37)a ΘE_{r_i} *drohte/riet an_j* [ΘPRO_{i_j} Θ sich_{i_j} *verachten zu wollen[?] müssen*]
 he threatened/promised REFL to despise
- b ΘE_{r_i} *will/muß/soll* [ΘPRO_i Θ sich_i *verachten wollen[?] müssen/können*]
 he will/must/shall REFL despise

drohen/versprechen are canonical subject control verbs. Under their full lexical meaning, they assign a subject-AGENT, while under the quasi-modal reading the subject gets the THEME or EXPERIENCER role. Note that the root meanings of the modals in (37b) and, likewise, the full lexical readings of *drohen/versprechen* in (37a), with AG assigned for their subjects, do not yield meaningful readings. Rather, what renders some sense is where the subjects receive the status of an EXPERIENCER or THEME. In other words, only the epistemic readings are available; the root meaning in (37b), for example, would require the role of AGENT for its subject, which is out for encyclopedic reasons.

According to Vikner (1988; following Zubizarreta 1982), in the case of verbal clusters as the ones under inspection, the subject may adopt, next to its main and strong thematic role assigned by the full lexical verb, one, but not more than one, extra and weak thematic role. See the following examples from Danish. Note that Danish, as each of the other Germanic Scandinavian languages, has two passives: a periphrastic one using *blive* "become" as an AUX; and the synthetic *s*-passive (Vikner 1988: 13ff.). The crucial observation is that the two passives have different distributions under embedding under the two types of modals (German translations added because German is more telling than English).

- (38)a Hun *vil blive arresteret* ... *DMV, EMV

he <i>AUX</i> become arrested	... participial passive
German: "... <i>wird</i> verhaftet werden"	... purely temporal
b Hun <i>vil</i> <i>arresteres</i>	... DMV, *EMV
he <i>will</i> arrested (become)	... reflexive passive
German: "... <i>will</i> verhaftet werden"	... voluntative-deontic

Since Vikner assumes that the Danish auxiliaries (auxiliary uses of) *blive*, *få* and *komme* assign extra semantic roles the subject in (38a) would collect three thematic roles (one for *vil*, another one for *blive*, and yet another one for *arresteret*) on *hun*, which is out irrespective of any specific assumption made with respect to assignment of semantic roles. This renders the deontic reading in (38a) ungrammatical. This is different in the case of EMV, which does not assign a semantic role of its own. Under the specific suspension of the strict Projection Principle ("each clausal constituent has only one semantic role"), (38a) receives an epistemic interpretation: *vil* in the function of an AUX (for German "werden", not, however, "wollen"!) does not assign the subject, *hun*, a third semantic role. In other words, (38b) also restricts the discharge of the semantic role on *hun* to 2 semantic roles, but different from that in (38a): one, under lexical government, executed by the participle of the main verb, *arresteres*, and a second, weaker one discharged by *vil*. So far the specific assumption made by Vikner (1988) and his attempt to account for the distinct distribution of the two Danish passives embedded under the specific modal readings.

The best evidence for our assumption that Mood does not project semantic roles for the respective subjects is provided also by the fact that subjunctive is never expressed on non-finite forms. Thus, in German there is no subjunctive infinitive. (39) below generalizes this empirical insight (see already Abraham 1992, 1995 ch. 6).

(39) *mood infinitive: **würden* (Subj.Pret.), **seien* (Subj.Pres.), *non-finite imperative

It was claimed that root readings of MVs in German (but not in English!) are aspectual. From this follows that the scope relations for DMV are those in (40a), while those for EMV are reflected by (40b). Recall that V, the modal-governing predicate in (40) below, projects a semantic selection grid for its governed modal verb, which is saturated in (40a), but not in (40b). As a consequence, EMV, whose subject is without a semantic role, has to raise to yield a syntactic position outside of any governee status. (40) formalizes in detail something like Roberts' (1985: 29) 'Visibility Condition' for modals' - at least in spirit, however, in much greater detail.

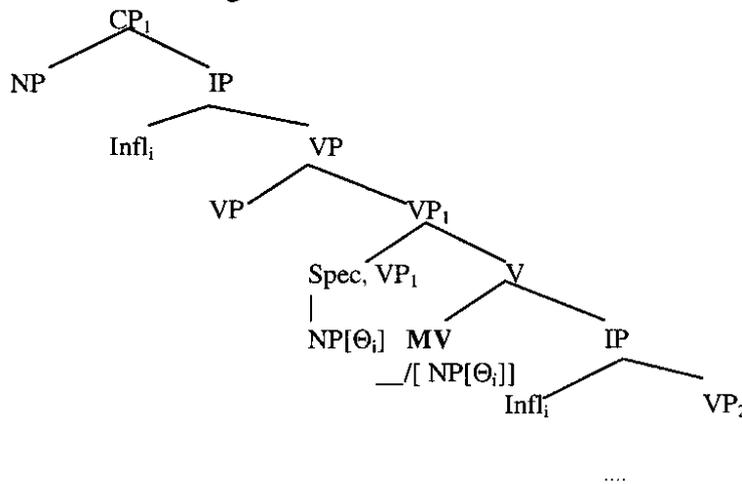
- (40)a [CP... [IP... [VP-ASPECT DMV_i [VP t_i [V]]]]]
 b [CP... [IP EMV_i [VP-ASPECT t_i [VP t_i [V]]]]]

In (40a), deontic modality expressed by the lexical MV ranges over aspect expressed periphrastically by an AUX. The scope relations with an epistemic sentential operator as in (40b), however, are reverse to those with a deontic operator, epistemics ("inferential", "subjective", "conceptual") extending the widest scope covering even aspect. Recall with respect to (40b) above that in the

dependent German clause, IP is in final position in accordance with the basic head-final projection of the German clause.

Now, if, on its pathway from D-status to E-status, the modal verb in German (and English) lost theta marking, to end as a theta-less raising verb (= modal verb in Modern English - i.e. certainly in American English; cf. Abraham 1992), this will have changed its syntactic status in ways as the following. [graph structures abbreviated]

(41) Basic (deontic) modal syntax – remains root structure throughout the history of DMV (notice the theta marking on :



(41) symbolizes, in a structural manner, the requirement that any embedded verb – among which modal verbs in deontic reading – must project a strong thematic subject role. See the licensing condition in (42).

(42) SUBJECT SATURATION CONDITION:

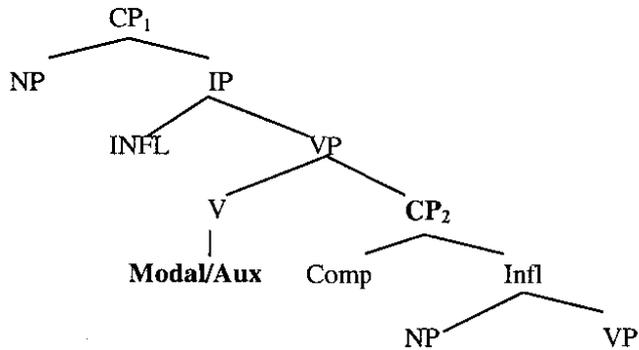
- a A non-finite predicate must project a thematic role for its external argument.
- b (by replication to (42a))

An agreement relation between a finite predicate and its thematically empty lexical subject is licensed only if the predicate occurs finitely (i.e. in INFL).

If raising, in its early stages, was like (42) below, it must have restructured to yield (43) in the course of its loss of agreement through morphophonological attrition, its loss of the subjunctive, and due to loss of other paradigmatic identifiability, in English – but not in German.

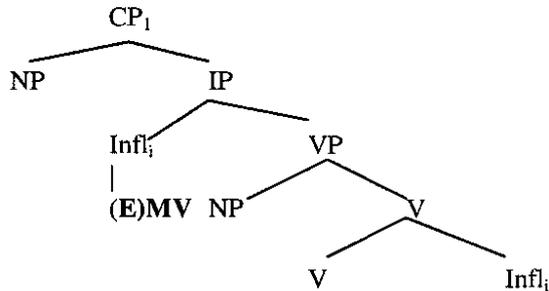
(43) Raising modal/Aux (independent clause) subcategorized for (not governing!) CP₂ (the structure graph is highly abbreviated) – early stage⁵:

⁵ The fact that auxiliaries such as (*zu*) *haben*, (*zu*) *werden* and (*zu*) *sein* can be embedded, but (*zu*) *scheinen/pflegen/versprechen* (the latter only in the modal sense) cannot, implies that there are two types of what have been called 'Raising verbs' indiscriminately in the literature.



If raising verbs (German *scheinen*, *pflügen* etc., at least in their specific embedding-only usage) are subcategorized for CP₂ as in (37), the next diachronic step should provide DMV- subcategorization for a VP-complement (i.e. governed verbal constituent as most conspicuous in South German dialects). The change from a morphological agreement system to a syntactic system was implemented by reanalysis in terms of AUX ((E)MV in (44) signifying 'EMV' in German, but MV in English since no deontic/root meanings are available any longer):

(44)



This is all we can provide, for the time being, in terms of evidence for the mere plausibility of our speculations in (29)-(31), the 'German epistemic puzzle'. The spinn-off of the discussion of the syntactic behavior is that EMV may have split off from DMV diachronically by way of restructuring in terms of German (41)-(44). The alternative for that is that EMV-subjects had theta-rich readings in the early stages and lost those through attrition in the widest sense. This, in turn and in the absence of direct clues, confronts us with two more questions, whose solution may add indirect confirmation to the second alternative. Bear in mind as a background to this question the subject saturation factor in (42).

- (45)a Can we observe early embeddings of subjectless predicates (independent of modal verbs)?
- b Under which conditions did epistemic embeddings discontinue?

For (45a), I tend to think of *ihm versprach kalt zu werden* "him promised to become cold" (embedding of *Ihm wurde kalt*). And, with respect to (45b), I have argued elsewhere, against the background of modal verbs in English, that the loss of aspect paradigms both in English and in German led to a host of changes in the grammatical system of the two languages (see, e.g., Abraham 1997, for the loss of the verbal genitive). It remains to be seen, however, to which extent this is a viable and successful path of investigation.

Whatever the outcome, (32a-d) alone confirm our assumption that EMV-readings are triggered by properties of strict subcategorization and semantic selection – i.e. not by metaphoric or metonymic extension. Nothing prevents such changes alongside the first written occurrences of modal verbs and their DMV-readings. Before this horizon, it cannot be excluded that E-readings are not derived at all, but that they occurred side by side with deontics, merely as instances of a different subcategorization. As to the *finiteness parameter* and the evidence of double occurrence of MVs in the course of the historical development of German, as well as the emerging arguments *post quem* and *ante quem non*, we shall probably have to wait for a felicitous historical finding in the future. The material attested for English is encouraging for our option in (26). Nevertheless, our speculation, thus, cannot be proved for German; however, it cannot be disproved either. If the latter explanatory scenario turns out to be successful, however, the aspectual link becomes superfluous to the extent that everything hinges on the question whether or not there was a historical period when epistemic non-finites existed – i.e. whether or not the subject saturation criterion and whether it changed its validity.⁶

References

- Abraham, Werner 1997. 'The interdependence of case, aspect, and referentiality in the history of German.' In: Ans van Kemenade & Nigel Vincent (eds) *Parameters of morphosyntactic change*. Cambridge: CUP, 29-61.
- Abraham, Werner 1992. "The aspectual source of the epistemic-root distinction of modal verbs." Paper read at the Symposium on 'Voice and modality' at the university of California, Santa Barbara. (see also *Groninger Arbeiten zur germanistischen Linguistik* 30 (1989)).
- Bereczki, Gábor 1992. 'Türkische Züge in der Struktur des Syrjänischen und ihr Ursprung.' In: Sz. Bakró-Nagy, M.; P. Hajdú (eds) *Festschrift für Károly Rédei zum 60. Geburtstag*. Wien-Budapest: 71-76.
- Boeder, Winfried 1998. 'Evidentiality in Georgian.' To appear in Lars Johansson & Bo Uta (eds) *Evidentials in Turkic, Iranian, and neighbouring languages*. Berlin: Mouton de Gruyter.
- Bybee, Joan & Östen Dahl 1989. 'The creation of tense and aspect systems in the languages of the world.' *Studies in Language* 13/1: 51-103.
- Chafe, Wallace & Joanna Nichols (eds) 1986. *Evidentiality: the linguistic coding of epistemology*. Norwood, N.J.: Ablex.

⁶ Marga Reis points out to me that the aspect scenario unfolded here is dubious in the first place since it takes for granted that the aktionsart parameter for German modals and the temporal perfects in the Baltic and Caucasian languages are on a par as triggers of epistemics/evidentials. No doubt, there is much to Reis' argument.

- Comrie, Bernard 1976. *Aspect*. Cambridge: CUP.
- Conrad, Robert J. & Joshua Lukas 1995. "The assertion of high subjective certainty. Mufian (Papua New Guinea) oral narratives." In: Werner Abraham (ed.) *Discourse grammar and typology. Papers in honor of John Verhaar*. Amsterdam: John Benjamins, 103-118.
- DeLancey, Scott 1997. 'Mirativity: the grammatical marking of unexpected information.' *Linguistic Typology* 1/1: 33-52.
- Denison, David 1993. *English historical syntax: verbal constructions*. London & New York: Longman.
- Denison, David (in print). "Combining English auxiliaries." In: Olga Fischer, Dieter Stein, & Annette Rosenbach (eds) *Pathways of language change*. Amsterdam: J. Benjamins.
- Eroms, Hans-Werner 1981. *Valenz, Kasus und Präpositionen. Untersuchungen zur Syntax und Semantik präpositionaler Konstruktionen in der deutschen Gegenwartssprache*. Heidelberg: Winter.
- Fritz, Gert 1997. "Historische Semantik der Modalverben." In: Gerd Fritz & Thomas Glonig (eds) *Untersuchungen zur semantischen Entwicklungsgeschichte der Modalverben im Deutschen*. Tübingen: M. Niemeyer, 1-157.
- Fritz, Gert 1998. *Historische Semantik*. Stuttgart: Metzler.
- Gronemeyer, Claire 1998. The syntactic basis of evidentiality in Lithuanian. Paper given at 27th Annual Meeting of the Society of Linguistics in Europe at St. Andrews, 27-29 Aug. 1998, Workshop on Modality in Generative Grammar. Handout.
- Guenchéva, Zlatka (ed.) 1996. *L'énonciation médiatisée*. Louvain-Paris: Peeters.
- Honti, Laszlo 1997. "Bloße Übereinstimmung oder kausaler Zusammenhang? [...]" *Incontri linguistici* 20: 159-181.
- Horálek, Karel 1967. *Bezevetés a szláv nyelvtudományba*. Budapest.
- Itkonen, Erki 1966. *Kieli ja sen tutkimus*. Helsinki.
- Jászó, Anna 1976. 'Megjegyzések a participiumból alakult verbum finitumok mondatanához az északi osztjában.' *Nyelvtudományi Közlemények* 78: 353-358.
- Johanson, Lars 1996. 'On Bulgarian and Turkic indirectives.' In: Norbert Boretzky, Werner Enninger, & Thomas Stolz (eds) *Areale, Kontakte, Dialekte, Sprache und ihre Dynamik in mehrsprachigen Situationen. Beiträge zum 10. Bochum-Essener Symposium [...] vom 30.6.-1.7. 1995 an der Universität GH Essen*. Bochum: Brockmeyer, 84-94.
- Letnes, Ole 1998. Aspects of the referring usage of the German modals *wollen* and *sollen*. Paper University of Bergen, Norway and Hogskolen i Agder/Kristiansand.
- Lightfoot, David 1979. *Principles of diachronic syntax*. Cambridge: CUP.
- Machavarani, Maja V. 1988. 'Stativ, rezul'tativ, passiv I perfekt v gruzinskom yazyke.' In: Vladimir P. Nedjalkov (ed.) *Typology of resultative constructions*. Amsterdam: John Benjamins, 3-62.
- Natadze, N.R. 1955. 'K voprosu ob obrazovanii vremen I nakloneniy tret'yey serii v kvartel'skix yazykax.' *Iberijsko-kavkazskoe yazykoznanie* 7: 99-100.
- Palmer, Frank R. 1990 (1979). *Modality and the English modals*. Longman: London etc. [Longman linguistics library]
- Rutherford, William E. 1970. 'Some observations concerning subordinate clauses in English.' *Language* 46: 97-115.
- Sumbatova, Nina 1998 (to appear 1999). 'Evidentiality, transitivity, and split ergativity: evidence from Svan.' In: W. Abraham & L. Kulikov (eds) *TAM and grammatical relations*. Amsterdam: John Benjamins.
- Sweetser, Eve 1990. *From etymology to pragmatics. Metaphorical and cultural aspects of semantic*

structure. Cambridge: CUP.

- Traugott, Elizabeth Closs 1986. □ Pragmatic strengthening and grammaticalization. □ *Berkeley Linguistics Society: Proceedings* 14: 406-416.
- Vander Auwera, Johan & Vladimir A. Plungian 1998. 'Modality's semantic map.' *Linguistic Typology* 2-1, 79-124.
- Weber, Daniel 1986. 'Information perspective, profile, and patterns in Quechua.' In: Chafe, Wallace & Johanna Nichols (eds) *Evidentiality; the linguistic coding of epistemology*. Norwood, N.J.: Ablex, 137-155.
- Willett, Thomas 1988. 'A cross-linguistic survey of the grammaticization of evidentiality.' *Studies in Language* 12: 51-97.