

The nature of epistemic modification

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Evaluating different types of data, we gain surprising insights on the nature of epistemic modifiers. The present study will compare the syntactic distribution of epistemic modals (EM) in both diachronic and typological respect.

(A) Turning to diachronic data from German, it turns out that the first EM in history selected predicates displaying an essential and permanent property. According to FRITZ (1991), EM grammaticalised in the course of the 16th century. Correspondingly, the empirical study presented here is based on a Early New High German corpus that consists of texts edited by a single author only, in order to avoid undesirable influences caused by microlinguistic variation: Schmid's *Neuwe Welt* (1567), containing 200.000 words. The analysis pointed out that only a small number of root modals (RM) selected stative predicates as their infinite complement, as 3.8% in the case of *mögen*. But note that in any of those cases the stative predicate referred to a temporally bound interval. One might wonder then whether RM permit the selection of predicates that denote essential states at all. Opposed to that, all of the modals that combine with essential predicates exhibit an obligatory epistemic interpretation.

- (1) *das ist ein Muentz / vnd mag zusammen drey Portugales. Croisaden seyn.*
that is a coin and may together three Portuguese Croisades be
'That is a coin and might equal three Portuguese Croisades.'

It seems then that the grammaticalisation of EM was triggered by the selection of predicates that refer to essential, permanent states.

(B) The cross linguistic data shows a similar picture. While RM lack the ability to embed essential predicates, EM do not. First of all, the case of the English modal *can*. It is a common fact that this item does not display an epistemic interpretation. Interestingly, the complement of the modal *can* may never refer to essential states, even if it is an individual level predicate. The predicate *cold* in (2) always refers to a clearly bound event of being cold but never to an essential property. Accordingly, the interpretation *maybe, the lake up there is a cold one* is not available. Moreover, opposed to EM, *can* fails to embed perfect auxiliaries as *have*, see (3).

- (2) *This lake can be cold.* (* permanent reading)
(3) **Peter can have seen the film.*

If we suppose along the lines of KRATZER (1995) that conditionals as well involve (covert) modals, we expect that they reflect the contrast discussed above. Indeed, *when*-clauses, lacking epistemic force, never embed essential (individual level) predicates.

- (4) * *When Mary knows French, she knows it well.*

Romance languages, as French display similar contrasts. Again, RM seem to be restricted to complements involving non-essential predicates, while EM tolerate them.

(C) This pattern seems to extend to a phenomenon, lately discussed by MAIENBORN (2004). She argues that locative modifier usually function as event modifier. But as soon as they are combined with essential predicates, they turn into frame modifier and gain an epistemic interpretation, similar to quotative constructions involving *wollen* or *sollen*:

- (5) *In the car, Mary was blond.*

Imagine that Peter, while driving to a party, described his new girlfriend as having blond hairs, then later in the evening at the party it turns out that she was brunette. With non-essential predicates, however, both readings are available: an epistemic one and a locative one.

(D) How do we account for the fact that RM never turn up with essential complements, and epistemic ones often do? Following KRATZER (1995), non-essential (“stage level”) predicates and essential (“individual level”) predicates differ in that only the former contain an event argument. The latter, however, lacking that event argument may only refer to essential states. In this talk, we suggest to treat RM as event modifier. Since vacuous modification is prohibited, RM are restricted to predicates containing event arguments, hence “stage level predicates”. Note that whenever a RM selects a potential individual level predicate, it will be interpreted as temporally bound interval, since an extra event argument will be provided by repair mechanisms, similar to the ‘temporariness effect’ and the ‘agentivity effect’ proposed by MAIENBORN (2003).

Opposed to that, EM will be analysed as propositional modifier that target the assertion operator located in the CP, as suggested by HÖHLE (1992) or RIZZI (1997). See ERB (2001) for a similar suggestion. Hence, they do not require predicates that involve an event argument and may even embed individual level predicates.

- (6) *The candidate must be native speaker.*
 (7) *A basketball player can be short.*

As DIESING (1995) indicates, presupposed subjects originate in a structural higher position, whereas non-presupposed ones are generated in a lower position and can be bound by quantifier. As it seems, RM may alternatively bind non-presupposed subject DP's and according to its modal force may function as existential quantifier or universal quantifier, as shown by BRENNAN (1993).

Now it becomes clear, why BECH (1949) wondered about the mysterious double life of modals that in some uses they target the 'realisation' of the infinitival complement but in some uses its 'reality'. In our terms here, the first correspond to the event modifying RM, the latter to the proposition modifying EM. Similarly, the account here provides an interesting link between formal accounts and functional ones: Considering RM as event modifier, it explains why they are always 'action oriented', as commonly assumed by most functionalist approaches.

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