

## On the Origin of Modal Counterfactuals

**I. Modal counterfactuals (MC)**, (1), (Stowell 2004) have interesting diachronic correlates (McFadden & Alexiadou 2006; 2010: fn. 9, M&A). M&A show the relevance of the counterfactual effect for the rise of the *have*-perfect. A (perceived) open question is why the key MCs should have (only) arisen in Middle English (ME). The goal of this work, concerned with modality, not the perfect itself, is to show where exactly MCs have entered grammar(s).

**IIa. Background:** MC sequences of modal+*have* have been on the rise ca. since the 1350s.

**IIb. Ingredients:** The starting observation is that counterfactuality and actuality effects (AEs, i.e. contexts in which the complement of the modal is taken to hold in the actual world) are two sides of the same coin, a fact inspired by semantic theory (Lewis 1973, Kratzer 2011). AEs have correlates at the interfaces. In languages with a perfective/imperfective distinction on modals, AEs pattern with perfective modals (Bhatt 1999 a.o.). We first note that in German (which does not have the overt aspectual distinction), classical duals such as *konnte* (can.past) and *musste* (must.past) in the preterit typically entail the realization of the complement VP, cf. (2)-(3). [We control for additional factors influencing the presence and absence of AEs in G. without illustrating them in this abstract due to space reasons.] A very first expectation could be: OE modals might have behaved like German. Next, we show that this was not the case.

**III. Methods, findings, and use:** While OE/ME modals are certainly a well-studied area (e.g. Roberts & Roussou 2003), AEs are not. We have additionally used German for comparison, as a language in which the non-retractability of certain inferences is testable synchronically. Reactions to AEs can surely not be tested in OE as such. However, we can methodologically sensibly raise the simpler question, whether an event under a modal is realized or not in an OE text. The available context of the token yields the possible answer ('realized', 'not-realized', 'open'). We have searched under inclusion of the parsed corpora of historical English (cf. Kroch & Taylor 2000, Taylor et al. 2003) for appropriate syntactico-semantic configurations. Some factors can obscure the visibility a realized reading independently of the modal's (counter)factualty, for instance negation. Second, we restricted searches to modals in the past, whether indicative or subjunctive, since AEs arise with past tense (Kratzer 2011). Notice that OE and ME productively had past morphology on modals that could also carry a genuine past tense meaning (unlike ModE in general). Semantic inspection of the examples and their contexts constitute the bulk of the work, given that there are several contexts that can e.g. block realization independently of the modal itself. Such factors include higher negations in some cases, negative quantifiers, negative adverbs taking wide scope over the modal, bouletic modals and generic contexts (esp. for OE predecessors of *could* and *might*), and other operators. When the potential interfering factors are controlled for, OE turns out to have had modals in the past tense the denotations of the complements of which were not realized. There are also some contexts in which a past modal would make a counter-to-fact continuation in German infelicitous or in which a past modal could not be used at all, while there are such contexts in OE, cf. e.g. (4). What we suggest is the following: OE past morphology on a modal could also convey that the events in the complement VP were counter-to-fact. The observation fills the part of the puzzle raised by the late appearance of MCs. It is known that counterfactuality and past often reside on the same morphological items expressing anteriority (Iatridou 2000). We show that in OE the past could indeed convey pre-utterance-time or counterfactual interpretation. While the past on the modal itself continued to support sheer temporality during Middle English, its ability to convey counterfactuality was weakened. The anteriority feature stemming from the *have* perfect (as opposed to the resultative *be* perfect; cf. M&A's finding) then entered the competition to convey what was increasingly unavailable through the modal's past morpheme alone.

### Basic data:

- (1) *The Dodgers could/should/might have won.* [Modal counterfactual construction, ModE]
- (2) *Der Flieger konnte landen (<sup>#</sup>tat es aber nicht).* [German: AE/realized reading only]  
The plane can.PAST land (did it but not)  
Intended with the continuation: It was possible for the plane to land, but it didn't.
- (3) *Jana musste einspringen (<sup>#</sup>tat es aber nicht).* [German: AE/realized reading only]  
Jana must.PAST jump.in (has it but not done)  
Intended reading with the continuation: 'Jana had to help out, but she didn't'.

Duals *mihte/sceolde* in the past (*moste* not a necessity modal in OE, an orthogonal issue here):

- (4) *Eala come ic ær þæt ic **mihte** geendian mine ylde mid swylcum.* [not AE/realized]  
alas came I earlier that I might end my life with such  
'Alas, had I come earlier so that I could have ended my life with such men.'  
(coelive,+ALS\_[Maurice]:99.5739)
- (5) *Onð þeah þe he Cristen beon **sceolde**, ne wolde he ænige aare weotan on þære*  
and though that he Christian be should not would he any honor know on the  
*Cristnan æfestnisse, seo mid him up cumen wæs.* [not AE/realized]  
Christian devotion which among them up come was.  
'And though he should have been a christian, he would not show any regard for  
christian piety, which had sprung up among them.' (Miller's 1890: 149 translation)  
(cobede,Bede\_2:16.148.22.1428)

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