The development of *must* from Old to Middle English – a progress report
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Language Description and Typology, 25 May 2018

Abstract: The modal auxiliary *must* has undergone a number of semantic changes from Old English to the present day. Despite disagreements on some minor details, scholars generally agree that Old English *must* expressed possibility and later developed into a modal of necessity (e.g. Standop 1957; Solo 1977; Goossens 1987; Traugott & Dasher 2002; Yanovich 2016). In this paper I will present the preliminary results of a study of the semantic development of *must* from Old to early Middle English (c. 1100–1300 AD). The analysis suggests that early Middle English *must* could express both possibility and necessity, as argued by Yanovich (2016), but that the necessity meaning was largely restricted to dynamic modality.

Overview of paper
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1 Background
1.1 *Etymology*
Present-Day English necessity modal *must* from Old English *mot*, cognate with Dutch *moeten*, WFris *moatte*, German *müssen*, Gothic **gamotan* 'find room' < PGmc **(ga)-mōtanq*. No cognate in Scandinavian.

1.2 *Meaning in OE*
OE *mot* has received much attention in the literature (e.g. Goossens 1987; Ono 1958; Solo 1977; Standop 1957: Ch. 2; Tellier 1962: Ch. 2; Traugott 1989; Traugott & Dasher 2002: Ch. 2; Van Herreweghe 2000; Yanovich 2016). Agreement that *mot* generally expressed possibility (including permission):[1]

(1) *him ne uðe   god lengran lif-es, þæt he mid læðð-um   us eglan **moste***
     him NEG grant.PST God longer life-GEN that he with injury-DAT.PL us afflict MOT.PST
     'God did not grant him a longer life, so that he **could** plague us with injuries'
     (Jud 176)[2]

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[1] Periodization used in this paper: Old English (OE), c. 800–1100 AD; Early Middle English (EME), c. 1100–1300 AD; Late Middle English (LME), c. 1300–1500 AD; Early Modern English (EModE), c. 1500–1700 AD; Present-Day English (PDE).
[2] All OE examples are from the DOE Web Corpus.

(2)   *Iosep … bæd   Pilatus þæt   he   **moste**   nim-an þæs   Hælend-es   lichama-n*
        Joseph ask.PST Pilate that he   MOT.PST take-INF DET.M.GEN saviour(M)-GEN body-ACC
        'Joseph asked Pilate if he **could** take away the body of the Saviour'
        (Jn (WSCp) 19.38)

However, there is disagreement about a number of difficult passages (cruces) in literary texts
and about whether *mot* could also express necessity.

'Ambiguity theory' (Bosworth & Toller 1898; Goossens 1987; *OED*; Ono 1958; Standop 1957;
Van Herreweghe 2000): *mot* usually expressed possibility, as in (1–2), but necessity uses are
found occasionally. (3) is an oft-cited example:[3]

(3)   *londriht-es   **mot**   þære   mægburg-e   monn-a æghwylc idel
                hweorf-an*
        landright-GEN MOT.PRS DET.F.GEN clan(F)-GEN men-GEN.PL each.NOM devoid.NOM go-INF
        'Every man of that clan **must** go without landright [lit. 'devoid of landright']'
        (Beo 2886–88)

'Possibility theory' (Solo 1977): *mot* always expressed possibility; all attestations with
apparent necessity meaning can be explained away as textual errors or stylistic choices. (3) is
taken to be sarcastic: "every man of this clan will be allowed to go empty of landright" (Solo
1977: 224).

'Variable-force theory' (Yanovich 2016): *mot* expressed a type of 'variable-force' modality,
namely possibility with the "presupposition of inevitable actualization" (at least in 'Alfredian'
OE, c. 900 AD). This is supposed to account both for the fact that some instances are better
translated by PDE 'may' and some by PDE 'must', and for the fact that the verb is not very
frequently attested in OE.

1.3 Changes since OE
Development of necessity meaning (OE 'can, may' > PDE 'must'), cf. (4).

(4)   *The film **must** be in firm contact with the solid surface to obtain a sharp picture.*
        (1947 *Nucleonics* Dec. 47/1; *OED*, s.v. *must*, v.1)

Emergence of epistemic/evidential uses, cf. (5).

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[3] Cited by Bosworth & Toller (1898, s.v. *mōtan*), *OED* (s.v. *mote*, v.1), Ono (1958: 64), Standop (1957: 76), and
Van Herreweghe (2000: 220–221).

(5)   *Tyson and Sweitzer concluded that they* **must** *be newborn galaxies.*
         (1990 R. Morris *Edges of Sci*. ii. vii. 133; *OED*, s.v. *must*, v.1)

Loss of present–past opposition (OE *mot – moste* > PDE *must*).

2 Classification of modality
2.1 Approaches to modality
Traditional distinction between **dynamic** and **deontic** ('root' or 'event') modality on the one hand and **epistemic** modality on the other. Evidentiality sometimes included as a type of modality as well, e.g. by Palmer (2001):

Propositional modality	Epistemic	Speculative Deductive Assumptive
	Evidential	Reported Sensory
Event modality	Deontic	Permissive Obligative Commissive
	Dynamic	Abilitive Volitive

Table 1. Based on Palmer (2001: 22)

Similarly, van der Auwera & Plungian (1998) distinguish between epistemic and non-epistemic modality. The latter includes **participant-internal** and **participant-external** modality, of which deontic modality is a subtype:

Possibility			
Non-epistemic possibility			Epistemic possibility (Uncertainty)
Participant-internal possibility (Dynamic possibility, Ability, Capacity)	Participant-external possibility		
	(Non-deontic possibility)	Deontic possibility (Permission)	
Participant-internal necessity (Need)	(Non-deontic necessity)	Deontic necessity (Obligation)	Epistemic necessity (Probability)
	Participant-external necessity		
Non-epistemic necessity			
Necessity			

Fig. 1. Modality types in van der Auwera & Plungian (1998: 82)

2.2 Classification used in this study

Based on work by Nuyts and colleagues (Byloo & Nuyts 2011; Nuyts & Byloo 2015; Nuyts, Byloo & Diepeveen 2005, 2010; Van Ostaeyen & Nuyts 2004). The Dutch examples in the following are from these studies.

Distinction between qualificational ('true') modal categories – dynamic, deontic, and epistemic – and a variety of non-qualificational ('interpersonal') categories. Comparable to the distinction between non-intentional and intentional modality in Hansen & Heltoft (2011: Ch. 6) and that between non-volitive and volitive in Narrog (2012: 46–60).

Important difference with traditional approach: **deontic ≠ directive** (cf. especially Nuyts, Byloo & Diepeveen 2005, 2010).

Qualificational   Non-qualificational
   Dynamic   Directive (DIR)
     Participant-inherent (DYN-INH)   Optative (OPT)
     Participant-imposed (DYN-IMP)   Intention (INT)
     Situational (DYN-SIT)   …
   Deontic (DEO)
   Epistemic (EPI)

Participant-inherent dynamic (DYN-INH): ability or need inherent in the first argument:

(6)   *de mensen uit Leiden **konden** echt geweldig goed zingen* (ability, i.e. possibility)

(7)   *dat **moest** ze gewoon even kwijt* (need, i.e. necessity)

Participant-imposed dynamic (DYN-IMP): possibility or necessity conditioned by the circumstances:

(8)   *Via Hans Westerhof **kunnen** we nog altijd een beroep doen op de know-how van Ajax, vooral inzake aanvallend voetbal.* (possibility)

(9)   A: *kunt ge daar hout mee schuren en kunt ge daar ook die metalen pootjes mee afschuren?*
      B: *da 's veel te breed hè. dat **moet** ge met de handen doen* (necessity)

Situational dynamic (DYN-SIT): potential or inevitability inherent in the situation as such:

(10) *Bij een aardbeving **kan** er zelfs aan dit soort van bouwmateriaal schade ontstaan* (potential, i.e. possibility)

(11) *Die onverschilligheid van de regerenden **moest** volgens Bertrand wel leiden tot een uitbarsting van woede en wanorde* (inevitability, i.e. necessity)

Deontic (DEO): degree of moral/social acceptability or advisability:

(12) *Wat u doet **kan** helemaal niet, een klooster bouwen op het grootste joodse kerkhof ter wereld!* (moral acceptability, i.e. possibility)

(13) *… de gedachte dat in 't verleden hogere lasten door de gemeente bij de burgers zijn gelegd daar waar we vonden dat het rijk eigenlijk had **moeten** financieren* (moral advisability, i.e. necessity)

Directive (DIR): permission or obligation issued by someone (an 'intentionality'):

(14) A: *mevrouw moeten wij die riviertjes ook blauw kleuren?*
B: *dat **mag** je doen ja. da's misschien inderdaad een goed idee* (permission, i.e. possibility)

(15) *zondag **moeten** alle Belgen ouder dan achttien … gaan stemmen* (obligation, i.e. necessity)

3 Old and early Middle English *mot*
3.1 Old English

Three possibility modals: *cann*, *mæg*, and *mot*. Necessity is expressed by the verbs *þearf* (the cognate of German *dürfen*) and *sceal* (as well as various impersonal constructions):

	possibility	necessity
DYN	INH: cann / mæg	þearf
	IMP: mæg / **mot**	
DIR	**mot**	sceal

'Division of labour' in the field of possibility: *cann* is restricted to DYN-INH with cognitive/mental predicates (16):

(16) *And se   þe ne **cunne**   þæt Leden understand-an, hlyst-e   nu*
and DET.M REL NEG CAN.PRS.SBJV DET.N Latin   understand-INF listen-PRS.SBJV now

on Englisc be suman dæle hwæt þæt   Leden   cwed-e …
in English by some part what DET.N Latin   say-PRS.SBJV

'And he who **cannot** (DYN-INH) understand the Latin [of the Bible], may now hear in English part of what the Latin says …'
(WHom 19, 45)

DYN-INH in a wider sense is expressed by *mæg* (17), which is also used for DYN-IMP (18):

(17) *Hwa* **mæg** *synn-a forgyf-an buton   god ana?*
      who MÆG.PRS sin-PL absolve-INF except   God alone
      'Who but God alone **can** (DYN-INH) grant absolution?'
      (Lk (WSCp) 5.21)

(18) *n-ag-an   we ðæs   heolstr-es þæt we us gehyd-an* **mæg-on**
      NEG-have.PRS-PL we DET.GEN cover-GEN that we us hide-INF   MÆG.PRS-PL
      'we do not have any cover so that we **can** (DYN-IMP) hide ourselves'
      (Sat 100)

Finally, as in (1–2) above, *mot* can be used for DYN-IMP (19) and DIR (20):

(19) {*Æfter þeosan gewinne gewearð þætte Perse gebudan frið eallum Creca folce, næs na*
      for þæm þe hie him ænigra goda uþen, ac for þæm þe hie wunnon on Egypti,}

      þæt hie **most-en**   *for him   þy bet   þæm   gewinn-e fullgong-an*
      that they MOT.PST-PL.SBJV for them   the better DET.DAT fight-DAT finish-INF

      '{It was after this war that the Persians offered peace to all the Greeks, not because
      they wanted to do them any good but because they were fighting against the
      Egyptians} and wanted to **be able to** [DYN-IMP] give full attention to that war.'
      (Or 3, 1.55.15; translation by Godden 2016: 151, 153)

(20) *&   mon* **mot**   *feoht-anorwige, gif he gemeteð   oþer-næt   his*
           æw-um
      and one MOT.PRS fight-INF exempt if   he   meets   other-M.ACC by his lawful-N.DAT

      wif-e,   betyned-um dur-um   oððe under an-re   reo-n
      wife(N)-DAT locked-DAT door-DAT.PL or   under INDF-F.DAT blanket(F)-DAT

      'And anyone **may** (DIR) fight without forfeit if he finds another man with his lawful wife
      behind locked doors or under a blanket'
      (LawAf 1, 42.7)

3.2 Early Middle English

Unambiguous necessity uses appear in *mot*, but apparently only with dynamic meaning, cf. (21–22). In directive uses, *mot* continues to express possibility, cf. (23–24).

	possibility	necessity
DYN	can / mai	**mot** (tharf)
DIR	**mot**	shal

(21) *alswa þe gode ancre ne fleo ha neauer se hechʒe . ha **mot** lichten oðerhwiles dun to*
      þeorðe of hire bodi . eoten . drinken . slepen . wurchen . speoken & heren of þ hire
      neodeð . of eorðliche þinges
      'Even so, the good anchorite, no matter how high she may fly, she **must** (DYN-IMP)
      sometimes come down to the earth on account of her body, and eat, drink, sleep,
      work, and speak and hear of what she needs of earthly things'
      (*Ancrene Riwle* II.106.1321; PPCME2)

(22) *Me schon I **mot** me self ofdrawe*
      Ase y neuer ʒet ne dede.
      'My shoes I [the earl] will **have to** (DYN-IMP) take off myself, as I have never done
      before'
      (*Beues of Hamtoun* 3035–36; CMEPV)

(23) *Þer ne **moste** libbe*
      Þe fremde ne þe sibbe
      Bute hi here laʒe asoke
      And to here toke.
      'Neither stranger nor clansman was **allowed to** (DIR) live there, unless they renounced
      their own faith and converted to theirs [the pagans']'
      (*King Horn* 67–70; Helsinki Corpus)

(24) *Þe Gywes onswerede. after vre lawe.*
      *We ne **mote** nenne mon. do of lyf-dawe.*
      'The Jews answered: "According to our law we are not **allowed to** (DIR) put any man to
      death"'
      (*The Passion of Our Lord* 342–44; CMEPV)

4 Comparison with Danish *må*

Present-day Danish *må* (cognate with PDE *may*, Dutch *mogen*) shows a distribution very similar to that of EME *mot* (Hansen & Heltoft 2011: 783–90):

	possibility	necessity
DYN	kan	**må** (behøve)
DIR	**må**	skal

In dynamic uses, *må* is a necessity modal, cf. (25). (In negated clauses and questions, *behøve* is used instead of *må*).

(25) *Montør-en fik   sved-et   hår-et,   mens lejlighed-en-s   22-årig-e*

fitter-DEF   get.PST   singe-PTCP   hair-DEF while flat-DEF-POSS 22-year.old-DEF

*mandlig-e beboer **måtte**   behandl-es for chok.*
male-DEF   occupant MÅ.PST   treat-PASS for shock

'The gas fitter had his hair singed, while the 22-year-old man living in the flat **had to** (DYN-IMP) be treated for shock.'
(KorpusDK, newspaper article, 1991)

In directive uses, *må* expresses permission (i.e. possibility), cf. (26). (Also in negated and interrogative contexts).

(26) *Det   eneste, han **måtte**   skriv-e   i fængsl-et, var   et   ugentlig-t*
DET.N only   he MÅ.PST write-INF in prison-DEF was   INDF.N weekly-N

brev   til sin   kone   på maksimalt to   ark.
letter(N) to REFL.POSS.C wife(C) of   maximally two sheets

'The only thing he was **allowed to** (DIR) write in prison was a weekly letter to his wife of no more than two pages.'
(KorpusDK, newspaper article, 1991)

Just like in EME *mot*, the dynamic necessity meaning of Present-Day Danish *må* appears to have developed out of dynamic possibility. In Middle Danish, *må* expressed dynamic possibility, as in (27):

(27) {*Och wel hun sydhæ neth foræ dywreth tha gangher thet til oc faller paa synæ knæ och legher sith howith i hennæ skøth oc wordher saa fast at sowæ*}

ath	*hun*	***maa***	*dræw-æ*	*thet*	*dywr*
that	she	MÅ.PRS	kill-INF	DET.N	beast(N)

'{And if she [a virgin] sits down before the beast [a unicorn], then it will approach her, fall to its knees and lay its head in her lap, and fall into a sleep so deep} that she **can** (DYN-IMP) kill the beast.'
(*Lucidarius*, MS. c. 1450; cited from Obe 2011: 258)

5 Conclusion

The behaviour of early Middle English *mot* is not as erratic as it first appears – possibility and necessity meanings do not occur randomly, but in a pattern similar to Present-Day Danish *må*.

The ME and Danish systems seem to have developed along similar paths, from a situation where *mot/må* only expressed possibility, to a system with possibility DIR and necessity DYN meanings:

	possibility	necessity
DYN	X ⟶	X
DIR	X	

Plans for the future:
» More detailed description of the semantics of OE *mot*
» Exact steps from possibility to necessity (in English as well as in Danish)
» The loss of possibility meaning from EME to LME
» Investigate whether other WGerm languages followed the same path

Primary sources

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DOE Web Corpus = *Dictionary of Old English Web Corpus*. https://www.doe.utoronto.ca/
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