The Saga of Three Mighty Modals:
A language learner’s guide to understanding how English
must, may and can develop from deontic to epistemic uses

Foong Ha YAP, Weirong CHEN & Mable CHAN
Hong Kong Polytechnic University
Functions of *can*

- (a) He *is able to* help us.
- (b) He *will* help us.

*He can help us.*

*He can help us, if we ask.*
Functions of *can*

- (a) He *is able to* help you.
- (b) He *is permitted to* help you.

*Okay, he can help you.*
Functions of *may*

- (a) They are permitted to leave the next day.
- (b) It is possible they will leave the next day.
Functions of *may*

They may betray us.

- (a) *They are permitted to betray us.*
- (b) *It is possible they will betray us.*
Functions of *must*

- (a) We are able to cross the river. (Old English)
- (b) We have to cross the river.

We must cross the river.

We must cross the river before the rain comes.
Functions of *must*

- (a) She *has to* be here. *(obligation: she has no choice)*
- (b) She *has to* be here. *(logical conclusion: the evidence is such)*

*She must be here.*

Gran’s the only one she’d turn to when she’s in trouble.
Students sometimes wonder and ask:

- How come these modals have so many functions?
Is there a learnability problem?

- Given that many modals have multiple functions, how do learners acquire these various form-function mappings?

- (Extended) Vygotskyan approach:
  - SOCIAL ACTIVITIES > Consolidation of form-function mappings through frequent use > Attention to form > Pattern recognition > Creative play

- Formal Instruction: Focus on form

- Grammar Story approach: Focus on form + Play
Our present focus

- The story of how modals acquire new functions over time.
- We first focus on the functions of *can*.
- Then we compare its functions with those of *may* and *must*.
- We highlight some robust diachronic patterns:
  - Deontic > epistemic uses
  - Paradigmatic change—structural analogy
  - ‘Cyclical’ (or rather ‘wave-like’)—in the sense that the semantic extensions are renewable, albeit through recruitment of new grammatical items/constructions
  - Crosslinguistically robust (Bybee, Perkins & Pagliuca 1994; Traugott & Dasher 2002)
<table>
<thead>
<tr>
<th>Functions of <em>can</em></th>
<th>Old English (OE) 5th century-1066</th>
<th>Middle English (ME) 1066-1476</th>
<th>Modern English (ModE) 1476-present</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Late</td>
<td>Early</td>
</tr>
<tr>
<td>mental ability</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>physical ability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>root possibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>permission</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>obligation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>epistemic possibility</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 1: Development of English *can*

<table>
<thead>
<tr>
<th>Functions of <em>can</em></th>
<th>Old English (OE) 5th century-1066</th>
<th>Middle English (ME) 1066-1476</th>
<th>Modern English (ModE) 1476-present</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Late</td>
<td>Early</td>
</tr>
<tr>
<td>mental ability</td>
<td>√</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>physical ability</td>
<td></td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>root possibility</td>
<td></td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>permission</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>obligation</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>epistemic possibility</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*epistemic possibility*
Learning grammar through ‘play’

- We illustrate how students can engage in activities that can help them consolidate the concepts they have learned.

- Some possible formats include:
  - Illustrated grammar story books (8-12 pages)
  - Animations
  - Video productions
Overview of presentation

- Diachronic research on modals *can*, *may* and *must*.
- Illustration of diachronic findings on *can*.

- Video production on the evolution of the functions of *must*:
  - Background information: functions of *must*
  - Video-show: uses of *must* across time (OE, ME, ModE)
  - Students’ comments: what have they learned?

- Why do Grammar Stories on modals?
Development of English *can*

**Present-day English**

- The uses of *can* in Present-day English can be illustrated by the following examples.

  (1) a. *He can speak three languages.*  
      b. *I can swim.*  
      c. *Smoking can cause cancer.*  
      d. *Can I use your computer?*  
      e. *That can’t be the time!*

- Present-day English *can* derives from Old English *cunnan* ‘to know (how to), to be mentally/intellectually able to’.
Old English Period (5th century-1066)

- The present form of Old English *cunnan* was *cannn* (> PDE *can*).
- Its preterit (past) form was *cūðe* (> PDE *could*).

- *Cunnan* in OE functions primarily as a transitive verb meaning ‘to know’ (Tanaka 1990: 91).

(2) a.  *Ic hine cupe cnihtwesende*  
    ‘I knew him when he was a youth’  
    *(Beowulf, cited in Klaeber 1922: 372)*

    b.  *men ne cunnon,*  
        *hwyder helrunan hwyrftum scriphað*  
        ‘men know not  
        where such mysterious creatures of hell go in their wanderings’  
    *(Beowulf, cited in Klaeber 1922: 162)*
OE *cunnan* can also be used with an infinitive, meaning ‘to know how to’.

(3)  

a. *Men ne cunnon secgan to soðe*  
   ‘Men know not how to say truly’  
   *(Beowulf, cited in Klaeber 1922: 50)*

b. *him bebeorgan ne con*  
   ‘He knows not how to defend himself’  
   *(Beowulf, cited in Klaeber 1922: 1746)*

- In other words, OE *cunnan* expresses mental ability, i.e. the power to learn or retain knowledge.
Around 1300, *can* was found with predicates requiring **physical ability** (i.e. the ability to perform some physical act) (Bybee et al. 1994: 192).

*Can* was extended to all types of activities and express **general ability** (i.e. meaning ‘to be able’).

(4)  
   a. So yung þat sho ne **couþe Gon** on fote.  
      *Havelok III* (c. 1300)  
   b. I **kan** nat love a coward, by my feith!  
      *The Nun’s Tale*, line 91  
         (late 14th c.)  
   c. To **can renne** withe speer.  
      *Bk. Noblesse 76* (1475)  
   d. Sum off yaim **couth swome** full weill.  
      J. Barbour *Bruce* (Adv.) III. 431  
         [1489 (1380)]
Mental ability + physical ability → general ability

- Bybee et al. (1994: 192) suggest that *can* is often used where both mental and physical ability are required, since ‘most activities that require mental ability also require some physical ability’.
Modern English Period (1476-present)

- In Early Modern English, *can* expressing ability was further extended to indicate root possibility.

(5) a. *Thou cannest not haue of Phocion a frende & a flaterer bothe to gether.*

   N. Udall tr. Erasmus *Apophthegmes* 299a (1542)

b. *And can you blame them?* P. Stubbes


c. *Ye cannot drink the cup of the Lord, and the cup of devils.*

   *Bible (A.V.) 1 Cor.x.21* (1611)

d. *You can hardly over-water your Strawberry-Beds.*

   J.Evelyn *Kalendarium Hortense* (ed.8) 33 (1691)
How does the change from ability to root possibility happen?

According to Bybee, Perkins & Pagliuca (1994), the agent’s ability to perform an act is determined not only by the agent, but also by the external world.

For example, *I can ride that horse*, the agent’s ability to ride that horse depends not only on the agent’s ability, but also on the properties of the horse, since ‘horse can be more or less difficult to ride’.

*Can* indicating ability was then extended to ‘predicate all sorts of enabling conditions – those internal to the agent as well as external conditions’ (Bybee et al. 1994: 192).
Can is associated with less formal registers

- Early 16th century
  - *Can* indicating *possibility* was favoured in colloquial registers ‘in particular, in texts close to spoken language, such as diaries, private correspondence, trials and, to some extent, sermons’ (Rissanen 1999: 237-238)

- 16th & 17th century
  - *Can* indicating *possibility* gains ground at the expense of *may.*
In early Modern English, *can* also developed an *epistemic meaning*.

However, the epistemic use of *can* only occurs in *negations* and *interrogations* (Rissanen 1999: 237).

(6) a. *This cannot be* but a great folly.

   ([HC] Brinsley 45)

b. *And Nicodemus answered and sayde vnto him:*  
   *how can these thinges be?*

   ([HC] Tyndale John 3.9)
**Could** as a modal expressing epistemic necessity

- In Present-Day English (PDE), *can* still cannot express epistemic meaning in assertions.

- It is often the past form *could* that indicates epistemic meaning.

(7) a. *There could be* something wrong with the light switch.

   (Quirk et al. 1985: 233)

b. *This could be* the all important round.

   (S.10.3.99 from Palmer 1990: 185)
Hypothetical possibility > epistemic possibility

- According to Goossens (1996: 15), the epistemic use of *could* derived from its hypothetical possibility use, which arose in Middle English (Andrews 1993: 38).

(8) So god as gawayn gaynly is halden,
And cortaysyse is closed so clene in hymseluen,
*Couth not* lyȝtly haf lenged so long with a lady
Bot he had craued a cosse bi his courtaysye ...  

*(Sir Gawain 2420, Andrews 1993: 42)*

‘As gallant as Gawain rightly is considered,
If chivalry is contained so completely in himself,
[He] *could not* easily have lingered so long with a lady
Unless he had craved a kiss for his courtesy …’
(9) a. but that I am forbid...
I could a tale vnfolde whose lightest word
Would harrow vp they soule,

(Hamlet 630, Andrews 1993: 44)

b. you could for a neede study a speech of some dosen or sixteene lines, which I would set downe and insert in’t, could ye not?

(Hamlet 1471-3, Andrews 1993: 44)

c. Had I but time, as this fell sergeant Death
Is strict in his arrest, o I could tell you

(Hamlet 3555-6, Andrews 1993: 44)
Goossens (1996: 15) proposes that ‘hypothetical possibility gradually shades off into epistemic’ and provides a hypothetical context below in which could can mean ‘perhaps’.

(10) ... and considering that the trip was too sharp for such a big horse as this handsome son of le Sage he has acquitted himself extremely well. Sagacity could be the one to give Pinturischio most to do if they meet next Thursday.

(A32, 66-70 from Goossens 1996: 15)
The use of *can* indicating permission is a 19th-century development (Traugott 1989:36; Rissanen 1999:237). The following examples are from the *OED*.

(11) a. **Can I speak with the Count?**

   *(Falcon, Tennyson 1879)*

   b. **Father says you can come.**

   *(Dog with Bad Name, xv.156, T.B. Reed 1894)*

   c. **No one can play the organ during service time without the consent of the Vicar.**

   *(Church Times 3 Feb. 136/3, 1905)*
According to Bybee et al. (1994: 193), the permission use of *can* developed out of its root possibility use as in (5).

They also suggest that the permission use can be regarded as a special instance of root possibility, since ‘The general enabling conditions expressed by root possibility include both physical conditions and social conditions, and permission is simply the presence of social enabling conditions’.
Figure 1. Development of *can*
Figure 2. Development of *may*

Old English

emerges in Late Old English

Physical ability → General ability → Root possibility

Epistemic possibility

Permission

SOCIAL DOMAIN
Figure 3. Development of *must*

Old English

- Verb ‘measure’
- Ability
- Permission

**Social Domain**

- Obligation
  - Emerges in Late Old English; productive from ME

- Epistemic necessity
  - Emerges in Late Old English; still objective in ME, subjective in ModE

- Archaic use
- Rare in late OE
- Productive in late OE
Table 1. Development of English *can*

<table>
<thead>
<tr>
<th>Functions of <em>can</em></th>
<th>Old English (OE) 5th century-1066</th>
<th>Middle English (ME) 1066-1476</th>
<th>Modern English (ModE) 1476-present</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Late</td>
<td>Early</td>
</tr>
<tr>
<td>mental ability</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>physical ability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>root possibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>permission</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*obligation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>epistemic possibility</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 2. Development of English *may*

<table>
<thead>
<tr>
<th>Functions of <em>may</em></th>
<th>Old English (OE) 5th century-1066</th>
<th>Middle English (ME) 1066-1476</th>
<th>Modern English (ModE) 1476-present</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Late</td>
<td>Early</td>
</tr>
<tr>
<td>physical ability</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>general ability</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>root possibility</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>permission</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>obligation</td>
<td></td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>epistemic possibility</td>
<td>Rare, but earlier than permission (can be subjectless)</td>
<td>✔ (can be subjectless)</td>
<td>✔ (can be subjectless)</td>
</tr>
</tbody>
</table>
### Table 3. Development of English *must*

<table>
<thead>
<tr>
<th>Functions of <em>must</em></th>
<th>Old English (OE) 5th century–1066</th>
<th>Middle English (ME) 1066–1476</th>
<th>Modern English (ModE) 1476–present</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Middle</td>
<td>Late</td>
</tr>
<tr>
<td>ability</td>
<td>rare</td>
<td>rare</td>
<td>rare</td>
</tr>
<tr>
<td>permission</td>
<td></td>
<td>restricted</td>
<td>restricted</td>
</tr>
<tr>
<td>obligation</td>
<td>&gt; emerge</td>
<td>&gt; emerge</td>
<td>&gt; emerge</td>
</tr>
<tr>
<td><em>epistemic possibility</em></td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>epistemic necessity</td>
<td>rare</td>
<td>deontic/epistemic</td>
<td>&gt; emerge</td>
</tr>
</tbody>
</table>

The table above illustrates the development of the modal *must* in Old English (OE) from the 5th century to 1066, Middle English (ME) from 1066 to 1476, and Modern English (ModE) from 1476 to the present. The table indicates changes in the frequency and range of *must* with respect to different functions such as ability, permission, obligation, and epistemic possibility.

For example, in Old English (OE), *must* was rare throughout all periods. In Middle English (ME), *must* became more restricted and less frequent in the late period. In Modern English (ModE), *must* for obligation (objective) is now marked, indicating a shift in usage over time.

In the case of epistemic necessity, *must* was rare in Old English (OE). In Middle English (ME), it emerged as a deontic/epistemic possibility, and in Modern English (ModE), it remains marked for both objective and subjective uses.
The sense of *can* has gone through the following stages:

(i) **mental** enabling conditions *exist in the agent*
(ii) enabling conditions *exist in the agent*
(iii) enabling conditions *exist*
(iv) **social** enabling conditions *exist (in the situation)*
(v) enabling conditions *exist in some possible world*

--- for the completion of the main predicate situation
Development of modal *may*

The sense of *may* has gone through the following stages:

(i) **physical** enabling conditions **exist in the agent**
(ii) enabling conditions **exist in the agent**
(iii) enabling conditions **exist (in the situation)**
(iv) **social** enabling conditions **exist (in the situation)**
(v) enabling conditions **exist in some possible world**

-- for the completion of the main predicate situation
Development of modal \textit{must}

The sense of \textit{must} has gone through the following stages:

(i) enabling conditions \textbf{exist in the agent}
(ii) enabling conditions \textbf{exist (in the situation)}
(iii) \textbf{social} enabling conditions \textbf{exist (in the situation)}
(iv) \textbf{social} expectations/obligations \textbf{exist (in the situation)}
(v) evidential information \textbf{exists}

-- for the completion of the main predicate situation
References


References (contd.)