

# A New Modal Cycle

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## Abstract

The goal of this paper is to describe a new set of modals that is appearing in contemporary English. The epistemic modals with perfect have are forming a new class including *mighta*, *coulda*, *woulda*, *shoulda*, and *musta*, when they are used with an additional *have*. This use is accepted widely. There is a further stage where the new modal is selecting an infinitive as its complement, i.e. without a (present) perfect meaning, not widely accepted. I describe this set of changes as a cycle because there is both economy and renewal at work. The framework used is Minimalist (Chomsky 1995 and onwards), with a more articulated TP-layer. The data come from corpus and internet sources; the study is not a quantitative one because the (second) change is not yet particularly frequent.

Keywords: *affix-hop*, *features*, *modal*, *modal cycle*, *perfect*

## 1. Introduction<sup>1</sup>

Fischer (2003: 20) coins the term ‘modality cycle’ to describe the changes from a main verb to a deontic and epistemic modal and a later renewal of the deontic modals, such as *must*, by semi-modals like *have to*. Gergel (2009) uses the ‘modal cycle’ for the change from adverb *rather* to modal, and I too will be using the term ‘modal cycle’, but my main emphasis is on auxiliaries. I will argue that, in addition to the well-known shift to semi-modals, there is another change going on relevant to the modal cycle, namely a new modal ending in *-a*, making core modals and semi-modals more uniform in form but not necessarily syntactic behavior. These new modals often appear as *musta*, *shoulda*, *mighta* and can be accompanied by a separate perfect auxiliary *have*. They originally include modal and perfective features but, for some speakers, come to select an infinitive instead of a participle.

These changes can be seen in terms of a dynamic between economy and elaboration or, as von der Gabelentz (1901: 256) put it, language history moves between comfort and clarity. The first stage, where *-a* cliticizes, involves comfort, and the second stage, where *have* is added, clarity. The reduced *have* auxiliaries are heads in the syntax and encliticized post-syntax. Because speakers hear them as one unit with the modal, reanalysis is taking place. The modal cycle involves a change in the features involved in affix-hop, a phenomenon to ensure that the verb that follows an auxiliary has the right form (infinitive or participle).

The data in this paper come from corpora of spoken and written English (COCA and iWEB), Google searches, and Twitter. For native speaker judgments, I rely on speakers of American English. As Leech et al. (2009: 11) write, “American English reveals itself to be slightly more advanced in shared historical developments”, but this development is also occurring elsewhere. I consider the various forms of modal and *have*, such as *-a*, *-ave*, *-ve*, *-av* and *-of* (written together or separately), variants. It is often hard with spoken data to decide which of the forms is in fact used. I will disregard frequent regularizations of the past and past participle (e.g. *I went/have went* and *I gone/have gone*). The change described in this paper is an incipient one so the data are analyzed from a qualitative rather than quantitative perspective.

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The outline is as follows. In section 2, I provide some background to modals and their history and, in section 3, I introduce the new modals. In section 4, I propose a structure for the newly emerging class of *mighta*, *coulda*, *woulda*, *shoulda*, and *musta*, using feature checking through minimal search. Section 5 is a conclusion.

### 2. Changing modals

In this section, I present some background on the types of core modals, and how they have been described as in decline, and of the semi-modals, and how they are seen to be on the increase. This set of changes has been regarded as the modality cycle by Fischer (2003). In the remainder of the paper, I will compare core modals to what can be seen as a new type of modal and will later argue that that too is a cycle.

As is well-known (Traugott 1972, Lightfoot 1979), the core modals, i.e. *may*, *might*, *will*, *would*, *can*, *could*, *shall*, *should*, and *must*, have changed from verbs with dynamic modality to deontic and epistemic auxiliaries. All stages are already present in Old English: verbal *cunnan* ‘know’ and *wille* ‘want’ in (1), deontic *motan* ‘be allowed to’ in (2), and epistemic *mihte* ‘might’ in (3), all taken from the DOE Corpus.

- (1) *Ic sceal hraðe cunnan hwæt ðu us to duguðum gedon wille.*  
I must swiftly know what you us to benefit do want  
‘I must know quickly what you want to do to benefit us.’ (Andreas 341, Vercelli Book)
- (2) *No þe laðes ma þurh daroða gedrep gedon motan.*  
Not you harm more through spear stroke do may  
‘No more injury will they be allowed to do to you through the stroke of darts.’  
(Andreas 1443, Vercelli Book)
- (3) *Dis mihte beon geseald to myclum wurþe & þearfum gedæled.*  
this might be sold for many worth and poor given  
‘This might have been sold for much and given to the poor.’ (Corpus Christi MS, Matthew 26.9)

The core modals in English originate in verbs of motion, ability, volition, and intention that ‘invite’ certain inferences of futurity and possibility (e.g. Traugott 1972; Traugott & König 1991). In generative terms, ambiguous situations would be reanalyzed with fewer features, e.g. the volition and future features of *will* would become reduced to future only as, for instance, in Roberts & Roussou (2003) and van Gelderen (2011).

Modern English has nine core modals, namely *may*, *might*, *will*, *would*, *can*, *could*, *shall*, *should*, and *must*. They can be classified as epistemic, deontic, and dynamic (Palmer 1986: 102–3); the latter two are also known by the term root modal. The epistemic ones have been regarded as raising verbs and the deontic and dynamic ones as verbs with control complements (along the lines of Ross 1969). Epistemic modals occupy a rather high position in Cinque’s (1999) hierarchy and are speaker-oriented while root modals are housed in lower positions and are agent-oriented. All core modals undergo Subject Auxiliary Inversion (SAI), i.e. they move to T and from T to C, as will be shown later, and the affix that goes on the verb to their right is infinitival.

The core modals have a complex set of meanings, which Quirk et al. (1985: 219–37) list for each modal separately. All include a root meaning, e.g. permission with *may/might*, and an epistemic one, e.g. possibility with the same *may/might*. The exception in Quirk et al. is *shall*, which is only deontic. Some have a third meaning and are verb-like, namely the dynamic *can*, *could*, *may*, and *dare*. Varieties of English differ in which of the core modals are root and epistemic (Dollinger 2005) and how frequent each modal is (Tagliamonte & D’Arcy 2007).

As for recent changes in the modal system, Leech (2003: 223) writes that “English modal auxiliaries as a group have been declining significantly in their frequency of use”. Leech’s corpus analysis

looks at modals around the years 1961 and 1991. His data show a decline of 10% over the 30-year period, but modals are not all acting in the same way, e.g. *may* increases its epistemic use but *should* does not. Leech looks for a possible increase in the use of semi-modals. This loss of core modals and increase of semi-modals is also mentioned by Fischer (2003), who sees the semi-modals as replacing the deontic ones. The increase occurs with deontic *have to*, *need to*, *want to*, and *used to* but at different rates. Leech et al. (2009: 78) argue that the picture is more complex and that core modals still outnumber semi-modals. The shift to semi-modals has been attributed to a shift towards more colloquial language (Myhill 1995, Leech 2003, Leech et al. 2009). The core modals are in decline in both American and British English, according to Leech et al. (2009) and Leech (2011). See Figure 1 for American English.

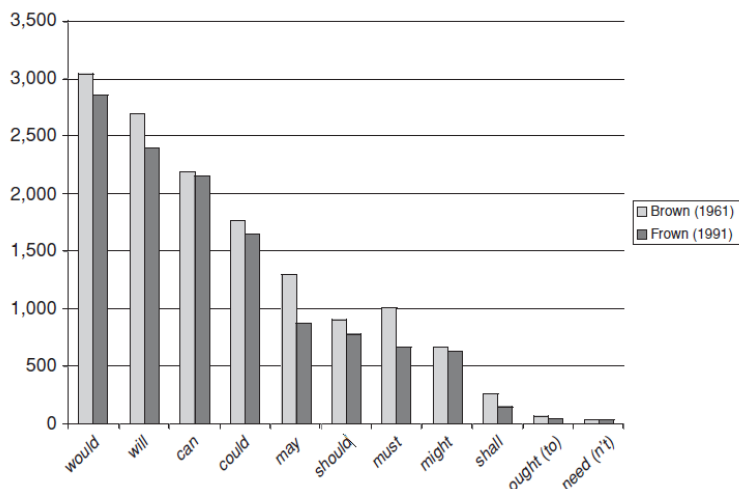


Figure 1: Modals in American English (Leech et al. 2009: 74)<sup>2</sup>

This loss is true for both deontic and epistemic modals and there is a trend towards monosemy (Leech et al. 2009: 90). The class of increasing semi-modals, e.g. *have (got) to*, *need to*, and *want to*, are often rendered as *hafta*, *needa*, and *wanna*. These do not move to T or C (cf. \**Hafta I go?*) and phonologically look like the modal with the perfect auxiliary as *mighta*, *coulda*, *woulda*, *shoulda*, and *musta*. The raising verbs *seemta* and *liketa* are also seen as semi-modals, expressing modality, ending in *-(t)a*, and not moving to T or C. Bolinger (1980: 297) adds many more to this list, noting that “[t]he moment a verb is given an infinitival complement, that verb starts down the road of auxiliariness.” Quirk et al. (1985: 137) provide a continuum of the stages between a main verb and a modal, as presented in Figure 2.

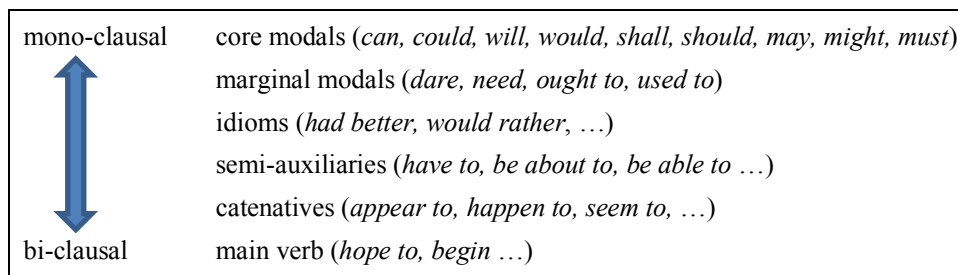


Figure 2: Continuum (adapted from Quirk et al. (1985: 137))

<sup>2</sup> The Brown Corpus was created in 1961–64 and totals one million words of written language published in 1961; the Frown Corpus was created to represent the language of 1991 matching the size and text types of the Brown Corpus.

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Section 2 has provided some background to the changes that have been identified in the literature as affecting the modals: a loss of core modals and increase in semi-modals. In the next section, I provide data on a different set of changes, not yet identified before.

### 3. The new modals

There are new variants of the core modals that end in *-a*, namely *mighta*, *coulda*, *woulda*, *shoulda*, and *musta*, and in variants of *-a* like *of*. These auxiliaries are starting to be their own class of modals (for certain speakers), because they can be followed by ‘redundant’ *have*-auxiliaries and, for some speakers, by forms other than past participles, namely by infinitives, and are renewing the core modals. These stages are represented as (a) through (d) in Table 1 where I’ve also indicated the type of modal, if they move to T and C, and the change to be argued for later in the paper.

a.	I might have seen it.	EM	T/C	
b.	I mighta seen it.	EM	T/*?C	Economy
c.	I mighta have seen it.	EM	T/C	Renewal
d.	I mighta see it.	DM	T/C	Reanalysis

Table 1: The four stages of the New Modal Cycle

The reduction of the auxiliary *have* before past participles, i.e. stage (b), has occurred since the 14<sup>th</sup> century, as (4) shows.

- (4)
- a. *þat wald a don me o mi lijf*  
that would have done me of my life  
‘that would have taken my life’ (a1300, Cursor Mundi, Cotton 5284)
  - b. *Syr, in good fayth Y am sory therefor, for and Y had west that ye would a taked so sor y*  
‘Sir, in good faith, I am sorry for it, if I had known that you would have taken it so badly’  
(Cely Letters, William Maryon, 1480)
  - c. *there xuld not a be do so mykele.*  
‘There should not have been done so much’  
(Paston Letters, I, #205, anno 1469, Margaret Paston)
  - d. *þat he myght an sowlde all yowr woll*  
‘that he might have sold all your wool’ (Cely Letters, George Cely, 1478)

In the stage of (4), i.e. when change (b) is starting, the modal and *-a(ve)* are still analyzed separately, witness (5a), the continuation of (4b), where *would* moves to T, and (5b), where the modal moves to C without the *a*.

- (5)
- a. *Y would nat a wreten so vnto you, nat and I schuld a gette therbey xx nobelys ...*  
‘I would not have written to you that way ... and I should have gotten 20 nobles thereby’  
(Cely Letters, William Maryon, 1480)
  - b. *and so myght Y a done syn I come vnto Calles*  
‘and so might I have done since I came to Calais’ (Cely Letters, 22/39 George Cely, 1478)

The current stage of English has counterparts to (4ab), as shown in (6) to (10), where a modal that is contiguous to *-a* is grammatical.

- (6) This is like a glimpse of the world America **coulda built** for itself (Twitter 2020)

- (7) They **shoulda** never **let** us know how much it bothers them (Twitter 2020)  
 (8) Yeah I think I **musta seen** the same one. (Twitter 2020)  
 (9) I think he **mighta had** a breakthrough in understanding (Twitter 2020)  
 (10) The memories I **woulda made** with these dudes if I knew (Twitter 2020)

Current English has no equivalent to (4c) and (5ab). This is shown in (11): in (11a), the modal that is separated by a negative from *-a* is not grammatical and, in (11a), the modal that is in C without *-a* is also not grammatical. These show that the modal and *-a* are inseparable in Modern English.

- (11) a. \*This **should not a** been done.  
 b. \*So **might I a** done.

The contraction in (6) to (10) occurs with all epistemic modals in spoken and written English. The full pronunciation of *have* is unusual so stage (b) of Table 1 is definitely reached.

(11a) shows that movement to T is not possible across Neg leaving *-a* behind but it is taking *-a* along, as (12a) shows. The modal ending in *-a* moves to T across the negative in (12) and across the modal adverb in (13).

- (12) a. if only he **woulda not** done one more caper.  
           (<https://books.google.com/books?isbn=1257357123>)  
 b. he just **coulda not** told the media about his disappointment with his teammates  
           (Twitter 2018)
- (13) a. she **coulda probably** done better with him, you know.  
           (<https://books.google.com/books?isbn=1136707417>)  
 b. He **coulda probably** written us ...  
           (<https://books.google.com/books?isbn=1441122168>)

As with core modals, movement to T in (12) is obligatory with a negative but not across a modal adverb, as (14) shows.

- (14) We **probably coulda** handled all that (COCA fiction 2016)

However, movement to C, as in (15a), is very infrequent according to a Google search and native speakers that I have consulted find it awkward; it is much more acceptable with an additional *have*, as in (15b).

- (15) a. what **coulda i done** better to prevent this from happenin (Twitter 2014)  
 b. all you can do is think, what **coulda I have done** better (Twitter 2010)

This ‘doubling’ of modals ending in *-a/-of* by *have*, as in (16) to (20), represents stage (c) in Table 1 and is judged fine by many native speakers (of American English) with all five of the ‘new’ modals.

- (16) a. And it’s not like I **coulda not have** killed a gastropod. (2015 <https://steamcommunity.com/app/105600/discussions/0/530646080846937998/>)  
 b. I’m not really mad about it, personally I think Madden and Fifa **coulda have been passed on** (COCA Web 2012)
- (17) a. I **shoulda** just **have** kept her as a friend. (Twitter 2019)  
 b. There is no such thing as a respiratory heart rate. Oh. Maybe I **shoulda have** went to Columbia (COCA TV 2003)
- (18) a. This research **musta have** been made just after sehri. (Twitter 2018)

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- b. Guy comes in here with 2 posts and says the Guvnor he thought was a good guy...  
hmmmm.... you **musta have not watched** this show before, seen any previews either that  
or.. troll.. or worse.... (COCA Blog 2012)
- (19) a. it **mighta have** created the trolling (Twitter 2017)  
b. Any idea of who he **might of have** been planning to see? (COCA TV 1990)
- (20) a. **Woulda have** missed it if not for this tweet! (Twitter 2018)  
b. You **would of have** slept during anyway (COCA TV 1997)

With the doubling, there is evidence of movement to T in (16a) and to C, as mentioned for (15b), and shown for more examples in (21). Their grammaticality is confirmed by some native speakers. This shows the modal and *-a* are now a real unit.

- (21) a. But What Message **Coulda I Have** Sent Behind That (Twitter 2020)  
b. How **coulda I have** been so stupid to trust the experts! (Twitter 2019)  
c. **Shoulda I have** a chimichanga or a subway sandwich (Twitter 2019)  
d. what **coulda he have** done to prevent someone from just walking tho?  
([https://www.reddit.com/r/.../  
to the person who walked out on their 700 tab](https://www.reddit.com/r/.../to_the_person_who_walked_out_on_their_700_tab))  
e. What **coulda I have** been thinking of (Twitter 2013)

The doubling in (16) to (20) paves the way for a new development, namely for the modal ending in *-a* (*-of*) to now be followed by an infinitive with a non-perfect reading. That is stage (d) in Table 1. The appearance of an infinitival form of a lexical verb to the modal's right instead of a participle strikes most native speakers as odd but occurs in corpora and social media for all of the five modals, as in (22) to (26). In these, a perfect auxiliary 'have' is not implied and some modals are deontic, e.g. (23cde) and (24c). This is evidence for a new modal class, again in varieties of American English.

- (22) a. I **woulda be** mad if I was going to heaven and y'all bring me back (Twitter 2019)  
b. **Woulda** do good wid 2 barbeque zingers right now. (Twitter 2019)  
c. Hah, do ye think that I **woulda** be doing all for yous if I didn'ta care?  
(2008 <https://books.google.com/books?isbn=0595486738>)  
d. Don't know which country I **woulda** have to go hide for Berris not to find me.  
(2011 <https://books.google.com/books?isbn=1851687629>)  
e. Yes, I **woulda** agree its time for Laura Hoffmiester to get off the council (iWEB)
- (23) a. i **shoulda** be in Las vegas (Twitter 2019)  
b. **Shoulda** be able to tap it the same as the leap card machine. (Twitter 2019)  
c. Kylie you **shoulda** go have a feast! (Twitter 2019)  
d. He **shoulda** be the one taking yous home.  
(<https://books.google.com/books?isbn=0595607691>)  
e. *I Shoulda Be On My Merry Way*  
'I should be on my merry way.' (lyric title, Earl Hines)
- (24) a. wish my dawg **coulda** be here. (Twitter 2019)  
b. She **coulda** be toxic as hell lol (Twitter 2019)  
c. Then... playing with the shots you **coulda** obtain " certain " effects (iWEB)  
d. How you **coulda** ever face her and say ... (COCA 2017 Fiction)
- (25) a. I **mighta** get a backpack instead, it'll make ... (Twitter 2018)

- b. Look like a regular beating to me.. and ya never know what he **mighta** do or say (Twitter 2017)
  - c. u **mighta** see me smilin but em cryin inside. (Twitter 2015)
  - d. the fact that we **MIGHTA** go to disney for ashleys birthday in november is filling me up with joy and excitement (Twitter 2017)
- (26)
- a. hello **musta** see you feb 20 (Twitter Jan 2018)
  - b. And stop altering my post, you **musta** think is a joke, I'm very serious.
  - c. You **musta** think that ...? (iWEB)
  - d. Manholes **musta** be constructed of two-course brick masonry laid in cement mortar ... (1911, City Council of the City of Bloomington, Illinois)

The new modals also occur with negatives, as in (27) to (31), which shows movement from M to T. (There are actual hashtags on twitter with #couldanot and #shouldanot). It also moves to T across an adverb, as (32) shows.

- (27) What would you attempt to do if .ou knew you **wouldanot** fail? (Twitter 2016)
- (28) Today I learned two valuable lessons: 1) Petting an animal can lower your heart rate. 2) That animal **shouldanot** be a .olverine. (Twitter 2017)
- (29) "What would you attempt to do if you knew you **couldanot** fail?" Robert Schu.ler (Twitter 2016)
- (30)
- a. I **mightanot** be the same But that's not important (Twitter 2016)
  - b. Your customers **mightanot** be on Twitter. Use raplemf to find them. (Twitter 2016)
- (31) You **mustanot** lose faith in humanity. (Twitter 2017)
- (32) Harden **coulda** probably be a pinch runner for the Astros (Twitter 2015)

These modals also have started to move to C, as (33) shows. Although this use is rare in corpora, on Google, and on Twitter, native speakers who accept modals in *-a/-of* don't think these are ungrammatical.

- (33)
- a. When **shoulda** I expect your call? (Twitter 2019)
  - b. If you can change anything about you what **woulda** it be? (Twitter 2020)
  - c. What "**shoulda**" he be doing? (Carol Adams, Living Among Meat Eaters)

In this section, I have shown that *mighta*, *coulda*, *woulda*, *shoulda*, and *musta* may be forming a new class of modal auxiliary. This change is possibly helped by the analogy to *hafta*, *oughta*, *wanna*, *seemsta* and *liketa*, although the new modals move to C and T, unlike the semi-modals. For many speakers, an additional *have* is possible, as in (16) to (20), and, for some, the modal selects an infinitive to its right, as in (22) to (26). So far, I have mainly focused on modals ending in *-a* and, before turning to the next section, which examines the structure of the various modals, I'll mention the other variants.

I haven't provided examples of other forms of the modal contracted with *have*, i.e. those in *av* and *of*, as in (34) and (35). Some of these are written as one and some as two.

- (34)
- a. he **wouldav** dropped it anyway (Twitter 2015)
  - b. he **should av** called her to order (Twitter 2018)
  - c. Chicken! .. the least u **could av** done was apologize. (Twitter 2019)
  - d. so i **mightav** just ruined mine and elainas friendship. (Twitter 2017)
  - e. U **mustav** screamed on top of your voice. (Twitter 2018)

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- (35) a. They **wouldof** crucified you if not for this being exposed. (Twitter 2019)  
 b. She **should of** kept her mouth closed (Twitter 2018)  
 c. I wish Erick didn't have work today so I **couldof** had my first New Years kiss. (Twitter 2018)  
 d. I THINK I **MIGHT OF** EXAGGERATED ?! (Twitter 2019)  
 e. he **must of** had the loneliest Birthday in the lab (Twitter 2019)

For the purposes of this paper, I consider *av* and *of* variants of *-a*, but there are no doubt regional or other preferences. As expected, there are also instances of doubling with these forms, as in (36).

- (36) a. He inconsistent as hell. **shouldof not have** been that #3 pick years ago. (Twitter 2012)  
 b. @TaskVoris I **shouldav have** beaten you that last game. (Twitter 2012)  
 c. she **couldof** not even **of** gotten you anything, so dont be ungrateful! (Twitter 2012)

I have not found many of these with the infinitive following, as in (37).

- (37) a. I'm a big fan of converting one item to do another job. You **shouldof see** what I do with Velcro (Twitter 2017)  
 b. Wen i saw him today all i **couldof do** was hugg him. (Twitter 2012)

In COCA, the numbers of the variants are as in Table 2. The transcription program must only recognize *-a* and *-of*, not *-av* because all the instances of *-(a)ve* are from fiction.

	MODAL <i>a</i>	MODAL( <i>a</i> ) <i>v</i> ( <i>e</i> )/ MODAL ( <i>a</i> ) <i>v</i> ( <i>e</i> )	MODAL <i>of</i> MODAL <i>of</i>
might	54	5	42
should	309	6	62
could	277	13	178
would	254	26	111
must	173	6	115

Table 2. New modals in COCA (October 2018 version)

From this table, it seems that the *-a* form is slightly more frequent. The question is how reliable this is if most of this is from spoken data, so interpreted and transcribed by a third party. Doing the same only for spoken data results in the numbers in Table 3. The much larger iWEB-corpus is based on texts from websites from the English speaking world and here the forms in *(-)of* predominate. I will assume they are just variants of the same renewed modal although at some point one of these might become more prevalent.

	MODAL <i>a</i>	MODAL <i>of</i> /MODAL <i>of</i>
might	54	6
should	24	12
could	18	28
would	14	28
must	3	11

Table 3. New modals in the spoken COCA (March 2019)



Section 3 has argued that modals followed by the perfect auxiliary *have* undergo a number of changes, as laid out in Table 1. Modals followed by a perfect usually have the perfect reduce to *-a* but this ‘contracted’ form can be followed by an ‘additional’ *have*. That stage (in (16) to (20)) represents a pragmatic strengthening. Spurred by the *-a* modal having an infinitival *have* to its right, there are also *-a* modals followed by an infinitive rather than a participle, as in (22) to (26). The position of the new modal varies: the core modal (without *-a*) moves to T and C, the one ending in *-a* with a participle following moves to T but not generally to C (cf. the discussion around (12) and (15)), but the one with an infinitive does (cf. (27) to (33)). I’ll now turn to the structure and feature composition of the old and new modals.

#### 4. The structure of modals

##### 4.1. The position of modals

Dynamic and deontic modals, i.e. root modals, have been argued to behave differently from epistemic ones with respect to the other auxiliaries they combine with, as shown in Table 4 (cf. Quirk et al. 1985: 235; Coates 1983; Abraham 1998; 2002; Eide 2005: 299). The complements of root modals are typically eventive and not stative, and that includes the perfect and progressive; epistemics can take all complements.

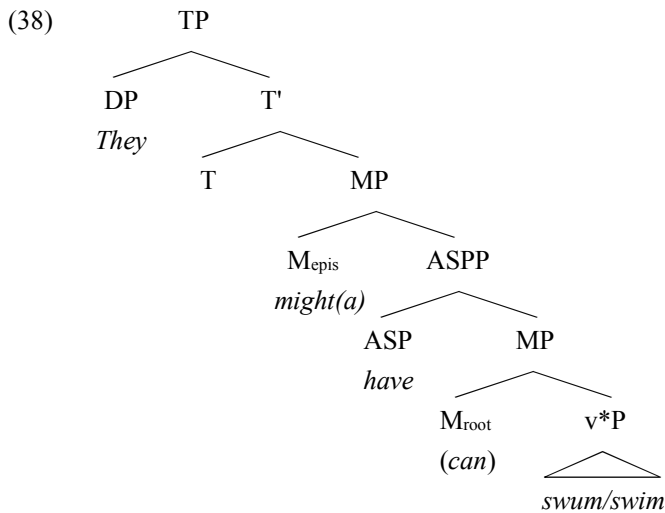
	Root	Epistemic
<b>Eventive</b>	I can/must/may swim	I might swim
<b>Perfect</b>	*I can/must/may have read that book	He must have read that book
<b>Progressive</b>	*I can/must/may be swimming	He must be swimming
<b>Stative</b>	*An orange must/may be healthy i.e. someone forces/allows an orange to be healthy	He must be healthy

Table 4. Complements to deontic and epistemic modals

The structural reason for the complement choice of Table 4 is that dynamic and deontic modals are base generated lower than the epistemic ones (see also Butler 2003): only the epistemic ones can be followed by aspectual auxiliaries. This accounts for the fact that the new modals are only epistemic, e.g. in (16) to (20) and (22) to (26), because they are the only ones complemented by the auxiliary *have*.

There are a number of models to represent high and low modals: Cinque (1999), Ernst (2002), Butler (2003), and Hacquard (2010), and I present a synopsis in (38). In standard English, only one modal can be present, so either the top one is or the lower one. Both old and new modal move to T and to C, as we’ve seen for the new modals in the previous section.

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Dynamic modals are the most verblike, i.e. the lowest in the structure, and I leave in the middle whether they are in V or in a low M, as in (38).

The new modals *mighta*, *coulda*, *woulda*, *shoulda*, and *musta*, i.e. the modals ending in *-a*, represent a contraction of the epistemic modal and the perfect auxiliary *have*. As such the auxiliary or verb following will be a past participle, as in (6) to (10). However, as shown in section 3, a change is happening and the reduced perfective auxiliary is being reanalyzed together with the old modal as a new modal and a ‘redundant’ *have* can be added. The verb following is then in the infinitival form and the modal can be deontic as well as epistemic. Sentence (38) misses the features and I now turn to those.

### 4.2 Feature Checking

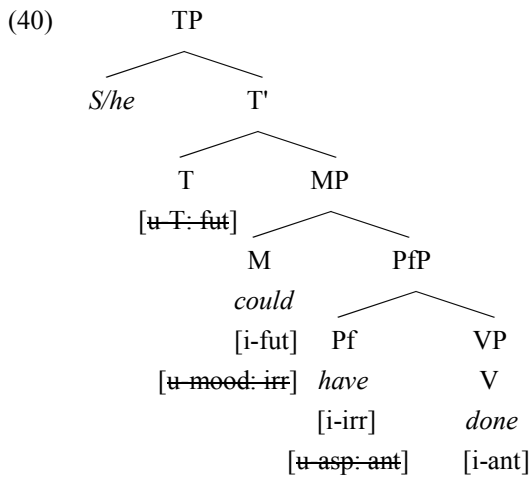
The checking system used for affix-hop is for the uninterpretable (i.e. unvalued) features of the higher head to require certain features of a lower head, here referred to as interpretable (as in Chomsky 1995), i.e. valued (as in van Gelderen 2016). This system uses Minimal Search, a third factor principle. One of the motivating ideas for checking from a higher u-F position to a lower i-F one is that interpretable features are more easily acquired in L1 (Radford 2000; van Gelderen 2011) and L2 (Tsimpli & Dimitrakopoulou 2007) acquisition and retained in situations of language contact (Walkden & Breitbarth 2019). If the features on the verb are what make a tense or aspect interpretable, that explains why participles are acquired early and why the auxiliaries that accompany them are acquired later.

Radford (2000), in one of the rare works that talks about features in first language acquisition, similarly argues that the verb combined with the *-ing* affix has interpretable aspect and that these are learned first. Looking at Allison at age 2 year and 10 months (Bloom 1973), we find bare verbs, as in (39a), present participles, as in (39b), and past participles, as in (39c).

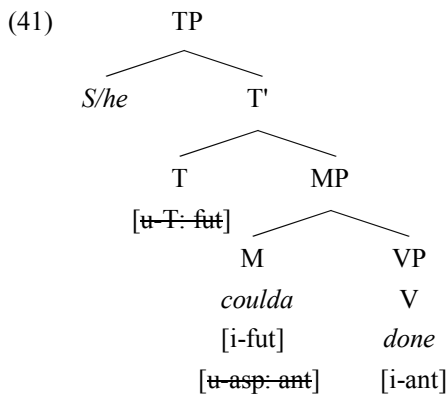
- (39)
- a. pull, hurt, eat, ride, drive, get, tumble, sit squeeze.
  - b. wiping baby chin, shaking, peeking Mommy, eating, squeezing, screaming, walking
  - c. I guess it broken (from Allison 2;10, Bloom 1973)

A modal and perfect auxiliary are represented in (40). The T needs to check its unvalued features through minimal search and finds the modal which has future/irrealis features as part of its feature buildup. The modal in turn needs an infinitive which is represented by its unvalued mood features. The perfect auxiliary is an infinitive in form, represented by the interpretable irrealis features, but needs a participle following it.

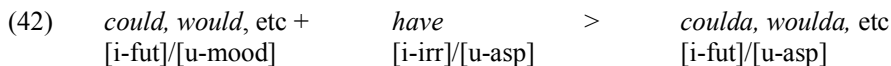
The unvalued aspect features search for this and find it in the participle which is valued for anterior. The modal in M may move to T in (40) but need not.



In sentences with a new modal, the *-a* ending on the modal is a contracted *have* but is still involved in checking the anterior aspect on the participle. This represents stage (b) in Table 1. A tree for these appears in (41) where *coulda* is not checking for an infinitive to its right but for a participle. The interpretable irrealis features of the infinitival *have* have been replaced by the interpretable future features of the modal. They value the uninterpretable ones on T and keep the semantics of a modal as being unrealized.



The reanalysis of this modal is to one that needs a past participle to its right instead of an infinitive; in terms of features, the change is provided in (42). Reanalysis occurs when speakers select items from the lexicon with a (slightly) different feature content. If they think of the modal followed by *-a* as selecting a participle, the features on the modal will be [u-asp] instead of [u-mood].

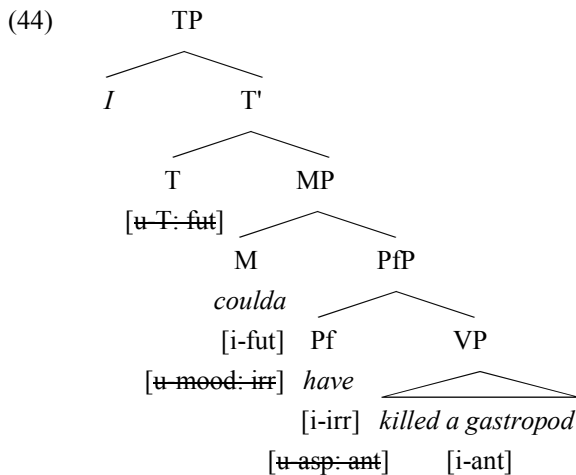


This change is one of Feature Economy, namely the formal mood features are eliminated from both the probe and the goal. Semantically, the modal keeps its necessity or possibility features and it is, of course, still marked with interpretable future features.

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The next change, stage (c) in Table 1, is where the modal ending in *-a* has lost the connection with the present perfect, and where an additional *have* appears, as in (43). A tree for these appears in (44), leaving the NegP out for simplicity.

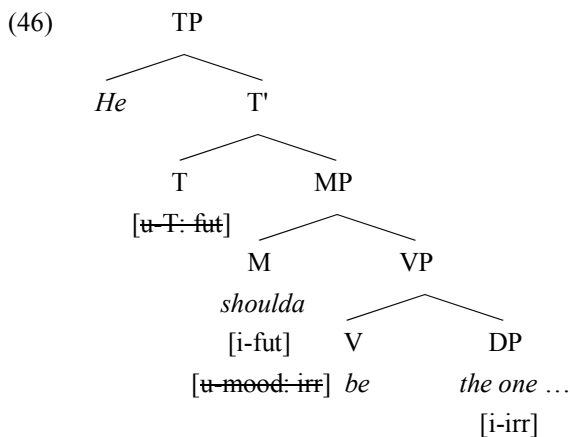
(43) And it's not like I **coulda not have** killed a gastropod. (= (16a))



This construction has reintroduced the formal mood features because of the additional infinitive *have* and has strengthened the mood features in the new modal. This is what Jespersen (1921: chapter 14, §6) describes as a ‘tug-of-war’ between economy and innovation and von der Gabelentz (1901: 256), as mentioned in the Introduction, as between comfort and clarity. Stage (c) is one of renewal.

The last stage described in this paper, (d) in Table 1, is where another auxiliary or main verb can occur, as in (45), with a tree as in (46).

(45) *He shoulda be the one taking you home.* (= (23d))  
 ‘He should be the one taking you (plural) home.’



This last change is shown in (47): *coulda*, *shoulda*, etc have become full modals, deontic as well as epistemic.

- (47) a. MODAL + *have* > b. MODAL + *a* (+ participle) > c. MODAL-*a have* > d. MODAL-*a* (+ infinitive)  
 [i-fut]/[u-mood]      [i-fut]/[u-mood]      [i-fut]/[u-asp]      [i-fut]/[u-mood]

The introduction of the new modals in (6) to (10) and the loss of mood features through economy prompts some speakers to renew the bleached construction by ‘doubling’ *have*, as in (16) to (20), and this, in turn, provides speakers with examples of an infinitive after the new modal, not connected with a perfect, as in (22) to (26).

**5. Conclusion and future research**

There are several groups of modal auxiliaries in English: the core ones, the semi-modals including some of the raising and control verbs, the epistemic modals in *-a* that select a participle, and the new modals in *-a* that have been reanalyzed as core modals because they require an infinitive on their right. I have summarized their properties in Table 5. Even though the new modals might look like the semi-modals in that both often end in *-a*, their syntactic behavior is quite different, and semi-modals still behave like main verbs. I have left unexplored why certain modals in *-a* are less likely to move to C (cf. the discussion around (15)).

	to T	to C	DM/EM
core modals	√	√	both
semi-modals	x	x	DM (EM)
modals (+ <i>have</i> )	√	√	EM
modal- <i>a</i> (+participle)	√	?	EM
modal- <i>a</i> (+infinitive)	√	√	both

Table 5. Summary of the modal classes

The main goal of the paper has been to describe the new developments involving modals, especially those chronicled in (16) to (20) and in (22) to (26). These can be seen in the light of the linguistic cycle, as in von der Gabelentz (1901), van Gelderen (2011), and many others. As lexical and grammatical forms grammaticalize, they shorten phonologically and lose formal mood features. That represents stage (b) of the cycle; stage (c) shows pragmatic strengthening.

Limitations involve the nature of the data. It is difficult to find out the circumstances, emphatic or not, in which these utterances are written and therefore hard to know why the renewal stage is set in motion. As for the authenticity of the twitter examples, I have used only those that look like they are by native speakers to me (e.g. who use *yous* and also regularize the participles into preterites). For native speaker intuitions, I have used American speakers but, in the introduction, I mention that the development is happening elsewhere too. For instance, there are over 300 instances of *have* doublings after an adverb, as in (48) to (50), in the BNC.

- (48) I think it **would have still have caused** an awful lot of heat and an awful lot of smoke  
 (BNC spoken)
- (49) So for instance you **may have already have** a relational database management system.  
 (BNC spoken)
- (50) If Lineker had stayed, Tottenham **would have not have received** any fee for him  
 (BNC newspaper)

This means the first *have* is probably also phonologically reduced and on its way to being absorbed by the modal.

## A NEW MODAL CYCLE

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