

**TENSE, ASPECT, AND MODALITY:
THE TEMPORAL DIMENSIONS OF ENGLISH MODAL VERBS**

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Abstract: *The present paper explores the interaction between modal verbs and the grammatical categories of time, tense, and aspect in English. Modal verbs do not inflect for tense in the conventional sense; however, they usually encode temporal meanings such as futurity (will), habituality (would), and counterfactuality (might have), often in combination with perfective and progressive constructions. The study distinguishes between epistemic and deontic modality and examines how they constrain or align with specific tense-aspect configurations. Special emphasis is placed on the role of modals in expressing futurity, counter factuality, and habituality, as well as their compatibility with the perfective and progressive aspect. The analysis demonstrates that modals serve as essential elements in the interpretation of English clauses as they influence not only the temporal placement of events but also the modal meaning they convey.*

Keywords: *modality; perfective aspect; epistemic modality; deontic modality; progressive*

1. Introduction

The interaction between tense, aspect, and modality (TAM) represents a fundamental axis of meaning in the English verbal system. As Comrie¹ succinctly puts it, tense locates situations in time, aspect presents how a situation unfolds internally, and modality overlays the speaker's attitude or stance toward the reality status of a proposition. In English, modal verbs have attracted particular scholarly attention because they encode modality in ways that simultaneously influence temporal and aspectual interpretation (cf. Palmer²).

The conventional characterization of English modals as defective auxiliaries is well established (cf. Quirk et al.³, Huddleston & Pullum⁴). Unlike lexical verbs, modals cannot inflect for tense beyond their inherited 'past' forms, nor can they appear in participial or infinitival forms. However, to regard this defectiveness purely as a morphological accident neglects its systematic grammatical function. Palmer as well as Coates⁵ argue that the absence of non-finite forms compels modals to occur only in finite contexts, ensuring that modality is anchored to the illocutionary force of the clause. In other words, modals are structurally 'defective'

¹ Comrie, Sterling. *Tense*. Cambridge: Cambridge University Press, 1985, p. 1, 15-16.

² Palmer, Frank Robert. *Mood and Modality*. Cambridge: Cambridge University Press, 2001, pp. 1-4.

³ Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, Jan Svartvik. *A Comprehensive Grammar of the English Language*. London and New York: Longman Group UK Limited, 1985, pp. 137-140.

⁴ Huddleston, Rodney and Geoffrey K. Pullum. *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press, 2002, pp. 93-97.

⁵ Coates, Jennifer. *The Semantics of the Modal Auxiliaries*. London: Croom Helm, 1983, p. 20-23.

precisely because they are functionally indispensable operators of speaker commitment.

The restriction against stacking modals further underscores their syntactic exclusivity: grammar prevents modals from being subordinated to other modals, reflecting an underlying principle that modal force in English cannot be layered through morphological means but only through periphrasis (cf. Bybee et al.⁶, Huddleston & Pullum). This supports a view that English encodes TAM categories not through morphological synthesis but through carefully regulated analytic structures.

A key distinction in modality that will frame our analysis is between deontic and epistemic readings of modals. Quirk et al. divide modal meanings broadly into two spheres: intrinsic modality versus extrinsic modality. Intrinsic modality (sometimes called ‘root’ modality) covers meanings where the modal “involves some kind of human control over events” – this includes deontic notions of obligation, permission, and volition as well as dynamic ability/volition. Extrinsic modality covers meanings that involve “human judgment of what is or isn’t likely, necessary, possible etc. in terms of truth and knowledge”⁷ – essentially the epistemic realm of possibility and necessity relative to the truth of propositions. Coates and other semanticists stress that modals have a range of meanings best understood as a continuum or network rather than completely distinct senses, with certain core meanings and more marginal ones⁸. She uses a “core meaning” approach: e.g. *must* has a core meaning of necessity, which can be interpreted epistemically (logical necessity, i.e. deduction) or deontically (obligation) depending on context and co-text.

The relevance of this distinction for tense and aspect is that epistemic and deontic modals interact with temporal reference in different ways. Generally speaking, epistemic modals have scope over the entire proposition (including its time reference), while deontic modals often situate the modality within the time frame of the event. In practical terms, when a modal is used epistemically, the time reference of the main predicate can be past, present, or future, but the modality is understood as the speaker’s present evaluation of that proposition. When a modal is used deontically, the modal typically applies at the time of utterance or the time of reference to prescribe or allow an action in a given time frame. In formal semantic terms, tense takes scope over modality in deontic readings, but modality takes scope over tense in epistemic readings.

Therefore, the literature confirms that English modal verbs have an unusual relationship with tense: their inflected forms do not reliably mark time but, instead, can mark modality subtleties. As Pop (2022) notes, ‘they may convey more consideration or politeness as well as greater tentativeness in comparison with their

⁶ Bybee, Joan, Revere Perkins, and William Pagliuca. *The Evolution of Grammar: Tense, Aspect, and Modality in the Languages of the World*. Chicago: University of Chicago Press, 1994. p. 256.

⁷ Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, Jan Svartvik. *A Comprehensive Grammar of the English Language*. London and New York: Longman Group UK Limited, 1985, p. 139.

⁸ Coates, Jennifer. *The Semantics of the Modal Auxiliaries*. London: Croom Helm, 1983, pp. 2–12.

present form’.⁹ Only context and auxiliary constructions (like *have* for perfect) determine actual temporal reference.

2. Modal Auxiliaries in Present versus Past Contexts

One of the first temporal dimensions to consider is how English modal verbs distinguish (or fail to distinguish) present and past time reference. As noted above, modals do not inflect for tense like normal verbs. Instead, English indicates the time reference of a modalized proposition through context, or by using modal “pairs” (*can/could*, *will/would*, etc.) and the perfect construction for past events (cf. Binnick¹⁰). The key distinction often comes down to epistemic vs non-epistemic (deontic/dynamic) modality. Epistemic modality expresses the speaker’s judgment about the likelihood or truth of a proposition. By default, an epistemic modal like *must*, *may*, *might*, or *will* in a simple form (modal + bare infinitive) is taken to refer to the time of the proposition being modalized as present or future. For example:

- (1) a. *She must be home.*
- b. *She might be home.*
- c. *By tomorrow, she will be home.*
- d. *She must have left.*

In (1) (a), the epistemic value of *must* implies right now; given what the speaker knows, it is almost certainly true that “she is home.” *Must* indicates a current inference. (b) implies it is possible (as of now) that “she is home” (present time reference of the proposition, whereas in (c), *will* is used to predict a future event (futurity included in the epistemic meaning of *will* as a prediction). It is not a “future tense” in the morphosyntactic sense, but it places the situation in future time. The epistemic modal perfect in (d) refers to a past action (she left) with a present inference about it. Without the perfect, *She must leave* would mean something entirely different (deontic obligation). Therefore, the perfect *have left* shifts the time of the proposition to the past while keeping the modal assessment in the present.

Crucially, one typically cannot use a past form modal for a straightforward epistemic past meaning. For instance, *might* on its own does not usually mean past of *may* in epistemic contexts. Compare:

- (2) a. *It may have rained last night.*
- b. *It might have rained last night.*

The modal verbs in (2) a. and b. have an epistemic value: ‘I acknowledge the possibility that it rained’. Both are actually acceptable and mean roughly the same thing epistemically (a past possibility). But if we remove the perfect, as in

- (3) a. **It may rain last night.*
- b. **It might rain last night,*

the ensuing constructions are not only non-standard but also ungrammatical. This illustrates that to talk about past events epistemically, English strongly prefers

⁹ Pop, Ioan Benjamin. *Grammar of the English verb: from (Primary) Auxiliaries to Past Participles*. Alba Iulia: Editura Aeternitas, 2022, p. 68.

¹⁰ Binnick, Robert I. *The Oxford Handbook of Tense and Aspect*. Oxford: OUP, 2012, p.3

the *modal* + *have* + *V-en* form. In other words, epistemic modality requires the perfect to refer to a specific past event since using a “past form” modal like *might* does not, on its own, convey past time of the event.

There is an interesting exception: *would* in epistemic contexts sometimes refers to past habit or characteristic behaviour – essentially merging epistemic with an implied past perspective. For example,

(4) *Whenever I visited, he would be working in the garden.*

The modal verb in (4) suggests a typical occurrence in the past (one could call this dynamic or descriptive, though it has a flavour of the speaker reflecting on past evidence – “As I recall, it was inevitably the case that he was working in the garden”). This usage of *would* overlaps with the notion of past prediction or expectation. But strictly speaking, it is more of a habitual past marker (the past counterpart of using *will* for present habit:

(5) *He will often work in the garden on Sundays.*

Because epistemic modality often reflects the speaker’s current state of knowledge, even when we talk about past events epistemically, we frequently keep the modal in present form and use the perfect aspect.

As Huddleston and Pullum note, *may* vs *might* are not past vs present in epistemic use; *might* is not employed to indicate past time. The same is largely true for *can* vs *could* in epistemic possibility: *It can’t be true* (present epistemic certainty of impossibility) vs *It couldn’t be true* (also present epistemic, but slightly weaker or more remote in tone, unless in a context like “Back then, it couldn’t be true”, which would then be backshifted use). Many speakers use *couldn’t* as a slightly more tentative version of *can’t* for present impossibility (“Oh, that couldn’t be right...” when hearing something surprising, as a way to say “I strongly doubt that’s right,” functionally similar to *can’t* but a bit softer).

Deontic modality relates to obligations, permissions, and similar concepts often anchored to a particular time frame in the real world. Deontic modals in the present (or with no auxiliary *have*) usually apply to the present-future.

(6) a. *You may leave now.* [permission for the immediate future – essentially from now onward]

b. *You must finish the report by tomorrow.* [obligation concerning the future completion]

c. *We can take one guest.* [ability/permission in a general present sense]

Deontic modals can be felt as “timeless” in statements of rules:

(7) *Guests must remain seated during take-off.*

This rule is not tied to a single time but to any event of take-off.

When we narrate or report obligations in the past, English often shifts to lexical alternatives or modal perfect:

(8) a. *She had to finish the report by the next day.* [past obligation]

b. *He was allowed to leave early yesterday.* [past permission]

c. *I could smoke in my college dorm room back in the 1970s.*¹¹
[past permission]

¹¹ Here *could* is acceptable to use for general permission in the past – dynamic/deontic *could* as general ability or allowedness.

d. *You shouldn't have told her that secret.* [deontic evaluation of a past action]

e. *He could have left at noon, but he stayed until evening.*¹² [dynamic ability or deontic permission]

Deontic *should* and *ought to* are interesting with respect to time. Present *should/ought* typically refer to a current or future obligation/advisability. To speak of a past missed obligation, *should have/ought to have* is used. For a past fulfilled obligation, one would just use *had to* or a similar construction, since *should have* always implies non-fulfilment.

3. Modals and Futurity

Perhaps the most salient temporal use of modal verbs is to express future time. Unlike many languages, English has no inflected future tense; instead, it typically uses the modal *will* (and historically *shall*, in certain contexts) to indicate future events. It is important to clarify, however, that *will* is not merely a tense marker but a modal auxiliary that conveys a blend of futurity and modality. In other words, *will* almost never denotes a “pure” future with absolute certainty; it usually carries an implication of prediction or expectation. As Huddleston and Pullum note, ‘*will* here comes close to being simply a marker of futurity, with the modal component reduced to a minimum. It is not quite zero, however, for the truth of [a future statement] is contingent.’¹³ Our knowledge about future events is inherently less secure than our knowledge of present or past facts, therefore statements about the future intrinsically have a modal (speculative or predictive) quality. For this reason, modern grammars classify *will* as a modal auxiliary. It behaves syntactically like one (e.g. it inverts in questions: “*Will you come?*”; it takes *not* directly: “*I won't go*”; no 3rd person -s). Semantically, *will* conveys a prediction, promise, or intention about the future rather than a fact in the same sense that the past or present tense do.

The prototypical use of *will* is to predict a future event or state.

(9) a. *Winds will reach gale force by tonight.*

b. *This treatment will make you a lot more comfortable.*

c. *We will arrive on Monday, March 18.*

In such statements, *will* places the situation in future time and often indicates the speaker's confident belief in that future occurrence. We interpret these as predictions, some perhaps based on evidence or expectation. In fact, the epistemic flavour of *will* can vary from a strong prediction to a mild conjecture. Compare:

(10) a. **She will be here in an hour.* [confident prediction]

b. *I think she will be here by now.*¹⁴ [deduction]

¹² *Could have left* indicates a past permission or opportunity that existed; it is almost an external perfect usage meaning “it would have been possible/allowed for him to leave at noon”). Without context, *He could have left* might also be epistemic (“maybe he left”), but the addition of *but he stayed* forces the deontic/dynamic reading, clearly referring to an unexercised option in the past.

¹³ Huddleston, Rodney and Geoffrey K. Pullum. *The Cambridge Grammar of the English Language*. Cambridge: Cambridge University Press, 2002.

¹⁴ *Will* is close in meaning to *must*, expressing a deduction: “*She must be here by now*”.

In many contexts, *will* is used in announcing or describing scheduled or inevitable events, though often with an implicit sense of assurance. For example:

(11) *In a few moments we will hear the trumpeter sound the command to trot.*

This sounds like a simple future fact, but it also carries the assumption of a plan or schedule (and is somewhat weaker than saying “*we hear the trumpeter in a few moments*,” which would be using present tense to refer to a scheduled future, a construction known as the “present futurate”).

English also has *shall*, which historically was used for futurity with first person subjects and sometimes for second/third persons to indicate strong determination or obligation. In contemporary usage, *shall* is much less common and is considered more formal or literary. Typically, *shall* can replace *will* for future reference in first person, especially in British English (“*I shall return*”), but even there it often sounds elevated or old-fashioned. Many speakers now use *will* for all persons in future contexts. However, *shall* does survive in legal or official contexts (with deontic meaning) and in offers or suggestions. As a future marker, *shall* is interchangeable with *will* in examples like:

(12) *We shall arrive on Monday,*

though *will* is “much more likely to occur” in modern usage. Aarts notes that *shall* is declining rapidly in usage on both sides of the Atlantic.

It is important to emphasize the modal nature of *will*: it does not simply point to future time, but usually also signals the speaker’s attitude that the event is expected or inevitable. In fact, as Aarts notes, ‘*will* almost never refers purely to future time, typically contributing a modal dimension of meaning’¹⁵. He also argues that because *will* carries this modal meaning and shares syntactic behaviour with modals, it should not be treated as a tense affix but rather as part of the modal system. Many linguists agree: *will* is a modal auxiliary that often functions as a future-time reference device.¹⁶

In terms of epistemic vs. dynamic uses of *will*, grammars often distinguish a few nuances:

(13) *She’ll be at home now.* [predictive (epistemic)]

It expresses a prediction or an inference about the present, a possible meaning being “I assume/guess she is at home by now” (epistemic inference about present).

(14) a. *I will finish this later, I promise.* [volitional (dynamic)]

b. *He will not obey.*

Both examples express willingness or intention, speaker’s will to do something in a. and refusal to obey in b. *Will* has a sense of volition or refusal, which relates to the subject’s will rather than external prediction. This use shades into the deontic when employed with second/third person as a command:

(15) *You will do this immediately!*¹⁷ [deontic obligation]

¹⁵ Aarts, Bas. *Oxford Modern English Grammar*. Oxford: Oxford University Press, 2011.

¹⁶ Some scholars like Salkie (2010) argue *will* is a future tense marker, but the dominant view treats it as a modal with temporal orientation.

¹⁷ When stressed, it can be interpreted as a peremptory order.

When *will* enters combinations with the progressive aspect, it often implies an ongoing event at a future time, or can soften the future statement, making it sound more casual or planned rather than a simple factual prediction. For instance,

(16) *He will be arriving later this evening*

can suggest a planned or scheduled action in progress at a future time. It sometimes conveys greater politeness or indirectness compared to simple *will*. In the example,

(17) *Your instructor will be monitoring your progress,*

the progressive *will be monitoring* frames the action as ongoing in the future and possibly less abrupt.¹⁸

In combination with the perfect aspect, *will* indicates that something will be completed by a future point.

(18) *By next week I will have finished the project.*

Interestingly, *will* + *perfect* also has an epistemic use to make inferences about the past. For example,

(19) *He will have arrived by now*

in British English often means “he has presumably arrived by now” – an epistemic deduction about a past event, using *will* to indicate the speaker’s confidence. Thus, *will have* can serve a similar role to *must have* in contexts of logical inference.¹⁹

Shall can express futurity especially with first person (and is sometimes said to carry a nuance of determination or promise in those cases). Classic rules (often taught prescriptively) once recommended using *shall* with *I/we* for plain future, *will* with *I/we* for volition; and conversely *will* with *you/he/she/they* for plain future, *shall* for obligation or insistence. However, actual usage has long since shifted, and *will* is the dominant future marker for all persons, with *shall* either reserved for formal contexts or merged semantically with *will*. In interrogative uses like “*Shall I...?*”, *shall* still carries a deontic flavour (seeking instruction). In legal or contractual language, *shall* is used for obligations (deontic): “*The borrower shall repay the loan by...*,” which really means “is obliged to.” But outside these niche uses, *shall* for futurity is rare in everyday English, and notably absent in American English, except perhaps in polite questions or fixed phrases.

4. Modal Verbs in Perfect Constructions

As already noted, when a modal verb is combined with the perfect infinitive, such constructions often have either an epistemic reading about a past event or a non-epistemic reading indicating a counterfactual or unfulfilled situation. Here we examine corpus examples and typical usage patterns of modal perfects, illustrating the internal vs external perfect distinction. One of the most common uses of modal perfect is to express a confident inference or logical conclusion about a past situation. The modals *must* and *will* are frequently employed this way:

¹⁸ This usage can also appear in the present: “*Don’t call now, he’ll be sleeping*” – which is a present epistemic inference meaning “he is probably sleeping now.”

¹⁹ *Must have* is more common for epistemic necessity in the past.

(20) a. *The lights were on; they must have left them on all night.*

b. *By the time you read this, I will have arrived in Sydney.*

In a., the epistemic value of the modal verb allows the speaker to conclude, from the evidence presented ('lights on'), that the past action ("they left them on") is true. The modality is one of certainty or near-certainty. *Must* in present would have indicated necessity, but here it indicates a high probability regarding a past event. No obligation sense is possible in this context. The value of *will* in (20) b. is actually not epistemic uncertainty but a confident statement about a future-as-past (from the perspective of the reader, the arrival is in the past, but from the writer's perspective it is in the future). In letters or announcements, *will have V-en* often functions as a future perfect (which is a kind of epistemic prediction about a future past point). In conversation, *will have V-en* can be used epistemically for a past inference: "*What's that noise?*" – "*That will have been the cat knocking over something.*". BrE favours this construction, meaning "I infer that was the cat", whereas in AmE usage, *That will have been the cat* is less idiomatic; *that must have been the cat* or *probably the cat* would be used. Thus, BrE sometimes opts for *will have* to indicate a very confident inference, whereas Americans employ *must have* or adverbials for similar certainty.

Other epistemic modals with perfect infinites involve especially *may*, *might*, and *could*:

(21) a. *She may have taken a wrong turn.*

b. *They might have forgotten about the meeting.*

c. *I could have sworn I left my keys on the table.*

The sentence in a. is a direct epistemic possibility about a past action ('she possibly took a wrong turn'). This is common in both BrE and AmE, especially in speculative contexts such as news reports: "*The cause of the accident may have been a technical failure,*" meaning it is under investigation, one possibility being technical failure. The epistemic interpretation of b. is "maybe they forgot." The difference between *may have* and *might have* here is slight; *might have* sounds a bit more tentative or colloquial. Corpus evidence shows that *might have* tends to outnumber *may have* in conversation, likely due to its more tentative feel and because *may have* can sound rather formal. In academic or formal writing, *may have* is more frequent, as authors hedge claims about past events. (21) c. is an idiomatic use of *could have sworn*, meaning "I was absolutely sure (but apparently I was wrong)." Here, *could have sworn* grammatically looks like a dynamic past ability (*I was able to swear*), but idiomatically it functions epistemically to express a strong conviction that has turned out to be false or at least questionable. It is a fixed expression in which *could have* does not exactly mean a past possibility but rather a hypothetical emphasis: "*I would swear (if asked) that X was true, even though apparently it's not.*"

Root (deontic/dynamic) modal perfect denote mostly unfulfilled events and counterfactuality. We analyse *should have*, *could have*, *might have*, *would have* primarily, since *must have* is rarely used in a deontic sense²⁰. As noted, *should have*

²⁰ One would not say *He must have done it* to mean "he was obliged to do it", but rather *He had to do it* or *He was supposed to do it*.

X usually implies X did not happen. This use is pervasive in both BrE and AmE, conveying regret or criticism about the past. Sometimes *should have* can be epistemic: “*They should have arrived by now,*” which means “according to expectation, they have arrived by this time”. It thus indicates a confident expectation about a past event. This is one case where *should have* does not implicate non-occurrence; indeed, the speaker expects that the action has occurred. Context (*by now*) and intonation would signal the epistemic reading. Huddleston & Pullum mention this as well: *should have* can sometimes leave open that the action might or might not have happened (“He should have arrived by now” does not absolutely mean he did not). But *should have* without such temporal markers usually implies it did not happen. *Ought to* is interchangeable with *should have* in meaning, though much less frequent, especially in AmE, carrying the same reprimand implication.

Could in combination with the perfect infinitive may express:

- (22) a. *I could have won the race, but I tripped.*
- b. *You could have called to let me know you'd be late.*
- c. *He could have taken the earlier train, I'm not sure.*

The first example in (22) a. denotes an unrealized ability or opportunity, implying ‘I was capable of winning / it was possible for me to win, but it did not happen’. This is dynamic *could* (ability) with external perfect marking the past hypothetical scenario. The sentence under (22) b. implies reproach or suggestion after the fact. It does not exactly state ability but rather implies “it would have been possible and *appropriate* for you to call (but you didn’t).” The usage shades into a weak reproach, conveying that a desirable action did not occur. Pragmatically, this is close to *should have called*, though *could have called* is slightly softer, emphasizing the feasibility that was not taken advantage of, rather than an outright obligation. Sentence c. expresses an epistemic possibility in the past. In context, perhaps someone is speculating about how a person might have travelled. Without more context, *could have* in isolation often leans to the counterfactual interpretation (“he didn’t, but he could have”), but with uncertainty phrasings such as *I’m not sure* or *maybe*, it can serve epistemically. The ambiguity of *could have* is well known: “*He could have done it*” can mean either “It is possible that he did it” or “He would have been capable of doing it (but we don’t know if he did)” or “He had the opportunity to do it (but didn’t).” Only context disambiguates. In formal writing, *could have* in the epistemic sense is often avoided in favour of *may* or *might have* to prevent ambiguity.

Besides unrealized possibility, *might* followed by the perfect infinitive may also denote past uncertainty and criticism.

- (23) a. *We might have gone to the party, but we decided to stay in.*
- b. *You might have helped me instead of just watching!*

Unrealized possibility expressed by *might* is nearly equivalent to *could have gone* in meaning a. Sometimes *might have* in this sense conveys a slightly lower likelihood or more hypothetical feel than *could have*, but in counterfactual usage,

they often overlap. *Might* expressing criticism is mostly prevalent to BrE, being employed to sound even more resentful than *could have* or highlighting the contrast with reality. This use is somewhat idiomatic; *might have X* in this tone strongly signals that the person did not do X and the speaker thinks they should have. It is as if saying “It was within the bounds of possibility/expectation for you to help me, but you chose not to.”²¹

A sentence can occasionally be ambiguous between an epistemic and a root reading, as Huddleston & Pullum note. For example:

(24) *He might have killed her.*

The ambiguity lies in the fact that there can exist several interpretations along the epistemic and dynamic/counterfactual values. For instance, the epistemic implies “Perhaps he killed her” (we don’t know – maybe he did), whereas the dynamic/counterfactual one entails “It was a possibility that he could have killed her (but he didn’t).” Therefore, *might have* can be ambiguous between a past possibility that did occur vs a hypothetical possibility that did not. The presence of contraries like *but in fact didn’t* or *we don’t know yet* in context will help clarify the ambiguity. The corpus examples align with these interpretations, and fluent speakers usually sense the difference. When needed, they rephrase to avoid ambiguity (e.g., use *could have* for the counterfactual and *might have* for the epistemic or add contextual clues).

There are several instances when *would* enters combinations with a perfect infinitive. Consider the following examples:

- (25) a. *I would have called you, but I didn’t have your number.*
- b. *That would have been around 1990, I guess.*
- c. *He would have forgotten our appointment, wouldn’t he!*

The first sentence expresses the conditional or counterfactual meaning of *would*. This is the canonical use of *would have* – the apodosis of a counterfactual condition (explicit or implicit). It denotes a hypothetical result in the past that did not actually occur. This construction is very frequent in both varieties, as part of the standard “third conditional.” Sometimes *would have* appears outside explicit *if*-clauses to indicate a stance or presumption about the past, as in b. This can be seen as an epistemic use of *would*: the speaker is calculating or guessing the date of an event, effectively meaning “that was probably around 1990.” It is slightly different from *will have been* which British people use similarly. In AmE, *would have been* is used in this way too, especially in historical narratives or recollections: “*Without the war, he would have been about 95 years old this year.*” Actually, the example is straightforward counterfactual (since the war caused death presumably). A clearer epistemic one: “*We moved to Boston in 2005. That would have been four years after you left.*” *Would have been* here is a way to say “that was (I think) four years after you left.” It is epistemic in that it is a calculation or inference. Huddleston & Pullum note that this instance of *would* is akin to a “modal remoteness” version of *will* for past assumption. (25) c. expresses polite expression of annoyance, especially in BrE.

²¹ Intonation would stress *might*.

The temporal dimension is primarily about past time – these constructions allow modals to engage with past events, either by assessing them (epistemically) or by referring to possibilities/obligations in the past (root modality). The delicate interplay of meaning (inference vs counterfactuality vs regret vs past necessity) is handled by context and by which modal is chosen.

5. Modal Verbs in Progressive Constructions

While perfect constructions primarily situate modal statements in past time, progressive ones position them in continuous or ongoing aspect. A modal combined with *be* + *present participle* can describe actions in progress or temporary situations with a modal colouring. The interplay of progressive aspect with modality adds nuance to time by focusing on the duration or ongoing nature of an event, either in the present or future (since progressive inherently often locates an event as unfolding around a reference time).

Epistemic modals commonly appear with the progressive to indicate speculation about an ongoing action or a temporary state:

- (26) a. *The kids must be sleeping now; the house is so quiet.*
 b. *Don't call at 8; they may be watching the game then.*
 c. *He might be joking, I'm not sure if he means.*
 d. *They could be lying about what happened.*

Epistemic *must* in a., with progressive *be sleeping*, indicates a deduction about the present ongoing event (the children are asleep at this moment). The progressive emphasizes that the state is currently in progress. Without progressive, *The kids must sleep now* is not idiomatic to mean “must be asleep” (it would be interpreted as a deontic command or a habitual truth statement which does not fit). Epistemic *may* in b. used for a future time (8 o'clock) in combination with the progressive suggests a possibility of an ongoing action at that future moment. This is like future progressive but couched in modality. It indicates uncertainty but a plausible guess about their activity at that time. Sentence c. is a common way to express uncertainty about someone's intent/seriousness, focusing on the ongoing act of “joking” (or pretending). If one said *He might joke*, that would mean “he might habitually joke” or “he might joke (later)”. Epistemic *could* (possibility) in d. indicates ‘it's possible that right now they are in the process of lying’ (or in their account of events, they are not telling the truth – an ongoing action of speaking untruthfully). Without progressive, *They could lie* would mean “they have the capacity or tendency to lie (generally or in the future)”, which is an entirely different statement. These examples show that progressive is often necessary to convey the right temporal framing of an epistemic statement. If the speaker's uncertainty or inference is about a present ongoing situation, progressive is natural.

Deontic modals (obligation, permission) rarely need progressive aspect, because obligations or permissions usually target actions in a general or simple form. However, there are scenarios, as in:

- (27) a. *You should be working instead of playing games.*
 b. *We must be doing something right, as our team keeps winning.*
 c. *You may be wondering why I called this meeting*

The deontic *should* in a. implies obligation/advice for the present moment. It implies a continuous action that the person ought to be doing presently. The progressive is quite appropriate because the speaker is referring to an ongoing activity the person is neglecting. If one said *You should work instead of playing games*, it sounds more generic or like a general principle. *You should be working* specifically targets the present moment's lapse. The example in b. employs *must* epistemically ("we must be doing something right" = I infer we are doing something right), but one could also imagine a context: "*At this time tomorrow, all volunteers must be working on the clean-up*" – a kind of deontic scheduling: it is necessary that volunteers be in the middle of work at that time. It is a bit formal, but possible. More straightforward deontic interpretations are specific to "*Employees must be wearing their ID badges at all times.*" That is progressive in structure (*be wearing*), used as a standing rule. It means any time you look, employees are obliged to *have* their badge on (progressive emphasizes the continuous state). Official regulations often use this phrasing (instead of "must wear ID badges", which is equally possible – the continuous adds emphasis on the ongoing condition). *May be wondering* in c. is a formula often used by speakers. It is deontic in a very attenuated sense (it is a polite rhetorical strategy, granting the listener permission or acknowledging a likely mental state). However, *may be wondering* is epistemic from the speaker's perspective ("It's possible that you are wondering...").

Pure permission progressive is unusual because permission is typically for an act, not for the state of doing it. You would not normally say "*You may be leaving early today*" to mean "you have permission to be in the process of leaving." Similarly, "*You can be going now*" is not idiomatic for "you can go now." Instead, progressive can soften commands: "*You can be going now*" might sound like "it's about time for you to leave (so start leaving)" but it is rather uncommon.

Conclusion

The interaction of tense, aspect, and modality in English, far from being a simple matter of 'deficient' morphosyntax patched by periphrasis, reveals a highly systematic and richly constrained architecture for expressing temporal and modal nuance. As Pop (2023) notes, being 'a cornerstone of linguistic expression, modal verbs wield the power to infuse sentences with a spectrum of meanings that encapsulate the intricate dimensions of modality.'²² Modal verbs remain structurally fixed yet semantically flexible because they co-opt aspectual auxiliaries to project meanings they cannot inflect for themselves. The resulting system is an illustration of the fact that grammar is not a static inventory of forms but rather a dynamic resource for organizing and negotiating meaning in real-time discourse.

²² Pop, Ioan Benjamin. 'Exploring the Nuances of Modal Verb Negation in English: An Analysis of Auxiliary and Main Verb Negation' in *Annales Universitatis Apulensis. Series Philologica* No. 24, Issue 2/2023, Alba Iulia: Editura Universităţii „1 Decembrie 1918”, 2023, p. 272.

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