

## Epistemic modals and perfective *have*

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### 1. Introduction

Epistemic modals are used to convey judgments about the probability of an event (cf. Palmer 1990: 50f). In Present-Day New Zealand English, epistemic utterances that concern past events usually contain a ‘perfective’ *have* that follows the modal (1). However, especially in the speech of NZers born between the late 19<sup>th</sup> and mid-20<sup>th</sup> century, we also find utterances where no *have* is present, even though a past event is discussed (2).

- (1) a. I would’ve been about eighteen (cc95-13, female, born 1965)  
 b. it musta been pretty air air proof (cc95-13, female, born 1965)  
 c. they migha been twelve inches (cc95-13, female, born 1965)  
 d. cos it would’ve altered the dynamics I suppose (cc94-20a, male, born 1947)  
 e. I think I must’ve fainted (cc95-24a, male, born 1946)  
 f. I think I might’ve told you (ia-18, male, born 1924)  
 g. mother could’ve made it I don’t know for sure whether she did or not  
 (ia-114, female, born 1917)
- (2) a. I thought I was made to have this bicycle I would be - eight I suppose nine . not very old anyway (ia-107, female, born 1921)  
 b. the country school was two-roomed. and a porch – uh – a~ a~ and a couple of play sheds – uhh - - the – classrooms wouldn’t be any bigger than this room here (ia-108, male, born 1919)

This paper investigates the influence of linguistic factors on the use of perfective *have* in non-counterfactual judgments involving epistemic modals. I argue that the additional *have* may serve either to mark past time, or the episodic nature of the assessed event, and I propose that its distribution is determined by considerations of economy.

### 2. The data

The research reported here forms part of the Origins of New Zealand English (ONZE) project at the University of Canterbury.<sup>1</sup> The results presented in the next section draw on data in two of the corpora in the ONZE archives (cf. Gordon, MacLagan & Hay 2005 for more background information on these corpora):

#### The Intermediate Archive (ia)

A collection of interviews with speakers born between 1890 and 1930, from several different sources. Some come from recordings made for an oral history project by Rosemary Goodyear, some from interviews recorded by volunteer radio programme maker Lesley Evans, and others are interviews with descendants of speakers in the Mobile Unit archive (the earliest ONZE corpus), which were conducted by two linguistic researchers in the department here. Most of the speakers in this corpus were recorded in the early 1990s.

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<sup>1</sup> Many thanks to Jen Hay for laying the foundations for this study, and to Therese Aitchison and all the undergraduate students who participated in the 2<sup>nd</sup> year sociolinguistics project in 2003 and 2004, for their invaluable work on the construction of the modals database I have used for my analysis.

### The Canterbury Corpus (cc)

A set of recordings collected by undergraduate students at the University of Canterbury since 1995. The speakers in this corpus were born between 1930 and 1984, and fall into two age-groups. Older Canterbury Corpus speakers were aged 45-60 when interviewed, younger speakers were aged 20-30.

### 3. Trends

Evidence from the ONZE corpora held at the University of Canterbury suggests that the occurrence of perfective *have* in non-counterfactual epistemic utterances depends both on the modal involved and on the semantic properties of the assessed event.

Many of the epistemic utterances in the database are about age (1a) & (2a), size (1c) & (2b), and similarly stable qualities (1b). That is, they involve individual-level predicates (cf. Carlson 1980[1977], Diesing 1992, Kratzer 1995, Chierchia 1995). It turns out that the distribution of *have* in judgments about individual-level predicates differs quite markedly from the distribution of *have* in episodic stage-level utterances like (1d)-(1g), and also (3).

- (3) a. he would've been in there . just about twenty four hours (cc95-13, female, born 1965)  
 b. I'd a been dressed in a white outfit (ia-10, male, born 1921)  
 c. I mighta been sick at one time (ia-1, female, born 1897)

As can be seen from Table 1, *have* is generally obligatory with episodic stage-level events, no matter which epistemic modal is involved. When the utterance involves an individual-level predicate, *have* appears to be obligatory with *must*, *might*, and *could*, but *would* frequently occurs without *have*.

Table 1. The distribution of perfective *have* in epistemic utterances concerning past events – breakdown by modal and type of predicate (**note:** I have included only utterances the calculations that I could confidently assign to a particular category)

% of utterances (no. in brackets)	individual-level predicate		stage-level predicate (one-off event)	
	have	no have	have	no have
would	39% (23)	<b>61% (36)</b>	<b>100% (24)</b>	0%
must	<b>100% (19)</b>	0%	<b>100% (52)</b>	0%
might	<b>100% (14)</b>	0%	<b>100% (22)</b>	0%
could	<b>100% (4)</b>	0%	<b>100% (1)</b>	0%
may	-	-	<b>100% (2)</b>	0%

The difference between *would* and other epistemic modals is even evident in the speech of individuals (4)-(5).

- (4) [I'd be about . perhaps five or six] and this friend would take me ...  
 [oh I might've been about . eleven or twelve] when we we'd be taken there  
 (ia-115, female, born 1907)
- (5) she said . you know . you and I were really even though we were top of the class we were quite immature . which is true . whereas you see . [some of the kids would be – could've been three years older than us] and . and into puberty . and you know quite a . quite a different outlook (ia-47, male, born 1922)

Interestingly, we also find a contrast between *would* and other epistemic modals in utterances where the subject is readily interpreted as anaphoric to the variable (*x*) in the open proposition (OP) (6)-(7).

(6) A: when was that? B: that would be . when I was twenty one  
(cc97-14a, female, born 1943) [OP: the event occurred at time *x*]

(7) years later and it might be four years later . they had a replica of that Southern Cross come across. the Tasman (ia-31, female, born 1923)  
[OP: the flight of the replica happened *x* years later]

As Ward et al. (2003: 77f) point out, no past time marking is required in utterances of this kind, because the variable in the open proposition is instantiated at the time of utterance rather than at the time of the event. Although *might* (6) and also *must* may occur without *have* in this context, it appears that speakers of New Zealand English nevertheless strongly favour the use of the past time marker *have* with epistemic modals other than *would* (Table 2).

Table 2. The distribution of perfective *have* in epistemic utterances about the past where the subject is readily interpreted as anaphoric to the variable in an open proposition.

% of utterances (no. in brackets)	have	no have
would	11% (4)	<b>89% (34)</b>
must	<b>93% (13)</b>	7% (1)
might	<b>94% (15)</b>	6% (1)
could	<b>100% (4)</b>	0%
may	<b>100% (1)</b>	0%

Again, there is evidence for a contrast between *would* and other modals in the speech of individuals (8).

(8) all this night soil was taken away out to Sawyer's Bay and er . I think we used to go . no  
[that would be when in the secondary school two part two] ... well we certainly went to  
school picnics but ah [that mighta been in our secondary part]  
(ia-115, female, born 1907)

When we compare the results for the two corpora, we can see that Canterbury Corpus speakers are generally more likely to use *have* with epistemic *would* than speakers from the Intermediate Archive (cf. Tables 3-4).

Table 3. The cooccurrence of perfective *have* and *would* in epistemic utterances about past events – breakdown by corpus and utterance type (percentage of utterances)

% of utterances (no. in brackets)	Intermediate Archive		Canterbury Corpus	
	have	no have	have	no have
<b>would</b>				
individual-level predicates	30% (14)	<b>70% (32)</b>	<b>69% (9)</b>	31% (4)
subject anaphoric on variable in OP	3% (1)	<b>97% (28)</b>	38% (3)	<b>63% (5)</b>

Table 4. The cooccurrence of perfective *have* and *would* in epistemic utterances about past events – breakdown by corpus and utterance type (percentage of speakers who produced at least one relevant utterance)

% of speakers who produced at least one relevant utterance (no. in brackets)	Intermediate Archive		Canterbury Corpus	
<b>would</b>	have	no have	have	no have
individual-level predicates	47% (8)	<b>88% (15)</b>	<b>75% (6)</b>	38% (3)
subject anaphoric on variable in OP	8% (1)	<b>100% (12)</b>	<b>60% (3)</b>	<b>60% (3)</b>

#### 4 Proposed analysis

I propose that perfective *have* is only included in an optimal derivation if its presence is required for interpretive purposes. Following a suggestion by Palmer (1990: 66), I argue that speakers who produce utterances like (9) do not require *have* as a past time marker with epistemic *would*, because for them, *would* itself supplies the past time reference. For these speakers, the use of perfective *have* in utterances such as (10) arises from the need to formally distinguish epistemic *would* from past habitual *would* (11).

- (9) I thought I was made to have this bicycle I would be - eight I suppose nine . not very old anyway (ia-107, female, born 1921)
- (10) we would've bought it probably about nineteen sixty-seven (cc96-1a, male, born 1941)
- (11) he'd buy a crate at Christmas time (ia-114, female, born 1917)

Since the interpretation of habitual *would* (12) strongly resembles that proposed by Chierchia (1995: 195) for generic utterances, I propose that habitual *would* is an overt realisation of the head of the projection hosting the generic operator Gen (cf. Chierchia 1995), as is generic *might* (13).

- (12) **Past** [Gen s[C(a, s)] [pred(a, s)]] (for definite subjects)

**Past** [Gen s[pred(x)  $\wedge$  C(x,s)] [pred(x,s)]] (for indefinites/generic subjects)

C = context variable that specifies the contextual restrictions (often explicitly mentioned in the form of adverbials)

- (13) we'd be quite exciting excited expecting . or being alert as to when our turn would come sometimes you **might** receive it a couple of times (ia-72, male, born 1915)

Generic *might* differs from habitual *would* in that its semantic representation also contains a possibility operator (14). At the same time, generic *might* lacks the inherent past time reference that characterizes habitual *would* (15).

- (14) **Gen** s[C(a, s)] [Possib [pred(a, s)]] (for definite subjects)

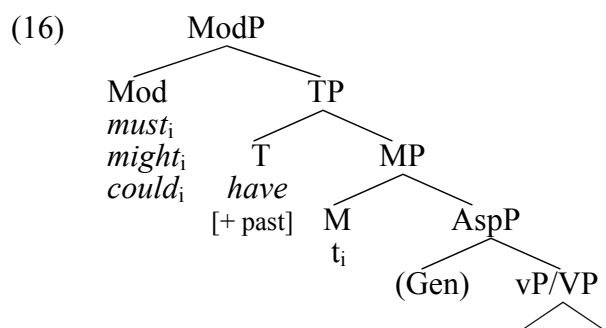
**Gen** s[pred(x)  $\wedge$  C(x,s)] [Possib [pred(x,s)]] (for indefinites/generic subjects)

- (15) a. you might receive it a couple of times [Gen [Possib]]  
 b. you'd receive it a couple of times [**Past** [Gen]]

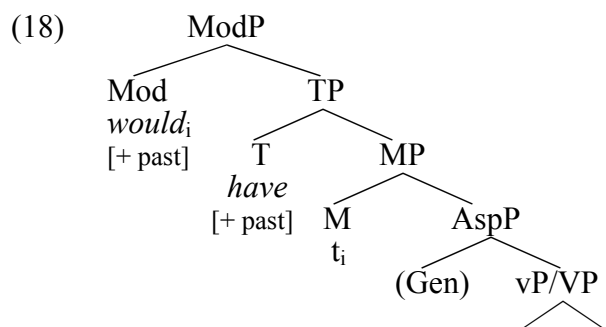
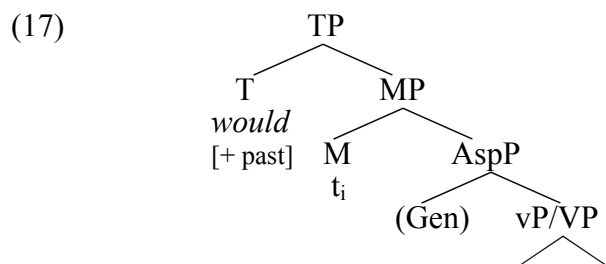
Chierchia (1995: 215f) argues that individual-level predicates (ILPs) are inherently generic, and that their lexical entry contains a feature (also found in habituals) that needs to be licensed by the generic operator Gen. In this approach, the semantic representation of an ILP already contains Gen, which means that the use of habitual *would* with ILPs would lead to a semantic redundancy ruled out by economy principles. So a *would* that appears with an ILP will automatically be interpreted as epistemic.

Stage-level predicates, on the other hand, lack a generic operator, may therefore readily cooccur with habitual *would*. I propose that for speakers who use bare *would* in epistemic utterances involving ILPs, but *would have* in assessments of episodic stage-level predicates, *have* is the overt realisation of the 'episodic operator' which is hosted by the same projection as Gen (cf. Cinque 1999: 99).

I assume that tensed clauses have an uninterpretable tense feature in T. This feature needs to be checked exactly once during the derivation to prevent it from crashing. I propose that the lexicon of all the speakers in this study contains a *have* specified for the interpretable feature [+ past], which is base-generated in T and checks its tense feature when an epistemic modal is unable to do so (cf. Gelderen 2004: 161f). Following suggestions by Cinque (1999), I will assume that epistemic modals are base-generated in a higher position (M) than habitual *would* and generic *might*. Epistemic *must*, *might*, and *could* all lack an inherent tense feature and undergo overt raising to a position above TP (16).



For speakers who use epistemic *would* without *have* in some contexts, *would* itself is specified for the feature [+ past] (just like habitual *would*), and is therefore able to check the uninterpretable tense feature on T. As a result the *have* is not required to check the past time feature in T. Since the [+ past] features of *would* and *have* are interpretable, the coexistence of *would* [+past] and *have* [+past] in itself will not crash the derivation, as long as one of them checks the tense feature on T. However, the use of two items with the feature [+ past] is less economical and efficient than the use of *would* [+past] alone. When *would* [+ past] appears by itself, it only needs to raise to T, and no additional projection is needed (17). When *have* [+ past] occupies T, on the other hand, *would* has to raise to a higher projection (18), which results in a less economical syntactic representation. The use of both *have* and *would* to signal past tense also violates Hawkins' (2004: 38f) efficiency principle Minimize Forms, since the resulting string is longer, and a single property is expressed by two forms.



I propose that for younger speakers, epistemic *would* has lost its [+ past] feature (as a result of semantic bleaching/grammaticalisation) and is therefore no longer able to signal that the assessed event happened at a time in the past. This means that [+ past] *have* now has to appear with epistemic *would* as well, and we no longer have a difference between assessments of individual-level predicates and episodic stage-level predicates.

The differences between the speech of older and younger New Zealanders could also reflect a trend towards having syntactic structure mirror semantic structure (cf. Walker's 2004 observations on modals, negation and *have* in Present-Day New Zealand English). In epistemic utterances, the modal has semantic scope over the time of the event assessed (19).

(19) **Possib/Nec** [Past [pred(x,(y))]]

This scope relation is not reflected in the syntactic representation of an utterance when the modal marks both epistemic modality and past event time (17), because modality and event time are associated with the same lexical item. The inclusion of a perfective *have* to mark the past time of an assessed event ensures that the scope of the modal over the time of the event assessed is clearly identifiable from the surface form of the utterance (16). So although the syntactic representation in (16) is more complex than that in (17), it could be argued to facilitate the semantic processing of the utterance, and thus also meets economy and efficiency requirements.

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