

Priority necessity modals and their complements

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1. Introduction The size of a modal complement is linked to the interpretation the modal can receive (Palmer 1986, Cinque 1999, Hacquard 2006, 2010, among others). Using data from English, Hebrew, Hindi-Urdu, and Czech, Rubinstein (2012) proposes the generalization that deontic interpretations are restricted to verbal complements. In this paper, I revisit and substantiate Rubinstein's claim by addressing novel data on Dutch modals. I show that while Dutch seems to allow deontics with NP complements, the underlying structure associated with the modal *must* be minimally a vP. While it is still not clear *why* the generalization seems to hold, the covert structure provides us with a more precise definition of it.

2. Rubinstein's generalization In English, Dutch, and Hebrew, the modal *must* can receive epistemic, deontic (obligation), and teleological (goal-oriented) interpretations when it combines with an infinitival complement.

- (1) My grandparents *must* have a fence. epistemic, deontic, teleological

Unlike in English, in Dutch and Hebrew *must* can take an NP. In this case, the modal loses its epistemic interpretation. The modal in Hebrew, but not in Dutch, further loses its deontic interpretation (Rubinstein 2012). The context in (2) forces a deontic interpretation, and in this context, Hebrew *çayav* 'must, have to' combined with an NP is infelicitous (3a) (Rubinstein 2012:163), whereas Dutch *moeten* 'must' is (3b).

- (2) City regulations mandate that home owners put up fences between their properties. You and your neighbor get along very well without a fence. In fact, both of you object to a fence because it would have to go right on top of the beautiful flower beds that have been flourishing between your two properties. You say to your neighbor:

- (3) a. *çayav-im kan gader.* Hebrew, # in context (2)
must-M.PL here fence
'We need a fence here.' *epistemic, *deontic, teleological
- b. We moeten **een hek.** Dutch, ✓ in context (2)
we must a fence
'We are obliged to build a fence.' *epistemic, deontic, teleological

Rubinstein's generalization is that modals with verbal complements can have a deontic interpretation while the same modals with nominal complements cannot. The Dutch data in (3b) appear to be a counterexample. I argue that the complement in (3b) is underlyingly verbal (Van Riemsdijk 2002, 2009) (4), which lends novel support to Rubinstein's generalization.

- (4) [ModP We, moeten [vP t [VP een hek V]]]
we must a fence V

3. Deontics minimally need vP complements Adverbs like *carefully* and *calmly* cannot combine with an NP and minimally need a vP to adjoin to. This can be shown by the impossibility of the adverb in (5) where *voorzichtig* 'carefully' cannot modify a topicalized NP.

- (5) (*Voorzichtig) een wasbeurt, geeft Jan de auto. Dutch
carefully a wash gives Jan the car
'(Carefully) a wash, John gives the car.'

In (6), the adverb *carefully* can properly modify *a wash*, which is interpreted as needing to be *done carefully*. The contrast between (6) and (7) crucially shows that while the complement of Hebrew *must* is an NP, the complement of Dutch *must* is at least a vP.

- (6) De auto moet (**voorzichtig**) een wasbeurt. Dutch
the car must carefully a wash
'The car needs to get washed (carefully).'

- (7) ha-mexonit criχ-a/ χayev-et shtifa (*be-zehirut) Hebrew
the-car need-F.SG must-F.SG wash in-care
 ‘The car needs to get washed (carefully).’

4. Deontics need complements smaller than TP The complement of Dutch *must* could in principle be bigger than a vP, but I argue that it has to be smaller than a TP. Epistemic interpretations are completely unavailable for (3b) and I propose that the reason why is that epistemics require a TP as they scope over tense (Iatridou 1990, Picallo 1990, Abusch 1997, Condoravdi 2002, Stowell 2004, Hacquard 2010, among others). In (8), the evaluation time of epistemic *must* is speech time: Given what is known *now*, John had to be away last night. The absence of the epistemic interpretation in (3b) suggests that the complement in (4) needs to be smaller than a TP.

- (8) Jan moest wel weg zijn gisteravond. Dutch
Jan must-IMPF PPI away be yesterday.evening
 i. ‘It is necessarily the case that John was out last night.’ epistemic > tense
 ii. # ‘It was necessarily the case that John was out last night.’ # tense > epistemic

5. The silent light verb Van Riemsdijk (2002) proposes that PP complements of Dutch modals contain a silent eventive infinitive. A silent eventive verb in the NP case would explain why eventive adverbs are felicitous, and why an eventive interpretation is available both with a possessive (6) and a predicative relation (9) between the internal and the external argument.

- (9) Deze muur moet een diepe kleur paars. Dutch
this wall must a deep color purple
 i. [Context: The wall is white] ‘This wall needs to **become** a deep shade of purple.’
 ii. [Context: The wall is purple] ‘This wall needs to **be** a deep shade of purple.’

A silent eventive verb does not explain the availability of stative interpretations: (9) can be uttered in a context in which the wall is purple (9ii) and in this case, the interpretation is that the current state needs to be maintained. The availability of a stative interpretation requires further exploration, especially because this interpretation is unavailable with an overt eventive verb: In context (9i), it is infelicitous to say *The wall must become a deep shade of purple* in Dutch.

6. Summary and implications Rubinstein’s generalization is confirmed for Dutch as deontic modals are restricted to verbal complements. I furthermore restricted the exact size of the complement as minimally a vP with a covert verb (given the availability of eventive adverbs) and tentatively smaller than a TP (given the lack of epistemic interpretations).

While I am not able to explain *why* deontics cannot combine with complements smaller than a vP, there is initial evidence that the restriction might be a property of deontics in general. In Dutch, auxiliaries like *have* and *be* and lexical verbs like *see* have a deontic interpretation when combined with a verbal complement (10a)-(11a). Surprisingly, the deontic interpretation is lost when combined with an NP (10b)-(11b). The fact that *carefully* modifies the whole predicate and not just the complement shows that there is no covert structure present. Whether this restriction on NPs is a deep property of deontics that holds for the whole lexicon remains to be seen.

- (10) a. Je hebt **te beginnen**. (11) a. Je ziet je maar **te redden**.
you have to begin you see you but to rescue
 ‘You need to start.’ ‘You have to make it on your own.’
 b. Je hebt (*voorzichtig) **een begin**. b. Je ziet (?voorzichtig) **een redding**.
you have carefully a begin you see carefully a rescue
 ‘You (carefully) have a start.’ ‘You (carefully) see a rescue.’

7. Selected references Hacquard, V. 2006. Aspects of modality. Ph.D. Dissertation, MIT. - Riemsdijk, H. v. 2002. The unbearable lightness of GOing. The projection parameter as a pure parameter governing the distribution of elliptic motion verbs in Germanic. *Journal of Comparative Germanic Linguistics* 5, 143–196. - Rubinstein, A. 2012. Roots of Modality. Ph.D. Dissertation University of Massachusetts Amherst.