Between modals and verbs: the dual role of ‘must’ and ‘need’

Verbal auxiliaries like *must* are most naturally thought of as necessity modals: they tell us that something is necessarily the case in view of a contextually determined conversational background (Kratzer 1981, 1991). Attitude verbs like *want* also have a universal (∀) modal component, but we treat them as non-functional elements, namely verbs. Modals and attitude verbs are so close in meaning that the same lexical item can serve in both functions. This, I show, is precisely the case with Modern Hebrew *gayav* ‘must’ and *tsariț* ‘need’. Interestingly, the syntactic position of ‘must’/‘need’ in a tree also correlates systematically with the range of modal interpretations they admit. As seen in (1), deontic and epistemic interpretations disappear once the complement to ‘must’ changes from an IP (1a) to an NP (1b). Tensed CP complements pattern with NPs.

These data raise two important questions. First, how can one and the same lexical item be used both as a functional modal element on the one hand (as in (1a)), and a lexical verbal predicate on the other (as in (1b))? Second, what predicts the range of modal flavors that are found when ‘must’/‘need’ are used as verbs?

Assume the denotation in (2a) for ‘must’ as a modal, where s is an event variable, p is a proposition-type variable, and f and g are variables of type (s, (⟨s, t⟩, t)) that correspond to the modal base and ordering source, respectively (following Kratzer; ‘max_g(s)(∀f(s))’ denotes the subset of worlds in the modal base that come closest to the ideal described by g). Following Hacquard (2006), different modal flavors correlate with different binders of s. My proposal is that verbal ‘must’ has the same quantificational component as the modal, but is in addition a predicate of events. In the denotation proposed for verbal ‘must’, (2b), the event variable s is locally bound and has an event description. Consequently, verbal ‘must’ enters into a thematic relation with an external argument and lacks the ambiguity associated with the raising structure of its modal counterpart (compare the two interpretations of modal ‘must’ (3a) with the single interpretation of verbal ‘must’ (3b)). It also selects for an internal argument, just like an attitude verb (and like in the case of intensional transitive verbs, the question arises as to how composition proceeds with objects of different semantic types).

More familiar attitude verbs have a specific conversational background wired-in to their lexical entry: a doxastic modal base for *believe* (Hintikka 1969), a doxastic-bouletic conversational background for *want* (Heim 1992, a.o.). In contrast, the flavor of modality is not pre-determined in the lexical entry in (2b). Why, then, doesn’t verbal ‘must’ receive epistemic or deontic interpretations?

I suggest that modal components that are contained inside verbs surface by default with *event-internal* conversational backgrounds — ones that have to do with the actual circumstances of an event and its participants. Because f and g are relativized to a specific obligation/need event in this case, the modality will be “read off” of that event argument. Event-internal flavors are based on a circumstantial modal base and relate to the participants’ physical conditions (pure circumstantial modalities, like needing coffee or an operation), the essential goals and desires that stem from the participants’ circumstances (teleological/bouletic modalities, for example needing a visa, a job, or a certain person), etc. We predict that there will be no epistemic interpretations of the modal (since these probe the participants’ mental representations), and no deontic interpretations either (since they require accessing the thoughts of external figures such as judges and legislatures).

The fact that Hebrew verbal ‘must’ receives all kinds of circumstantial interpretations but never deontic ones challenges the view that non-epistemic modalities (also known as root modalities) form a natural class (e.g. Brennan 1993). The concept of event-internal modality offers an explanation of this fact, while allowing must_{mod} and must_{v} to share a common semantic core. The analysis also accounts for subtle meaning differences between verbal ‘must’ and closely-related attitude verbs. Someone may ‘must’ or ‘need’ (but not ‘want’) surgery without being aware of it, and someone can only ‘must’ or ‘need’ things that stem from their actual circumstances (so the claim *He needs a jaguar* can be contested, unlike *He wants a jaguar*).
Examples

(1) a. yehudim ɣayav-im lašum be-yom kipur
   Jews must-PL (to) fast in-day atonement
   ‘Jews must fast on the Day of Atonement’
   (according to religious law/what we know)

   b. yehudim ɣayav-im tsom be-yom kipur
   Jews must-PL (a) fast in-day atonement
   ‘Jews really need a fast on the Day of Atonement’
   (e.g. for health reasons, NOT because of religious law/what we know)

(2) a. $\left[\text{must}_{mod}\right]^f, g = \lambda p. \forall w \in \max g(s)(\cap f(s))$: $p(w) = 1$

   b. $\left[\text{must}_{v}\right]^f, g = \lambda p\lambda s. \text{obligation(s) and } \forall w \in \max g(s)(\cap f(s))$: $p(w) = 1$

(3) a. miʃeʃu me-ha-ʃevre ɣayav liʃtɔt kafe (raising: ∃x-must, must-∃x)
   someone from-the-group must drink coffee

   b. miʃeʃu me-ha-ʃevre ɣayav (fe-yitnu lo liʃtɔt) kafe (∃x-must)
   someone from-the-group must (that-will.let-3PL him drink) coffee

References

Brennan, Virginia. 1993. Root and epistemic modal auxiliary verbs in English. Doctoral Dissertation, University of Massachusetts Amherst, Amherst, MA.


