A puzzle about scope for restricted deontic modals

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Deontic necessity modals (e.g. *have to*, *ought to*, *must*, *need to*, *should*, etc.) seem to vary in how they interact with negation. Compare:

(1) She doesn't have to leave. *have-to* > NEG; ✓NEG > *have-to*

(2) She oughtn't (to) leave. ✓*ought-to* > NEG; *NEG > *ought-to*

Both *have-to* and *ought* are negated in (1,2), but the effect of negation in the two sentences is not the same: (1) is intuitively understood to deny that the subject has to leave (hence NEG > *have-to*), but (2) says that the subject ought *not* to leave (*ought-to* > NEG). The mechanism that generates the noted interpretation for (2) may have a pragmatic or purely semantic explanation (e.g., see Jeretič 2021), but many have taken it to be syntactic in nature (cf. Cormack and Smith 2002; Butler 2003). On some syntactic accounts, what forces modals like *ought* and *should* to outscope negation is their polarity sensitivity (e.g. Iatridou and Zeijlstra 2010, 2013): modals that scope over negation do so because they are positive polarity items, PPIs (cf. Israel 1996 and Homer 2015). According to this proposal, then, *should* must outscope *no one* in (3).

(3) No one should stay. ✓*should* > *no one*; **no one* > *should*

But there seems to be a conflict between this account and a widely assumed theory of *if*-clauses, namely the restrictor analysis (Lewis 1975; Kratzer 1986). Briefly, according to this account (4) has the form (5).

(4) He should leave if he is infected.

(5) [[Should: infected x_1] leave x_1]

The conflict arises for constructions containing a bound pronoun in the (restrictor) *if*-clause. Consider the following examples (cf. Higginbotham 1986, 2003):

(6) No one should stay if they are infected.

(7) Everyone should leave if they are infected.

(6) and (7) are intuitively equivalent. One might think that this follows from the polarity sensitivity of *should*: as a PPI, *should* has to take scope above *no one* in (6), like it does in (3). But assuming that the *if*-clause in (6) restricts the domain of *should*, the LF of the sentence would have to be the following:

(8) [Should: infected x_1] [[No x_2: person x_2] stay x_2]

The variable x_1 in (8) — *they* in the *if*-clause in (6) — is free, and indeed (6) does allow a free interpretation of the pronoun. But a bound interpretation is also available, so there must be an LF of (6) where *no one* outscopes *should*, as in (9):

(9) [No x_1: person x_1][[should: infected x_1] stay x_1]

That is, we have a puzzle. On the uncontroversial assumption that the pronoun *they* in (6) can be bound by *no one*, the following claims appear to be inconsistent:

(10) a. The modal *should* can't scope under *no one* in (6) (e.g., because of polarity constraints)
      b. In (6), the *if*-clause restricts *should* (e.g., because the *if*-clause merges with *should*)

So unless these apparently inconsistent claims are in fact consistent one of (10a) or (10b) is false.

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