Variable modal strength in Afrikaans and Samoan: Deriving strong necessity from weak necessity

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Summary. We discuss a new pattern in the typology of modal strength, relating to the distinction between weak and strong necessity modality, based on data from original fieldwork. In both Afrikaans (Indo-European, Germanic; South Africa) and Samoan (Austronesian, Oceanic; American Samoa, Samoa), the distinction may be left morphologically unmarked. We suggest that the observed variability can be explained under an analysis where the relevant expressions are weak necessity modals that allow for the secondary ordering source to be empty.

Background. Our research aims to make a contribution to the typology of modal strength and thus to a third and lesser studied dimension of modal meaning beyond force (that is, the distinction between possibility versus necessity) and flavour (broadly, epistemic versus root modality). In English, such strength distinctions can be observed between *ought* and *must*, for instance, which the example in (1) picks up on (see also Rubinstein 2021, for a recent overview).

(1) *Employees must wash hands. Non-employees really ought to wash their hands, too.*
(see also Fintel & Iatridou 2008, p. 115)

One prominent approach to weak necessity (WN) derives the distinction from a smaller domain of quantification that weak expressions have compared to their strong counterparts (prominently, von Fintel & Iatridou 2008; Rubinstein 2012). While strong necessity modals quantify over the best of the accessible possible worlds with respect to an ordering source, WN modals quantify over the best of those best worlds with respect to a secondary ordering source, as in (2).

(2) a. $[\![\text{(strong necessity modal)}]\!] = \lambda a_{\langle s,t \rangle} . \lambda o1_{\langle \langle s,t \rangle, t \rangle} . \lambda p_{\langle s,t \rangle} .$
$\forall w' [w' \in \text{BEST}(o1, a) \rightarrow p(w') = 1]$

   b. $[\![\text{(weak necessity modal)}]\!] = \lambda a_{\langle s,t \rangle} . \lambda o1_{\langle \langle s,t \rangle, t \rangle} . \lambda o2_{\langle \langle s,t \rangle, t \rangle} . \lambda p_{\langle s,t \rangle} .$
$\forall w' [w' \in \text{BEST}(o2, \text{BEST}(o1, a)) \rightarrow p(w') = 1]$

Across languages, WN may be lexically encoded, as in English, or morphologically marked on a strong necessity expression, recruiting either the morphology that marks counterfactuality (= consequent X-marking, Fintel & Iatridou 2008; von Fintel & Iatridou 2020) as in French, or a dedicated piece of morphology (Vander Klok & Hohaus 2020), as in Javanese. These strategies are not mutually exclusive, however. We suggest here that languages may also choose not to mark the distinction morphologically. While we only present selected data on strength below, they were elicited as part of a broader research project on the modal systems of the languages.[1]

Data. Afrikaans lexically encodes force and flavour distinctions (see also Landsbergen, Tiberius & Denison 2014; Donaldson 2013) and even strength, with the somewhat antiquated WN verb *behoort*. Consequent X-marking is unavailable in the language for WN; the relevant configurations result in counterfactual, rather than weak, necessity. Importantly though for our purposes, the root necessity modal verb *moet* is compatible with both weak and strong interpretations, as is illustrated in one of the possible translations of English (1) in (3). Under the weak interpretation, *moet* appears to generate a scalar implicature to the exclusion of the stronger claim, which can be strengthened, as in (4).[2] An example of a strong interpretation is in (5).

(3) *Werkers _moet_ hande was. Nie-werkers _moet_ ook hulle hande was.*
employees NEC hands wash non-employees NEC also their hands wash
'Employees should wash hands. Non-employees must wash their hands, too.'

(4) *_Moet_ ek met die kerk piekniek help? Ek weet ek _hoef_ nie.*
NEC I with the church picnic help I know I need NEG
'Should I help with the church picnic? I know I need not.'

(5) a. When Angus went to the hospital in France, he was confused at first because he tried to get a doctor's appointment, but he couldn't! The nice lady at the information

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[1] See also Jozina Vander Klok (2014), "Analysing Modal Systems: Questionnaire on Modality for Crosslinguistic Use", *TulQuest* (URL: <http://tulquest.huma-num.fr/en/node/70>, last accessed 27th January 2022).

[2] Note that root *hoef* does not exhibit any strength variability and encodes strong necessity.

desk explained that he didn't have an European Health Insurance Card (EHIC) to be a patient there, and if you don't have an EHIC, there are no exceptions. This is because the regulations at the hospital state:

b. *Patiente <u>moet</u> 'n EHIC karte hê   om   die hospitaal dienste te gebruik.*
patients NEC a EHIC card have in.order the hospital services to use
'Patients must have an EHIC card in order to use the hospital services.'

Just like Afrikaans and English, Samoan lexicalises force and flavour distinctions (see also Mosel & Hovdhaugen 1992). The necessity modal verb *tatau*, which is compatible with epistemic and root flavours, allows for both strong and weak interpretations, as illustrated in (6) to (8), which are parallel to the Afrikaans examples.

(6)   *'O   tagata faigaluega e   <u>tatau</u> ona fufula   lima.*
FOC people make.work TAM NEC   that wash.PL hand

'O   tagata lē̄   faigaluega e   matuā <u>tatau</u> ona fufula   o   lātou lima.
FOC people not make.work TAM really NEC   that wash(PL) their hand
'As for employees, they must wash their hands.
As for non-employees, they really should their hands.'

(7)   a.   Prompt: "You should check your tyres before you start driving, but it's not a law."

b.   *E   <u>tatau</u> ona siaki muamua pa'u o lou   ta'avale a'o   le'i   alu 'ese.*
TAM NEC that check first   tire of your car   while not.yet go away

E   le'o   se tualfono.
TAM not+FOC a law
Lit. 'It is is necessary that you check the tires of your car
when you have not yet left. It is not a law.'

c.   Comment: "We don't have a separate word for *should*; it is always *tatau*."

(8)   a.   Preparing for the theory test for a Samoa driver's license.

b.   *E   <u>tatau</u> ona 'e   ta'u=avanoa i tagata savavali pe'a*
TAM NEC that you make=space to person walk.PL if

liliu i le   itu agavale a'o   mumū̄ mai le moli lanumumū̄.
turn to the side left   while red   from the light red
'You must give way to pedestrians when turning left at a red light.'

Analysis. Despite the observed variability in strength, we suggest that both Afrikaans *moet* and Samoan *tatau* are underlyingly WN expressions with the semantics in (2-b) above, relying on two ordering sources. Unlike the lexicalised WN modal expressions in English (that is, *should* and *ought*), we propose that these modal expressions however allow for the secondary ordering source to be empty, a possibility attested also for primary ordering sources (Kratzer 1981; Miho, Bhadra & Fălăuş 2019). Under an empty secondary ordering source, the WN claim ends up equivalent to a strong necessity claim with a single ordering source (see also Rubinstein 2013).

Concluding Remarks. While the data mirror the force variability that has been observed in the literature (among others, Rullmann, Matthewson & Davis 2008; Deal 2011), it also highlights the different compositional routes that the grammar of natural languages makes available for the derivation of weak modal strength, from strong to weak, and from weak to strong.

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