

Variable strength in necessity modality: A case of variation between Afrikaans, Dutch, English, and German

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1 Introduction

In their landmark paper, Rullmann et al. (2008) discuss the perceived variability in the quantificational force of modal expressions in St'át'imcets (Lillooet Salish), which they then derive from an underlyingly uniform semantics. The paper has triggered a productive line of research into such (often only prima-facie) variability in modal meaning across languages (Deal 2011; Bochnak 2015; Jeretič 2021; Newkirk 2022; among others).

We present here a related case of variability, in the strength of some of the cognates of the English necessity modal *must* in three other Germanic languages. In English, a distinction in the strength of a necessity can be observed between *must* and the weaker *ought to* in the infamous (1), for instance. The distinction has been argued to be lexically encoded (see, in particular, von Stechow & Iatridou 2008, 2023; Rubinsteyn 2012). While German *müssen*, in (2), appears to encode strong necessity just like its English counterpart, the celebrant's native Dutch *moeten* as well as Afrikaans *moet*, in (3) and (4), systematically allow for weak and strong readings, even in the absence of consequent x-marking, which is required in German (see also Matthewson & Truckenbrodt 2018).

(1) ENGLISH:

*Employees **must** wash their hands.*
*Non-employees really **ought to** wash their hands, too.*

(2) GERMAN:

*Alle Mitarbeiter **müssen** sich die Hände waschen.*
all employees NEC REFL the hands wash
*Alle anderen **sollten** das eigentlich auch.*
all others NEC+X that EIGTL also

(3) DUTCH:

Werknemers moeten hun handen wassen.

employees NEC their hands wash

Niet-werknemers moeten eigenlijk ook hun handen wassen.

non-employees NEC EIGTL also their hands wash

(4) AFRIKAANS:

Werkers moet hande was.

workers NEC hands wash

Nie-werkers moet eintlik ook hulle hande was.

not-workers NEC EIGTL also their hands wash

Building on Weingartz & Hohaus (to appear), we suggest that Afrikaans *moet* and Dutch *moeten* are underlyingly weak, unlike their English and German cognates. Within a domain-restriction approach to weak necessity (von Fintel & Iatridou 2008; Rubinstein 2012; Vander Klok & Hohaus 2020), this proposal can be formalised as follows: Afrikaans *moet* and Dutch *moeten* lexically specify for a secondary ordering source, unlike English *must* and German *müssen*, but allow for this secondary ordering source to be empty, unlike English *ought to* and *should*, for instance.

Our focus in this short paper is to present an initial data set that supports such an analysis and invites further research into the variability in strength and the variation between the four languages. We set the discussion of the data against a short background section, Section 2, which introduces some defining characteristics of weak necessity modal expressions and surveys the morpho-syntactic strategies that languages adopt for weak strength. Section 3 presents the data. Section 4 sketches the analysis and directions for future research.

2 Background

As a third descriptive dimension of modal meaning, we take strength here not to be a distinction in force (that is, the distinction between possibility and necessity), nor in flavour (that is, broadly, the distinction between epistemic and root). Weak necessity (WN, henceforth) modal expressions behave like their strong counterparts, and unlike possibility modal expressions, in that they do not allow for the conjunction of mutually exclusive propositions (Rubinstein 2012, 2021), as shown in

(5). They entail possibility, while being entailed by the stronger counterpart (Horn 1972; von Fintel & Iatridou 2008; Rubinstein 2021). This entailment relation gives rise to a scalar implicature to the exclusion of the stronger necessity. The implicature can be overtly reinforced, cancelled, or suspended, as shown in (6). With Rubinstein (2021), we take these two properties to be defining properties of weak necessity, which allows us to identify it across languages.

(5) Coordination:

- a. #*You **must** / **should** stay but you also **must** / **should** go.*
- b. *You **can** stay but you **can** also go.*

(6) Scalar implicature:

*I **ought to** help the poor.*

- a. Reinforcement: *But I don't have to.*
- b. Cancellation: *In fact, I must.*
- c. Suspension: *Maybe I have to.*

We additionally discuss below a third property of weak modal expressions, relating to their acceptability in contexts in which there are no feasible alternatives (Sloman 1970; Sæbø 2001; von Fintel & Iatridou 2008), illustrated in (7), which is inspired by von Fintel and Iatridou (2008:118).¹

(7) Lack of alternatives:

Context: The only way to get to Harlem by train is the A-line.

- a. #*If you want to go to Harlem by train, you **should** take the A-line.*
- b. *If you want to go to Harlem by train, you **must** take the A-line.*

We frame the formal discussion within the domain-restriction approach to weak necessity (von Fintel & Iatridou 2008; Rubinstein 2012; but see

¹ We however set aside two further properties that have featured in the literature on weak necessity in English, namely, the negotiability of the additional considerations that inform the modal claim (Rubinstein 2012, 2021) and the gradability of these modals (Klecha 2014; Portner & Rubinstein 2016; among others).

Portner & Rubinstein 2016; Agha & Jeretič 2022; inter alia), under which weak strength is a result of a smaller domain of quantification: “Strong necessity modals say that the prejacent is true in all of the favoured worlds, while weak necessity modals say that the prejacent is true in all of the very best (by some additional measure) among the favoured worlds” (von Fintel & Iatridou 2008:118). One possible implementation of such an approach is sketched in (8) to (10). A strong necessity modal like English *must* under this analysis quantifies over the best of the ordered accessible worlds. The domain of quantification for a weak necessity modal like English *should* are the best of those best worlds, ordered with respect to the propositions provided by the secondary ordering source, and hence a subset of the domain of quantification of the strong counterpart.

- (8) For any accessibility relation $a \in D_{\langle s, \langle s, t \rangle \rangle}$, ordering source $o \in D_{\langle s, \langle \langle s, t \rangle, t \rangle \rangle}$, proposition $p \in D_{\langle s, t \rangle}$, and possible world $w \in D_s$,
 \llbracket (strong necessity) $\rrbracket(a)(o)(p)(w) = 1$ iff
 $\forall w' \in \text{BEST}_{(a(w), o(w))}: p(w') = 1$
- (9) For any accessibility relation $a \in D_{\langle s, \langle s, t \rangle \rangle}$, primary ordering source $o1 \in D_{\langle s, \langle \langle s, t \rangle, t \rangle \rangle}$, secondary ordering source $o2 \in D_{\langle s, \langle \langle \langle s, t \rangle, t \rangle, t \rangle \rangle}$, proposition $p \in D_{\langle s, t \rangle}$, and possible world $w \in D_s$,
 \llbracket (weak necessity) $\rrbracket(a)(o1)(o2)(p)(w) = 1$ iff
 $\forall w' \in \text{BEST}(\text{BEST}_{(a(w), o1(w))}, o2) : p(w') = 1$
- (10) a. For any set of worlds $W \in D_{\langle s, t \rangle}$ and set of propositions $P \in D_{\langle \langle s, t \rangle, t \rangle}$: $\text{BEST}(P, W) = \{w \in D_s : \neg \exists w' \in W : w' >_P w\}$
 b. For any set of worlds W and set of propositions $P : \forall w, w' \in W : w >_P w'$ iff $\{p \in P : p(w') = 1\} \subset \{p' \in P : p'(w) = 1\}$
 (see also von Fintel & Heim 2011:61, no. 107)

Languages may lexicalise the above distinction, like English, but may also adopt a morphologically more transparent route: Under this morpho-syntactic strategy, weak necessity is marked on a strong expression, recruiting the verbal morphology that also appears in the consequent of counterfactual conditionals (= consequent x-marking, von Fintel & Iatridou 2008, 2023), or specialised morphology (Vander Klok & Hohaus 2020). Languages may additionally resort to comparative paraphrases to convey weak necessity (Rubinstein 2014). Weingartz and Hohaus (to appear) discuss a fourth, previously unattested strategy: In

Afrikaans and Samoan (Austronesian, Oceanic), the distinction between weak and strong necessity may be left unmarked. Note that these strategies are not mutually exclusive within a language: Dutch, for instance, makes use of all four. We illustrate the lexical and morphological strategy in (11) and (12), respectively (the latter from von Fintel & Iatridou 2008:124). An example of a relevant comparative is in (13).²

(11) DUTCH:

Lexicalised weak necessity with *horen* ‘to befit’:

Je hoort eigenlijk een elektrische toets te doen.
 you WNEC EIGTL a electrical test to do
Om je de waarheid te zeggen, je moet dat doen.
 to you the truth to say you NEC that do
 ‘You should actually do an electrical test. To tell you the truth,
 you have to.’

(12) DUTCH:

Consequent x-marking with *zou, zouden* ‘would’:

a. *Als ik rijk was, zou ik stoppen met werken.*
 if I rich were X I stop with work
 ‘If I were rich, I would stop working.’

b. *Je zou eens Anna Karenina moeten lezen, maar*
 you X sometime NAME NEC read but
het hoeft niet.
 it NEC not
 ‘You should read *Anna Karenina* sometime, but you don’t
 have to.’

(13) DUTCH:

Comparative paraphrase:

Het is beter dat je gaat.
 it is better that you go
 ‘You better go.’

² Abbreviations used in glosses include EIGTL = cognates of German *eigentlich* ‘actually, technically’, NEC = necessity, POS = possibility, REFL = reflexive, WNEC = weak necessity, and X = consequent x-marking.

The unmarked case is the topic of the next section, where our focus is on the strength of English *must* and its cognates in Afrikaans, Dutch, and German. Building on Weingartz and Hohaus (to appear), we highlight an interesting point of variation between these closely related languages: Dutch patterns with Afrikaans rather than English and German, in that it allows weak modal strength to go morphologically unmarked.

3 The case for variable strength

The cognates of English *must* in all three languages are standardly described as necessity modal expressions (Kratzer 1978 et seqq; Zifonun et al. 1997; Diewald 1999; Matthewson & Truckenbrodt 2018; de Villiers 1971; Donaldson 1993; Haeseryn et al. 1997; Huitink 2012; to name but a few for each language). They also pattern as such with respect to the coordination diagnostic for necessity from the previous section, as shown in (14).

(14) Coordination:

a. ENGLISH:

#*Dogs **must** stay outside, and they **must** stay inside.*

b. GERMAN:

#*Bei uns **müssen** Hunde draußen bleiben,*
at us NEC dogs outside stay
*und sie **müssen** im Haus bleiben.*
and they NEC in+the house stay

c. AFRIKAANS:

#*Die hond **moet** buite bly en hy **moet** ook inkom.*
the dog NEC outside stay and he NEC also come.in

d. DUTCH:

#*De hond **moet** buiten blijven en hij **moet** ook*
the dog NEC outside stay and he must also
binnenkomen.
come.inside

While we find Afrikaans *moet*, Dutch *moeten*, and German *müssen* in contexts that target a strong interpretation, like (15), Afrikaans *moet* and Dutch *moeten* are also attested with weak interpretations. Two naturally occurring examples are in (16) and (17). Note that both examples would receive a strong interpretation when translated with German *müssen*.

(15) *Context: According to the law, you have to be over 16 to buy hair dye. Kirri wants to buy some, but Peta informs her:*

a. AFRIKAANS:

Nee, jy kan nie, want jy moet 16 of ouer wees.
 no you POS not because you NEC 16 or older be
 ‘No, you can’t, because you have to be 16 or older.’

b. DUTCH:

Nee, dat kan niet, want je moet 16 jaar of ouder
 no that POS not because you NEC 16 year or older
zijn.
 be

c. GERMAN:

Nein, das geht nicht. Dafür musst du über 16 Jahren
 no that goes not there.for NEC you over 16 years
alt sein.
 old be

(16) AFRIKAANS:

Context: From a horoscope.

Jy moet nou ekstra versoorg tref.
 you NEC now extra precaution meet
 ‘You should now take extra precaution.’ (Donaldson 2002:47)

(17) DUTCH:

Context: An IT consultancy on the recommended frequency of doing a cyber security risk assessments for your company.

*Hoe vaak **moet** ik zo'n assessment eigenlijk doen? Wat is
how often NEC I so+a assessment EIGTL do what is
de optimale frequentie?
the optimal frequency*

'How often should I do such an assessment? What is the optimal frequency?'³

Note that in German, *müssen* does not generate a scalar implicature to the exclusion of a stronger necessity, and the continuations in (18) are contradictory. Compare this to Afrikaans (19), however, where the weak interpretation of *moet* seems to generate an implicature that can be targeted in the continuation both by strong necessity (and strong negative polarity) *hoef* 'to have to' and a strong interpretation of *moet*. In Dutch, in (20), evidence in favour of such an implicature comes from reinforcement with *hoeven* in (20a), but (20b) and (20c) are judged as unacceptable. These data may suggest a preference for speakers of Dutch to keep the strength of *moeten* constant within a sentence, but warrants further investigation.⁴

(18) GERMAN:

*Ich **muss** nachher noch beim Sommerfest vorbeischauen.
I NEC later still at+the summer.party look.by
'I still need to go the summer party.'*

³ QS Solutions, "Een security-assessment, hoe vaak moet je dat eigenlijk doen?" (URL: <<https://qssolutions.nl/blogs/een-security-assessment-hoe-vaak-moet-je-dat-eigenlijk-doen/>>, last accessed 24th January 2024).

⁴ Tine Breban (p.c.) suggests (i) below as an acceptable continuation, instead of (20b), which has the desirable interpretative effect but does not rely on a repetition of *moeten*.

(i) Dutch:

*Strikt genomen is het niet absoluut **noodzakelijk** dat ik ga.
strictly taken is it not absolutely necessary that I go
'In fact, it is not absolutely necessary that I go.'*

- a. Reinforcement: #*Aber **müssen** tue ich das natürlich*
 but NEC do I that naturally
nicht.
 not
 ‘But of course I don’t have to.’
- b. Cancellation: #*Genaugenommen **muss** ich dahin.*
 strictly.taken NEC I thither
 ‘In fact, I have to.’
- c. Suspension: #*Vielleicht **muss** ich das sogar.*
 maybe NEC I that even
 ‘Maybe I even must.’

(19) AFRIKAANS:

*Ek **moet** nog na die partyjie toe gaan!*

I NEC still to the party to go

‘I should still go to the party.’

- a. Reinforcement: *Maar eintlik **hoef** ek nie te gaan nie.*
 But EIGTL NEC I not to go not
 ‘But actually, I don’t have to.’
- b. Cancellation: *Streng gesproke, **moet** ek gaan.*
 strictly spoken NEC I go
 ‘Strictly speaking, I have to go.’
- c. Suspension: *Miskien **moet** ek maar gaan.*
 maybe NEC I but go
 ‘Perhaps, I must.’

(20) DUTCH:

*Ik **moet** later nog naar het zomerfeest.*

I NEC later still to the summer.party

‘I still need to go to the summer party later.’

- a. Reinforcement: *Maar ik **hoef** dat niet.*
 but I NEC that not
 ‘But I don’t have to.’

- b. Cancellation: #*Strikt genomen moet ik daarheen.*
 strictly taken NEC I there.to
 ‘Strictly speaking, I must.’
- c. Suspension: #*Misschien moet ik dat zelfs.*
 maybe NEC I that even
 ‘Maybe I even must.’

The last data set suggestive of weak strength for Afrikaans *moet* and Dutch *moeten* is in (21) and (22). German *müssen* patterns with English *must* when it comes to its acceptability in contexts that establish several alternatives, like (21). Afrikaans *moet* and Dutch *moeten* are judged acceptable (and thus behave like weak necessity *should* in English and German x-marked *sollen* in this context). They are however also acceptable in (22), which targets a strong necessity reading.

(21) *Context: There are three ways to get to Manchester: The back routes, the M6, and through Reading. Bess says that the route using the M6 is best. So, according to her:*

a. GERMAN:

#*Nach Manchester **musst** du die Autobahn nehmen.*
 to NAME NEC you the motorway take
 Lit. ‘To Manchester, you must take the motorway.’

b. AFRIKAANS:

*As jy na Manchester toe gaan, **moet** jy die M6*
 if you to NAME to go NEC you the NAME
gebruik.
 use

c. DUTCH:

*Als je naar Manchester gaat, **moet** je de M6*
 if you to NAME go NEC you the NAME
nemen.
 take

(22) Lack of Alternatives:

Context: There are usually three ways to Manchester: The back routes, the M6, and through Reading. Currently the M6 is the only option; the other roads are closed.

a. GERMAN:

*Nach Manchester **musst** du im Moment die*
to NAME NEC you at+the moment the
Autobahn nehmen.
motorway take

‘To Manchester, at the moment, you must take the motorway.’

b. AFRIKAANS:

*Jy **moet** die M6 gebruik, omdat die ander paaie*
you NEC the NAME use because the other roads
toe is.
closed are

c. DUTCH:

*Je **moet** de M6 nemen, omdat de andere*
you NEC the NAME take because the other
wegen dicht zijn.
ways closed are

We conclude from this brief discussion that Afrikaans *moet* and Dutch *moeten* appear to exhibit variable strength, unlike their English and German cognates.

4 Discussion

To our knowledge, this variability is a previously largely unexplored point of variation within the Germanic languages, which also opens up interesting perspectives for further synchronic and diachronic research, especially in the light of the variability in force discussed in Yanovich (2016) for Old English *motan* and Middle English *moten*. From the perspective of the crosslinguistic typology of the dimension of modal meaning then, not only are flavour and force subject to variability across languages, but strength is as well.

Weingartz (2022) and Weingartz and Hohaus (to appear) suggest that such variability in strength can be systematically derived from a uniform semantics if we assume that some weak necessity expressions allow for an empty secondary ordering source. Under an empty secondary ordering source, the weak necessity claim ends up equivalent to a strong necessity claim with a single ordering source (see also Rubinstein 2013). English *should* and *ought* under such a view would lexically prohibit an empty secondary ordering source. Afrikaans *moet* and, as we tentatively propose here, Dutch *moeten* would lexically specify for a secondary ordering source, as sketched in (9) above, but would also allow for it to be empty, depending on context.

In addition to context, other lexical material may possibly also interact with the strength of a modal expression. The observant reader will have noticed that the weak interpretations of Afrikaans *moet* and Dutch *moeten* co-occur with the discourse particle *eintlik* in Afrikaans, or *eigenlijk* in Dutch, in many of the above examples. While not obligatory throughout, there is a strong preference for its use with weak interpretations, although, in German, the use of *eigentlich* is not enough to bring about a weak interpretation of *müssen*. We will leave the exploration and analysis of this interaction for another occasion, or for the enjoyment of the celebrant. *Proficiat, Hotze!*

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