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PEOPLE CANNOT CHANGE - BUT CARTOON ANIMALS CAN¹

On modality and dynamicity

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1. INTRODUCTION

Almost all Germanic languages: Modal verb with a non-verbal predicate².

- Predicate headed by a preposition, a particle, or an adverb --- directional interpretation

- | | | |
|-----|---|--|
| (1) | Jan mag naar de overkant.
<i>Jan may to the other-side</i>
'John is allowed to go to the other side.' | Dutch |
| (2) | Marie muss nach Hause
<i>Marie must to house</i>
'Mary is allowed to go home.' | German |
| (3) | Jan sil nei Grins ta
<i>Jan will to Groningen to</i>
'John will go to Groningen.' | Frisian
(Hoekstra 1997:143) |
| (4) | Hy moet biblioteek toe
<i>he must library to</i>
'He must go to the library.' | Afrikaans
(Biberauer & Oosthuizen 2011:5) |

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²I will limit myself to the combinations of modals and adjectival, adverbial, particle, and prepositional complements. I will not discuss other combinations, among which are modals with nominal complements (i), complementizer complements (ii) (Biberauer & Oosthuizen 2011), modals with one argument (iii), and Modal Complement Ellipsis (Aelbrecht 2010). For an overview of modals and their complements see Barbiers (1995, 2005), and Aelbrecht (2010, 2013).

- | | | |
|-------|---|--|
| (i) | Het kind mag geen ijsje.
<i>the child may no ice-DIM</i>
'The child is not allowed to have ice cream.' | Dutch
(Barbiers 1995:156) |
| (ii) | Ek sal dat Wanda die boeke bestel
<i>I will that Wanda those books order</i>
'I will make sure that Wanda orders the books.' | Afrikaans
(Biberauer & Oosthuizen 2011:3) |
| (iii) | Dat kan niet.
<i>that can not</i>
'That is impossible.' | Dutch |
| (iv) | Roos wil Jelle wel helpen, maar ze kan niet.
<i>Roos wants Jelle PPI help but she can not</i>
'Roos wants to help Jelle but she can't.' | Dutch
(Aelbrecht 2010:17) |

- (5) Wil mer hetted söle häi. Swiss German
because we would've had-to home (Hoekstra 1997 in Van Riemsdijk 2002:73)
 'Because we would have gone home.'
- (6) Hun skal hjem Danish
she must home (Vikner 1988:17)
 'She must go home.'
- (7) Din mor måste ut. Swedish
your mother must out
 'Your mother must leave.'
- Predicate headed by an adjective --- 'directional' interpretation
- (8) De muur moet blauw. Dutch
the wall must blue
 'The wall must become blue.'
- (9) Dizze muorre moat blau. Frisian
this wall must blue
 'This wall must become blue.'
- (10) Hierdie muur moet blou. Afrikaans
here-that wall must blue
 'This wall must become blue.'

Expected semantics: Semantics of a **modal verb**³ combined with the semantics of a **non-verbal predicate**. At least three unexpected semantic properties in Dutch:

1. Selectional restriction (Barbiers 1995).

- (11) Marie moet groot *(worden).
Mary must big become
 'Mary must become big.'
- (12) Jan moet in Amsterdam *(zijn).
Jan must in Amsterdam be
 'Jan must be in Amsterdam.'
- (13) De fietsen moet beschikbaar *(zijn).
the bikes must accessible be
 'The bikes must be accessible.'

2. Narrow-scope interpretation.

³ Note that both *zullen* en *zouden* in a non-evidential, non-irrealis context is difficult to combine with a non-verbal predicate (v)-(vi). *Zouden* 'would' and *zullen* 'will' are special verbs under all circumstances: The temporal and modal uses of these verbs are difficult to distinguish (Boogaart 2011) and it has been claimed that they only function as temporal auxiliaries (Aelbrecht 2013; for a discussion on this topic see Broekhuis & Verkuyl 2013).

(v) Drie jaar later zou hij weg *(gaan). (vi) Jan zal weg *(gaan).
three years later would he away go *Jan will away go*
 'Three years later he were to leave.' 'John will go away.'

- (14) Someone seems sick.
 i. #‘There seems to be someone who is sick.’ subject narrow scope
 ii. ‘There is someone who seems sick.’ subject wide scope
- (15) Iemand moet naar Parijs.
someone must to Paris
 i. ‘There must be someone who goes to Paris.’ subject narrow scope
 ii. ‘There is someone who must go to Paris.’ subject wide scope
3. Absence of epistemic interpretation (Barbiers 1995:162).
- (16) Jan moet naar Parijs zijn.
Jan must to Paris be
 i. ‘John must be to Paris.’ deontic
 ii. ‘It is necessary that John is to Paris.’ epistemic
- (17) Jan moet naar Parijs.
Jan must to Paris
 i. ‘John must go to Paris.’ deontic
 ii. #‘It is necessary that John is in Paris.’ epistemic

Previous research: Special selectional restriction (Barbiers 1995), special semantics (Eide 2005, Van Riemsdijk 2002).

My claim: The semantics of the sentences in (1)-(17) is fully compositional. I will reanalyze the unexpected properties and claim that they are either **not part of the semantics**, or that they are due to the semantics of non-verbal predicates or modal verbs **in general**.

2. PROBLEM 1

Simplest analysis: The subject has an obligation or a permission to undergo a change (a ‘polarity change’, Barbiers 1995:147). The modal verb does not denote a process or an action so the subject undergoes an *instantaneous* change.

Prediction: All predicates are available if the subject can undergo the instantaneous change.

Problem: Non-verbal predicates combined with modal verbs seem to be semantically restricted. Only absolute adjectival predicates are available; scalar (11) and non-gradable (12) adjectival predicates, and locative predicates (13) are not available (Barbiers 1995:164, Broekhuis 2013:352).

Adjectives (following Broekhuis 2013)

- Gradable adjectives (can undergo comparative and superlative formation; modification by *very*)
 - Scalar adjectives (cannot be modified by *completely*): *big, small*
 - Absolute adjectives (can be modified by *completely*): *empty, full*
- Non-gradable adjectives (cannot undergo comparative and superlative formation): *available, oaken*

Only directional prepositional predicates are available; not locative prepositional ones (Barbiers 1995:168).

Solution: We make the interpretation of an instantaneous change more prominent.

Two flavors of an instantaneous change:

(18) Het hekje moet groen.

the fence-DIM must green

- i. 'The small fence must become green.'
- ii. 'The small fence must be created in green.'

- i. Change of State (COS): subject is presupposed to exist
- ii. Coming into Existence (CIE): subject is not presupposed to exist

Present with verbal predicates as well:

(19) Het hekje moet groen **worden**.

the fence-DIM must green

- i. 'The small fence must become green.'
- ii. 'The small fence must be created in green.'

Distribution of two interpretations:

- COS available when the subject can undergo the change of state.
- CIE available when the subject can undergo the change of state and the subject does not exist yet. The CIE reading is unavailable when the subject is presupposed to exist:

➤ Wide scope interpretation (cf. problem 2)

(20) Twee hekjes moeten groen –

two fences must green

- i. – the others may be blue. COS, CIE
 ii. – #the one on the left and the one on the right. COS, #CIE
- Comparatives (cf. section 2)
- (21) De broek hoeft niet langer (te worden). COS, #CIE
the trousers need not longer to become
 ‘The trousers do not need to become longer.’
- (22) De broek hoeft niet langer (te worden) dan de rok.
the trousers needs not longer to become than the skirt
- i. ‘The trousers does not need to become longer than the skirt.’ COS
 ii. ‘The trousers does not need to be created longer than the skirt.’ CIE
- TMP adverbials.
- (23) Morgen moet het hekje groen (worden). COS, #CIE
tomorrow must the fence green become
 ‘Tomorrow the fence must become green.’
- (24) In Leiden moet het hekje groen (worden). COS, #CIE
in Leiden must the fence must in Leiden green
 ‘In Leiden the fence must be green.’
- (25) Het hekje moet met een kwast groen (worden). COS, #CIE
the fence must with a brush green become
 ‘The fence must become green with a brush.’

How do we make the scalar (11) and non-gradable (12) adjectival predicates, and the locative predicates (13) available?

By changing the context so that the CIE interpretation is prominently present. Hoeksema (1998) already mentioned that the modals with individual-level predicates, which were judged ungrammatical, become much better if the context is changed into drawing a picture. This is exactly the CIE interpretation.

Scalar adjectives

- (26) a. *Marie moet groot/klein/dik/dun.
Mary must big small fat thin
- b. (in a drawing:) De olifant moet groot/klein/dik/dun. CIE
the elephant must big small fat thin
 ‘The elephant must be created big/small/fat/thin.’
- (27) a. *Marie mag intelligent. CIE
Mary may intelligent
- b. (in a play:) Dit personage mag intelligent/grappig/allegaags.⁴

⁴The scalar-absolute distinction is different from the individual-stage level distinction. Individual-level adjectives are freely available as long as they can denote an instantaneous change (16); the apparent

this character may intelligent funny ordinary

‘This character should be intelligent/funny/ordinary.’

*Non-gradable adjectives*⁵

(28) De plinten moeten eiken.

CIE

the plinths must oaken

‘The plinths must be created oaken.’

Locative prepositions (Barbiers 1995:168)

(29) a. *Jan moet in Amsterdam.

Jan must in Amsterdam

b. (In a map:) Het Paleis op de Dam moet in Amsterdam.

CIE

the Palace on the Dam must in Amsterdam

‘The Royal Palace must become in Amsterdam.’

Intermediate summary: The selectional restriction is a matter of pragmatics. The judgments on sentences with scalar and, non-gradable adjectival predicates and locative prepositional predicates are based on the COS interpretation. In a CIE context in which the subject can undergo the instantaneous change, all predicates are available.

contradiction between individual-level predicates and an interpretation of an instantaneous change can be solved by assuming that a stage-level interpretation is coerced in these contexts, or by assuming that individual-level predicates are compatible with change (cf. Van den Wyngaerd 2001:68 on *knowing French*).

⁵Other non-gradable adjectives like *bereikbaar* ‘accessible’, *bereid* ‘willing’, and *beschikbaar* ‘available’ do not have steady judgments (vii)-(viii). The fact that substance adjectives are judged fine, however, shows that non-gradable adjectives as a class are not ruled out.

(vii) ?De woonvoorziening moet bereikbaar voor hulpdiensten.

the living-facility must available for help-services

‘The ‘living facility must be available for emergency services.’

(viii) (On a film set:) De deur moet bereikbaar want Marie moet daar nog doorheen.

the door must accessible because Mary must there yet through

‘The door must become accessible because Mary has to go through it.’

Note that in many of the cases the COS interpretation is also available⁶.

- (30) De plinten moeten eiken. COS
the plinths must oaken
 ‘The plinths must become oaken.’

And note that the adjectives still belong to their original class, based on their modification possibilities.

- (31) a. De olifant moet (*helemaal) groot. scalar
the elephant must completely big
 ‘The elephant must be created completely big.’
 b. Dit personage mag (*helemaal) intelligent. scalar
this character may completely intelligent
 ‘This character may be created completely intelligent.’
 b. De plinten moeten (*erg) eiken. non-gradable
the plinths must very oaken
 ‘The plinths must be created very oaken.’

Extension COS & CIE: Transitive intensional *want & need*⁷.

- (32) a. I want him off my ship. COS
 b. I want him tall.
 i. ‘I want him to become tall.’ COS
 ii. (For a cartoon:) ‘I want him to be created tall.’ CIE
 (33) a. I need him gone. COS
 ‘I need him to be gone.’
 b. I need the text small, and the pictures big. CIE
 (While making a PowerPoint Presentation:) ‘I need the text to be created small, and the pictures to be created big.’

⁶Other mechanisms that help to improve the sentences in (11)-(13) are changing the subject (cf. Vanden Wyngaerd 2001) and adding focus. Both mechanisms result in a coercion of an instantaneous change, either by making it possible for the subject to change (ix)-(x), or by contrasting the present situation with an alternative situation (Rooth 1992) (xi)-(xii).

- | | |
|--|--|
| (ix) a. *Jan hoeft niet luid.
<i>John need not loud</i> | (xi) a. *Het verhaal kan leuk.
<i>the story can fun</i> |
| b. Het refrein hoeft niet luid.
<i>the chorus need not loud</i>
‘The chorus does not have to be loud.’ | b. Het verhaal kan ook leuk. COS
<i>the story can also fun</i>
‘The story can also be fun.’ |
| (x) a. *Marie kan leuk.
<i>Mary can fun</i> | (xii) a. ?De hond moet binnen.
<i>the dog must inside</i>
‘The dog must be inside.’ |
| b. %Sonja zegt het: Afvallen kan ook leuk!
<i>Sonja says it: losing-weight can also fun</i>
‘Soja says so: Losing weight can also be fun!’ | b. De hond moet nog binnen. COS
<i>the dog must yet inside</i>
‘The dog must go inside.’ |

⁷The intended reading in (32)-(35) is one of a secondary predicate; readings of *want* and *need* in combination with a nominal phrase are disregarded. For an overview of all possible interpretations of intensional transitive verbs like *want*, see Harves (2008) and Harves and Kayne (2008).

Again selectional restriction seems to be a matter of pragmatics.

(34) I plan to have lots of kids, and when I do, I want them intelligent/?Republican.
(Svenonius 1994:43).

(35) (In a play:) I want these characters intelligent/Republican. CIE

Next question: Where does the interpretation of the instantaneous change come from?

- Not from the non-verbal complement: Small clauses are stative by definition (Stowell 1981, 1983, Guéron & Hoekstra 1995).
- Not from a selectional restriction of the verb: Modals, *want* and *need* can be combined with stative and non-stative predicates.

(36) a. John must be home.	stative
b. John must go home.	non-stative
(37) a. I want John to be sick.	stative
b. I want John to go home.	non-stative

- Coercion suggests presupposition in the verb: *want* and *need* imply *not having*, modals imply *not having attained*. An instantaneous change can be derived from that (cf. Barbiers 1995:168 on comparatives).

➔ Compositional analysis is saved.

Prediction: **The predicates cannot have a stative interpretation.**

This prediction is not borne out: The locative phrase *binnen* ‘inside’ in (38) can have a non-stative (38)b and a stative (38)c interpretation. So even the notion of an instantaneous change might be a matter of pragmatics.

(38) a. ?De hond moet binnen. <i>the dog must inside</i> ‘The dog must go/stay inside.’	
b. De hond moet nog (naar) binnen. <i>the dog must yet to inside</i> ‘The dog must go inside.’	non-stative
c. De hond moet altijd (#naar) binnen; de kat mag buiten blijven. <i>the dog must always to inside; the cat may outside stay</i> ‘The dog must stay inside; the cat may stay outside.’	stative

Compare Fong (2003) on *remain* in Finnish.

(39) Neva-n suu jä-I Täyssinä-n rauha-ssa venäläis-i-lle
Neva-gen mouth remain-past.3.SG Täyssinä-gen treaty-ine Russian-pl-all

- i. In the treaty of Täyssinä, the mouth of Neva remained in the possession of the Russians.
- ii. In the treaty of Täyssinä, the mouth of Neva went to the possession of the Russians.

➔ Compositional analysis is saved as well.

Consequences: If an instantaneous change is a preferred interpretation, but not a necessary one, then problem 2 and 3 become all the more urgent. Why are there semantic restrictions present if the verb and the predicate do not impose any special semantics on the sentences?

3. PROBLEM 2

Subjects of modal verbs combined with non-verbal complements can always have a narrow⁸-scope interpretation. In the CIE interpretation, this is the only available interpretation; in the COS interpretation, the subjects can have a wide scope and a narrow scope interpretation.

(40) Twee hekjes moeten groen.	CIE
<i>two fences must green</i>	
i. 'There must be created two fences in green.'	subject narrow scope
ii. #'There are two fences and they must be created in green.'	#subject wide scope
(41) Iemand moet naar Parijs	COS
<i>someone must to Paris</i>	
i. 'There must be someone who goes to Paris.'	subject narrow scope
ii. 'There is someone who must go to Paris.'	subject wide scope

This contrasts with subjects of other verbs combined with non-verbal predicates since these subjects can only take wide scope over the verb (Williams 1983:292).

(42) Someone seems to be sick	
i. 'There seems to be someone who is sick.'	subject narrow scope
ii. 'There is someone who seems sick.'	subject wide scope

⁸ The availability of narrow scope does once again show that deontic modal verbs are not control verbs, in contrast to what Ross (1969) and his followers claim. Since May (1977, 1985) it is known that subjects in raising structures can have narrow scope (xiii)a, but not in control structures (xiii)b.

- (xiii) a. Someone from New York is likely to win the lottery.
b. Someone from New York tries to win the lottery.

Wurmbrand (1999) already made use of this fact to argue against Ross (1969) by showing that subjects of deontic modal verbs with verbal complements can have both a narrow and a wide scope interpretation (xiv). The sentences in (28)-(29) show that the same holds for deontic modal verbs with non-verbal complements.

- (xiv) An Austrian must win the next race (in order for Austria to have the most gold medals)
(Wurmbrand 1999)
- i. 'It is necessary that an Austrian (whoever it is) win the next race.' subject narrow scope
 - ii. 'There is an Austrian and it is necessary that he win the next race.' subject wide scope

(43) Someone seems sick.

- | | |
|--|-----------------------|
| i. #‘There seems to be someone who is sick.’ | #subject narrow scope |
| ii. ‘There is someone who seems sick.’ | subject wide scope |

Analysis: Based on the scopal ambiguity that deontic modal verbs with verbal complements show (44), two interpretations are exactly what we would expect.

- | | |
|---|----------------------------------|
| (44) Most students must get outside funding | (von Fintel & Iatridou 2003:175) |
| a. – for the department budget to work out. | subject narrow scope |
| b. – the others have already been given university fellowships. | subject wide scope |

The wide scope reading for the CIE interpretation is for logical reasons unavailable: The subject in the CIE interpretation is not presupposed to exist and therefore cannot scope under the modal.

- | | |
|--|----------------------|
| (45) Twee hekjes moeten groen – | CIE |
| <i>two fences must green</i> | |
| i. – the others may be blue. | subject narrow scope |
| ii. – #the one on the left and the one on the right. | #subject wide scope |

For an analysis of the restriction on other small clauses, see Stowell (1991), Svenonius (1994), and Basilico (2003).

4. PROBLEM 3

Modal verbs with non-verbal complements cannot be interpreted epistemically (46) (Barbiers 1995:153 for Dutch, Eide 2005 for Norwegian).

- | | |
|--|-----------|
| (46) Jan moet naar huis. | |
| <i>Jan must to house</i> | |
| i. ‘John must go home’ | deontic |
| ii. #‘It is necessary that John is going home’ | epistemic |
| (47) Jan moet naar huis zijn. | |
| <i>Jan must to house</i> | |
| i. ‘John must go home’ | deontic |
| ii. ‘It is necessary that John went home’ | epistemic |

First piece of support: Frisian, German, Luxembourgish and Danish responses to (48).

- (48) Could you please answer which of the follow-up sentences are available for the combination of a modal verb and a preposition?
Type of sentence: *John must to home...*

- a. ... *because of his mother.*
Intended interpretation: ‘John’s mother obliges him to go home.’
- b. ... *because I saw him ride his bike.*
Intended interpretation: ‘It is necessarily the case that John is going home because I saw him ride his bike.’

Second piece of support: Reanalysis of possible counterexamples:

- (49) Jij zou toch naar Antwerpen? (Van Riemsdijk 2002:166)
you would part. to Antwerp?
‘Weren’t you supposed to have gone to Antwerp?’
- (50) %Sonja zegt het: afvallen kan ook leuk!
Sonja says it: losing-weight can also fun
‘Sonja says so: Losing weight can also be fun.’
- (51) ‘Het is een fair. Denk je dat alles in de buitenlucht is?’
it is a fair. think you that everything in the outdoors is
‘Het hoeft niet buiten maar het kan wel in tenten zijn.’ (CGN fn007910.150)
it need not outside but it can PPI in tents be
‘It is a fair. Do you think everything is outdoors?’ ‘It need not be outside but it can be in tents.’

Initial hypothesis: Stative/non-stative distinction influences possible interpretation of the modal (cf. Abraham 2001 on terminativity). Epistemic modality might be incompatible with stative predicates. **Falsification:** In section 2 I have shown that a non-stative predicate is available as well (52)b; this sentence cannot yet have an epistemic interpretation (53)a. This is in sharp contrast to the verbal equivalent (53)b.

- (52) a. De hond moet (naar) binnen; de katten mogen naar buiten.
the dog must to inside the cats may to outside
‘The dog must go inside; the cats may go outside.’
- b. De hond moet altijd #(naar) binnen; de katten mogen altijd naar buiten.
the dog must always to inside the cats may to outside
‘The dog must always stay inside; the cats may always go outside.’
- (53) a. De hond moet altijd #(naar) binnen; want ik zie de katten altijd buiten.
the dog must always to inside because I see the cats always outside
‘The dog must always stay inside; the cats may always go outside.’ (deontic)
- b. De hond moet altijd #(naar) binnen zijn; want ik zie de katten altijd buiten.
the dog must always to inside be because I see the cats always outside
‘The dog must always be inside; the cats may always go outside.’ (deontic or epistemic)

What do the counterexamples tell us: The stative-non-stative distinction does not have any influence on the availability of an epistemic interpretation. The absence has to be explained otherwise. Previous analyses:

- Syntax: Height problem (Barbiers 1995:207), only deontic modals can license ellipsis (Aelbrecht 2010:126 on Modal Complement Ellipsis), mismatch between main verb use and epistemic interpretation...
- Semantics: Tense problem (Eide 2005:384)

These accounts do not threaten a compositional analysis: they do not require a special semantics for modals with a non-verbal predicate, but rather, for epistemic modality in general.

5. SUMMARY AND DISCUSSION

The semantics of modal verbs combined with a predicate headed by an adjective, an adverb, a preposition or a particle is fully **compositional**: The subject, the modal verb, which preferably presupposes a change of state, and the fully stative non-verbal predicate result in the interpretation of **the subject undergoing an instantaneous change denoted by the predicate**.

The simplest analysis so far holds:

- The availability of all adjectives and prepositions in certain contexts shows that there is no need for a selectional restriction.
- The narrow scope interpretation of the subject does not tell us that there is a need for a restriction on scope behavior; it can be a more general property.
- The absence of the epistemic interpretation does not tell us that there is a need for a restriction on modal interpretations; it can be a more general property.

Further questions:

- Does this analysis hold for languages other than Dutch?
- How can we explain the unavailability of modal verbs combined with adjectival predicates in certain languages?
- Can the analysis be carried over to *want & need*?
- How about the application of the bounded lattice for resultatives? Vanden Wyngaerd (2001) argues against Hoekstra's (1992) restriction on individual-level adjectives by

claiming that the restriction on absolute adjectives holds for resultative phrases as well (54)-(55). The minimal pairs with (54)'-(55)' show that Vanden Wyngaerd's claim deserves closer investigation.

- (54) De tanks hebben de sporen *diep/plat gereden. (54)' Frank steekt de put diep.
the tanks have the tracks deep flat driven Frank digs the well deep
 'The tanks have driven the tracks deep/flat.' 'Frank digs the well deep.'
- (55) Max heeft me *blij/suf gekieteld. (55)' Max zingt zich blij.
Max has me happy/dopey tickled Max sings SE happy
 'Max tickled me happy/dopey.' 'Max sings himself happy.'

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