

Periphrastic morphology, verb clusters, and verb movement

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CRISSP/KU Leuven-Brussel, 27 May 2016

1. The problem

Continental West-Germanic (CWG) verb clusters show lots of variation (intra/inter dialectal)

- | | | | | | | | | |
|------------|-------|---------|---|-------------------|-------------------|-------------------|--------------|--|
| (1) | a. | ... dat | Tasman het | Zuidland | heeft | ge-vond-en | (1-2) | |
| | | | COMP | the South.Land | AUX.TEMP:3SG | GE-find-PART | | |
| | | | '... that Tasman found the South Land.' | | | | | |
| | or b. | | | | ge-vond-en | heeft | (2-1) | |
| (2) | a. | ... dat | Tasman het | moet | heb-ben | ge-vond-en | (1-2-3) | |
| | | | COMP | it | AUX.MOD:SG | AUX.TEMP-INF | GE-find-PART | |
| | | | '... that Tasman must have found it.' | | | | | |
| | or b. | | | ge-vond-en | heb-ben | moet | (3-2-1) | |
| | or c. | | | ge-vond-en | moet | heb-ben | (3-1-2) | |
| | or d. | | | moet | ge-vond-en | heb-ben | (1-3-2) | |
| <i>but</i> | e. | * | | heb-ben | moet | ge-vonden | (2-1-3) | |
| <i>and</i> | f. | * | | hebben | ge-vond-en | moet | (2-3-1) | |

Relevant languages/dialects

- (3) German, Low Saxon, Dutch, Frisian, West-Flemish, Luxemburgish, Swiss German, Afrikaans

Types of clusters (defined by nr 1 element)

- (4)
- temporal auxiliary (Dutch *hebben* 'have', *zijn* 'be')
 - voice auxiliary (Dutch *worden* 'become')
 - modal auxiliary (Dutch *moeten* 'must', *kunnen* 'can', *willen* 'want', *zullen* 'shall')
 - aspectual/postural auxiliary (Dutch *gaan* 'go', *lopen* 'walk', *zitten* 'sit')
 - ECM verb (Dutch *zien* 'see', *horen* 'hear', *laten* 'let')
 - raising verb (Dutch *schijnen* 'seem', *lijken* 'seem')
 - control verb (Dutch *proberen* 'try', *vergeten* 'forget')

Problems

- (5)
- a. why variation?
 - b. how to derive it
 - c. what are the limits

Standard approach

- (6)
- a. syntactic derivation (verb movement and adjunction, XP-movement)
 - b. variation: *type of movement, headedness/direction of movement, category (VP/vP/IP)*

Challenge

- (7)
- a. how can this be a function of Merge (i.e. avoid *ad hoc* operations)
 - b. resorting to head movement in Narrow Syntax is questionable
 - c. what is the status of a 'cluster' in minimalism?

Solution

- (8)
- a. clusters are never generated in Narrow Syntax
 - b. layered derivations and postsyntactic morphology

2. Syntactic elements

Narrow syntax

- (9) Numeration > Merge > hierarchical structure > spell-out (incl. morphology)
 unordered 'ordered' linear string

Syntactic analysis

- (10) string > > > set of elements
 typically the *words* in the string

But we know these elements can be multi-word elements

- (11) [the captain] found [the south land] 7 words, 3 elements

Arguments for grouping elements

- (12) - syntactic constituency (behavior as a unit)
 - simpler derivation (avoiding parallel lines of derivation)

What I conclude from this

- (13) a. the numeration is not homogeneous (morphemes, words, phrases, clauses)
 b. derivations are networks of derivations (layered derivations)

Relevance for verb cluster research

- (14) a. standard approaches assume cluster formation in narrow syntax
 (tacitly assuming the elements in the numeration to be words)
 b. leads to ad hoc operations like verb raising (V-to-V adjunction)
 c. as well as to unproductive questions (headedness OV/VO, direction of movement)

3. The Dutch relative past ('perfect')

- (15) heeft gevonden / gevonden heeft 'found' (cf. (1))

Assumptions about morphology

- (16) a. morphology after syntax (realizational morphology)
 b. syntactic elements are (i) lexemes (ii) features/operators
 c. features end up on lexemes (feature sharing, Agree, details irrelevant)
 d. syntactic terminal (lexeme + features) replaced by a form from the paradigms
 e. paradigms are structured (crosstables with cells where features intersect)

Cells in a paradigm can be filled by periphrastic expressions (Robins 1959:124, Benveniste 1965)

TENSE	VOICE	ACTIVE	PASSIVE
PRESENT		laudat	laudatur
IMPERFECT		laudabat	laudabatur
PERFECT		laudavit	laudatus est

PERSON	NUMBER	SINGULAR	PLURAL
1.		eča ba	eča ba:n
2.		eča	eča:n
3. human masc.		ečaii	eča:n
3. human fem.		eču bo	eča:n
3. animate		eči bi	ečie(n)
3. inanimate		eči bi:la / eči:la	ečitsan

(17) Latin tense/voice paradigm

(18) Burushaski present tense paradigm (Lorimer 1935:245)

What are the features in the 'perfect' ?

(17) opposition **heeft gevonden ~ vond** [find:PAST.SG]

Choice not determined by aspect

- (18) a. ik **heb** i. *urenlang* soep **ge-get-en** (periphrastic, atelic)
 I AUX.TEMP:1SG for.hours soup GE-eat-PART
 'I ate soup for hours.'
- ii. *in 1 minuut* de soep op **ge-get-en** (periphrastic, telic)
 in 1 minute the soup PRT GE-eat-PART
 'I ate the soup in 1 minute.'
- b. ik **at** i. *urenlang* soep (simple past, atelic)
 I eat:PAST.SG for.hours soup
 'I ate soup for hours.'
- ii. *in 1 minuut* de soep op (simple past, telic)
 in 1 minute the soup PRT
 'I ate the soup in 1 minute.'

Only factor: cotemporaneity/anteriority w.r.t. reference point

(19) a. Kijk! Ik **heb** het **ge-vond-en**
 look:IMP I AUX.TEMP:1SG it GE-find-PART
 'Look! I found it.'

b. * Kijk! Ik **vond** het
 look:IMP I find:PAST.SG it

- (20) Toen ik thuis kwam ...
 when I home come:PAST.SG
 a. * ... **heeft** hij **ge-slap-en**
 AUX.TEMP:3SG he GE-sleep-PART
 b. ... **sliep** hij
 sleep:PAST.SG he
 'When I came home, he was sleeping.'

		relation to ref. point	
		anterior	cotemp
form	periphr	(19a)	(20a)
	simple	(19b)	(20b)

Anteriority w.r.t. reference point in the past: chance clausal tense features

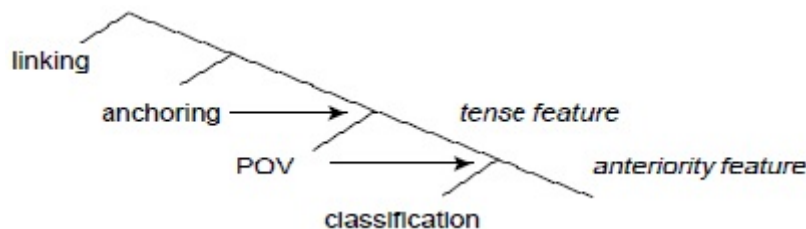
(21) Toen ik thuis kwam **had** hij **ge-slap-en**
 when I home come:PAST.SG AUX.TEMP:PAST.SG he GE-sleep-PART
 'When I came home, he had [already] slept.'

NB English and German are different

- (22) English: (19b) fine > simple past includes anteriority (perfect includes the here-and-now)
 German: (20a) fine > opposition simple past/perfect lost (periphrastic tense generalized)

Features involved: TENSE and ANTERIORITY (Wiltschko 2014: ANCHORING and POINT OF VIEW)

(23)



Paradigm

(24)

TENSE	POV	UNMARKED	ANTERIOR
PRESENT		vindt	heeft gevonden
PAST		vond	had gevonden

Interim conclusion

- (25) a. the parts of the periphrastic past have no intrinsic meaning (noncompositional)
- b. it is a periphrastic expression of a particular feature combination
- c. syntactically relevant elements are (i) the lexeme, (ii) the features (anchoring/POV)
- d. periphrasis is morphological, not syntactic
- e. neither the auxiliary, nor the participle is an element in the numeration (just the lexeme)

NB the nonfinite paradigm is different

- (26) Hij beweert-t [toen ik thuis kwam **ge-slap-en te heb-ben**]
 he claim-3SG when I home come:PAST.SG GE-sleep-PART INF AUX.TEMP-INF
 ‘He claims to have been sleeping when I came home.’

This, too, is a morphological fact: no past tense infinitive form in Dutch

- (27) *sliep-en [sleep:PAST-INF]

4. The passive in Dutch

Uses the same participle

- (28) ... dat het Zuidland { **ge-vond-en werd / werd ge-vond-en** } (2-1/1-2)
 COMP the South.Land GE-find-PART AUX.PASS:PAST.SG
 ‘... that the South Land was found.’

Underscores the noncompositional character of the periphrastic forms

- (29) anteriority/voice is not a feature of the participle, but of the periphrastic complex

Anterior (relative past) passive: auxiliary zijn ‘be’

- (30) Kijk! Het Zuidland is / *werd ge-vond-en
 look:IMP the South.Land AUX.TEMP:SG / AUX.PASS:PAST.SG GE-find-PART

Features involved

- (30) anchoring, point of view, voice

Passive paradigm (cf. active paradigm (24))

- (31)

TENSE	POV	UNMARKED	ANTERIOR
PRESENT		wordt gevonden	is gevonden
PAST		werd gevonden	was gevonden

Conclusion

- (32) periphrastic tense and voice clusters are single lexemes in Narrow Syntax

What do we need to explain the variation?

- (33) some flexibility in the linearization of multi-word morphological items

5. Other clusters in Dutch (cf. (4))

These are different

- (34) a. more clearly compositional
- b. other word order properties
- c. easily combined with temporal/voice clusters and with each other

Word order

(35) predominantly ascending (1-2), especially with longer clusters

Combinability

- | | | |
|----------------------------|-----------------------------|---------------------------|
| (36) a. *temp+temp | (37) a. mod+mod | (38) asp/ECM/rais/contr + |
| b. *pass+pass | b. mod+temp | a. temp (some order) |
| c. *temp+pass (order irr.) | c. mod+pass (this order) | b. pass (this order) |
| | d. mod+asp/ECM/rais/control | c. asp etc. (some order) |

So these must be

- (37) a. presyntactic (output of separate derivation feeding the Numeration)
 b. or pseudo-clusters (i.e. constituent elements are elements in the Numeration)

6. The IPP-effect

Infinitive replacing expected participle

- (38) a. ... dat Tasman het heeft { ge-wil-d / *wil-len }
 COMP Tasman it AUX.TEMP:3SG GE-want-PART / want-INF
 ‘... that Tasman wanted it.’
- b. ... dat Tasman het heeft { *ge-wil-d / wil-len } vind-en
 COMP Tasman it AUX.TEMP:3SG GE-want-PART / want-INF find-INF
 ‘... that Tasman wanted to find it.’

Now recall

- (39) a. the temporal auxiliary does not exist in Narrow Syntax
 b. *willen vinden* ‘want find’ is either a presyntactic cluster or no cluster (cf. (37))

No separation possible > suggests single item status (presyntactic cluster)

- (40) a. * Vind-en heeft Tasman het niet wil-len
 find-INF AUX.TEMP:3SG Tasman it NEG want-INF
 (intended: ‘Tasman did not want to FIND it.’)
- b. * Wil-len heeft Tasman het niet vind-en
- c. * ... dat Tasman het vind-en heeft wil-len (3-1-2)
 COMP Tasman it find-INF AUX.TEMP:3SG want-INF
 (intended: same as (38b))
- d. * ... dat Tasman het wil-len heeft vind-en (2-1-3)

IPP-effect (cf. also anonymous under review)

- (41) No *ge*-marking with verb clusters

Explains absence of IPP in

- (42) a. dialects without *ge*-participles (Hoeksema 1980, Lange 1981, VandenWyngaerd 1989)
 b. clausal embedding (extraposition)

Control verb cluster (‘verb raising’ vs. ‘extraposition’)

- (43) a. ... dat Tasman het Zuidland **probeer-t te vind-en** (‘VR’)
 COMP Tasman the South.Land try-3SG INF find-INF
- b. ... dat Tasman **probeer-t** [het Zuidland **te vind-en**] (‘EXTR’)
 COMP Tasman try-3SG the South.Land INF find-INF
 ‘... that Tasman is trying to find the South Land.’
- (44) a. ... het Zuidland **heeft prober-en te vind-en** (IPP)
 the South.Land AUX.TEMP:3SG try-INF INF find-INF
- b. ... **heeft ge-probeer-d / *prober-en** het Zuidland **te vind-en**
 AUX.TEMP:3SG GE-try-PART / try-INF the South.Land INF find-INF
 ‘... [that Tasman] tried to find the South Land.’ (*IPP)

Derivation

- (45) a. ‘verb raising’
presyntactic cluster > single element in Numeration > acquires features
anteriority feature > periphrastic morphological realization > no *ge-* by (41)
- b. ‘extraposition’
no presyntactic cluster > control verb is separate element in Numeration > (41) d.n.a.

Theoretical option: no presyntactic cluster formation (37b)

- (46) a. this predicts: no IPP = ‘third construction’ (mix of ‘verb raising’ and ‘extraposition’)
- b. ... het Zuidland **heeft** **ge-probeer-d** **te** **vind-en** (third constr)
the South.Land AUX.TEMP:3SG GE-try-PART INF find-INF
‘... [that Tasman] tried to find the South Land.’

This presupposes (not crucially)

- (47) base generation of arguments in grammatical function positions

7. Deriving possible word orders

Two-verb clusters

- (48) a. morphological realization of a **single lexeme**
b. no fixed order (33): variation 1-2 / 2-1

Three-verb clusters, 1 = temporal auxiliary

- (49) a. presyntactic cluster: morphological realization of a **single syntactic element** (VC)
b. order in VC may be 2-3 or 3-2
c. IPP-effect applies
d. this predicts realization as 1-[2-3], 1-[3-2], [2-3]-1, [3-2]-1, but not 2-1-3 / 3-1-2
- | | |
|---|-----------------------------|
| 1-2-3 common in Dutch | 2-1-3 not attested with IPP |
| 1-3-2 common in German | 3-1-2 not attested with IPP |
| 2-3-1 common in East Flemish/Antwerp area | |
| 3-2-1 attested with IPP in Achterhoeks | |

- (50) a. pseudocluster: **two separate lexemes in Narrow Syntax**
b. anteriority feature realized on higher lexeme: no IPP-effect
c. predicts [1-2]-3, [2-1]-3, 3-[1-2], 3-[2-1], but not 1-3-2 / 2-3-1
- | | |
|--|--------------------------------|
| 1-2-3 Dutch third construction (46) | |
| 2-1-3 common in Bavarian/Swiss German/Luxemburgish/Plautdietsch (51) | |
| 3-1-2 attested in East Netherlandic dialects | 1-3-2 not attested without IPP |
| 3-2-1 common in German/Low Saxon | 2-3-1 not attested without IPP |

Salzmann (2016) facts

- (51) ... ob-s de hollänesch **ge-leier-t** **hues** **schwätz-en** (2-1-3) Luxembourgish
COMP:INT-2SG you Dutch GE-learn-PART AUX.TEMP:2SG speak-INF
‘... whether you learned to speak Dutch.’
(Salzmann 2016 shows that 3 is not a clausal complement, as it participates in *zu*-shift.)

Three-verb clusters, 2 = temporal auxiliary (and 1, say, a modal auxiliary)

- (52) a. pseudocluster: **two separate lexemes in Narrow Syntax**
b. anteriority feature realized on the lower lexeme
c. predicts 1-[2-3], [3-2]-1, 1-[3-2], [2-3]-1, but not 2-1-3 / 3-1-2
- | | |
|--|-------------------------------------|
| 1-2-3 common in Dutch | |
| 3-2-1 common in German/Frisian | 2-1-3 not attested (Schallert 2014) |
| 1-3-2 common in Dutch/German | 3-1-2 common in Dutch |
| 2-3-1 not attested? (excluded by FOFC) | |

Unexpected 3-1-2 order

- (53) ... dat Tasman het Zuidland **ge-vond-en moet heb-ben** (3-1-2)
COMP Tasman the South.Land GE-find-PART AUX.MOD:SG AUX.TEMP-INF
'... that Tasman must have found the South Land.'

This forces an additional ordering statement

- (54) PF-linearization (Dutch): the participle may shift to the left

Three-verb clusters, no temporal/voice auxiliaries

- (55) a. many options (single lexeme [presyntactic cluster], three lexemes [pseudocluster], or mix)
b. few options predict the possibility of 2-1-3 / 3-1-2
2-1-3 not attested
3-1-2 marginal in Dutch (but there should be signs of pseudocluster status)

Bech's generalization (Bech 1955)

- (56) mixed clusters are ascending-descending (e.g. 1-2-|-4-3, 1-|-4-3-2) German
a. ... die den Infinitiv **würd-en hab-en regier-en kön-nen** (1-2-4-3)
REL:PL DET:ACC infinitive MOD-PL AUX.TEMP-PL govern-INF MOD-INF
b. ... die den Infinitiv **würd-en regier-en kön-nen hab-en** (1-4-3-2)
REL:PL DET:ACC infinitive MOD-PL govern-INF MOD-INF AUX.TEMP-PL
'... [verbs] that would have been able to govern the infinitive.'
1-[3-2] + ANTERIOR realized as 1-(2)-[4-3]-(2)

8. Restructuring restructuring

Restructuring/pruning

- (57) construction of infinitival complementation functioning like a single clause with a single verbal core

Standard approaches

- (58) restructuring is a function of a. verb-to-verb adjunction ('verb raising', Evers 1975)
b. subcategorization (Wurmbrand 2001)
restructuring: verb selects VP
nonrestructuring: verb selects vP/TP/CP

But here: it follows trivially from derivation layering (presyntactic cluster formation)

- (59) presyntactic cluster is a single element in the Numeration (hence also in Narrow Syntax)
> no connection with verb raising or syntactic category

Diagnostics for restructuring

- (60) a. long passive (cluster acts as passivized verb)
✓German, ✗Dutch
b. matrix scope of embedded clause material
should correlate with a., but ✓German, ✓Dutch

Long passive

- (61) ... dass die traktor-en zu reparier-en versuch-t wurd-en
COMP DET:NOM.PL tractor-PL INF repair-INF try-PART AUX.PASS:PAST-PL
'... that they tried to repair the tractors.' (German, Wurmbrand 2001:19)
(62) * ... dat de tractor-en ge-probeer-d werd-en te reparer-en
COMP DET:PL tractor-PL GE-try-PART AUX.PASS:PAST-PL INF repair-INF
(intended) '... that they tried to repair the tractors.' (Dutch)

Postsyntactic morphology approach

(63) success/failure to realize passive morphology on a verb cluster

No cluster: passivization of the higher verb

(64) intraposition/extraposition of the complement clause (Dutch lacks intraposition)

- a. ... dass [die traktor-en zu reparier-en] versuch-t wurd-e
COMP DET:ACC.PL tractor-PL INF repair-INF try-PART AUX.PASS:PAST-SG
'... that they tried to repair the tractors.' (German, intraposition)
- b. ... dass versuch-t wurd-e [die traktor-en zu reparier-en]
COMP try-PART AUX.PASS:PAST-SG DET:ACC.PL tractor-PL INF repair-INF
'... that they tried to repair the tractors.' (German, extraposition)
- c. ... dat ge-probeer-d werd [de traktor-en te reparer-en]
COMP GE-try-PART AUX.PASS:PAST DET tractor-PL INF repair-INF
'... that they tried to repair the tractors.' (Dutch, extraposition)

Scope facts: basic ambiguity

- (65) ... dass er nur einen traktor zu reparier-en vergessen hat
COMP he just INDEF.ACC tractor INF repair-INF forget:PART AUX.TEMP:3SG
'... that he forgot to repair only one tractor.' (only » forget ; forget » only)

Long passive disambiguates (Bobaljik & Wurmbrand 2005)

- (66) ... das nur ein traktor zu reparier-en vergessen wurde
COMP just INDEF.NOM tractor INF repair-INF forget:PART AUX.PASS:PAST.SG
'... that they forgot to repair only one tractor.' (only » forget)

But you get the same effect in Dutch, which has clustering but no long passive

- (67) ... dat hij maar één tractor was vergeten te reparer-en
COMP he just one tractor AUX.TEMP:PAST.SG forget:PART INF repair-INF
'... that he forgot to repair only one tractor.' (only » forget)

Generalization (cf. Bhatt & Keine 2014)

(68) clustering > matrix scope; intraposition/extraposition > embedded scope

Hypothesis on distribution of long passive

- (69) Passive marking only with head-final verb clusters
a. German [zu reparieren versuchen] > [zu reparieren versucht] wurde
b. Dutch [proberen te repareren] ≠ [geprobeerd te repareren] werd

Topicalization: long passive re-emerges (for some speakers)

- (70) % [Vergeten te repareren] (dat) werden alleen de traktor-en
forget:PART INF repair:INF DEM.N AUX.PL only DEF tractor-PL
'They forgot to repair only the tractors.'
> the fronted demonstrative is a place holder for the passivized verb
> the fronted cluster realizes just ANTERIOR, not VOICE

9. Conclusion

- (71) Verb clusters in CWG are consistent with a minimalist syntax (only Merge) provided we
a. extend realizational morphology to periphrastic tenses, and
b. define clustering (and restructuring) as derivation layering

(72) Verb-second (of temporal/voice auxiliary) cannot be an operation of narrow syntax