

# External Pair Merge of $v$ and $T$

the Verb Cluster

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22<sup>nd</sup> Seoul International Conference on Generative Grammar (SICOGG 22)

August 12<sup>th</sup>-14<sup>th</sup> 2020

# Roadmap

- 1 On the TP-Problem in German
- 2 Pair Merge of Heads
  - Pair Merge of Heads Generally
  - The Current Proposal: EPM of  $v$  and  $T$
- 3 Application
- 4 A Remark on Periphrastic Verb Forms
- 5 Conclusion

# On the TP-Problem in German

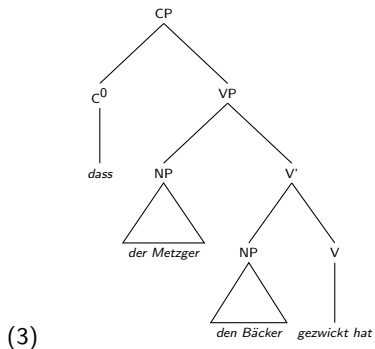
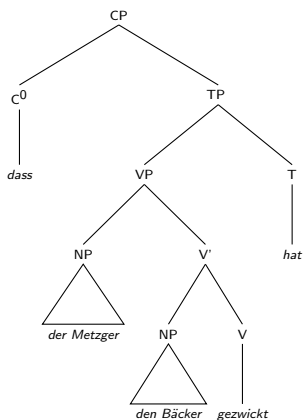
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A long tradition of research smoulders about the question whether or not German has a TP-projection (e.g. Haider 1993; Sabel 2000; Sternefeld 2008).

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- (1) dass der Metzger den Bäcker gezwickt hat  
 that the butcher the baker tweaked has  
 'that the butcher tweaked the baker'



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- the EPP (SPEC-TP needs to be filled), cf. Grewendorf (1988)
- the option of scrambling, which is clause-bound in German
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  - and others.
- As of yet, the debate is unresolved.

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- The head-movement conception in Chomsky 2015, 12: “when V raises to T, a collection of inflectional features, the result is not V affixed to T, but T affixed to V. More generally, the conventional theory of head-raising seems to have the story backwards: the host should be affixed to the raised element. [...] Accordingly, raising of R to  $v^*$  yields an amalgam with  $v^*$  adjoined to R, and the affix is invisible to the labeling algorithm. Note that although R cannot label, the amalgam [R- $v^*$ ] can.”

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- Similar and more reasonings might apply to reversing the heads in (5-a)-(5-d).

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# The Syntax: EPM of $v$ and $T$

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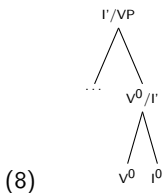
- The head (7) recasts an important GB-precursor: Bayer and Kornfilt (1994, 35), who suggest (8) and remark that “INFL in German can be viewed as a morphological category that attaches to  $V$ , rather than as a terminal category which takes  $VP$  as its complement.”

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## Exploiting the Logical Option EPM of $v$ and $T$

- Key claim: German(-type) languages employ the amalgam (9) (VA, Verbal Affix), while English(-type) languages employs (10)

(9)  $\langle v, T \rangle = VA$

(10)  $[_{TP} T [_{vP} v [ R \dots ]]]$

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- The elusive absence of VP-ellipsis in German could follow in that T is not a free standing morpheme to license it, unlike in English (examples from Repp and Struckmeier 2020, 187):

(14) ANton HASn't found a solution but MEHmet HAS ~~found a solution~~.

(15) \*Leyla WOLLte die Hausaufgaben nicht machen, aber sie HAT.  
Leyla wanted the homework not make but she has  
'Leyla didn't want to do the homework but she has done it.'

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- C attracts  $\langle v, T \rangle$  in German (tentative) and T in English (more in Section 4).

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- Unlike in English (18), German negation (19-a) and adverbial modification (19-b) is unavailable in a position between the verbs within the verb cluster (cf. Reuland 1990 for the same point on Dutch; cf. Haider 1993 on German; both in Sabel 2000):

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       that Cindy the book read probably has

## Deriving Properties of the German Middle Field and Right Sentence Bracket

PP-extrapolation is likewise confined to a position following the verb cluster and cannot linearly intervene between the verbs (Haider 1993 on German; in Sabel 2000):

- (20) a. dass er schon lange nicht mehr  $t_{PP}$  spricht [ $_{PP}$  mit ihr]  
 that he already long not more speak with her
- b. \*dass er schon lange nicht mehr  $t_{PP}$  gesprochen [ $_{PP}$  mit ihr]  
 that he already long not more spoken with her  
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→ All of this is entirely expected if TP is absent, i.e. there is no phrasal adjunction site or NegP between the verbs in German. Instead, the language features  $\langle v, T \rangle$  as the syntax underlying the verb cluster.

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(21) a. Gesprochen mit ihr hat er schon lange nicht mehr  
spoken with her has he already long not more  
'As for speaking with her, he hasn't done that in a while.'

## Deriving Properties of the German Middle Field and Right Sentence Bracket

- Extraposed CPs or PPs in German can undergo fronting along with a verbal projection (21-a). “Reconstruction” of the fronted string into the base position is, however, impossible (20-b)/(21-b) (Haider 2010, 61-63/67-68):

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- If, however, a single (complex) verbal head underlies the verb cluster, these problems dissolve:  $[_{VP} [_{VP} \dots t_{CP/PP} \dots V ] CP/PP]$  undergoes fronting.

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- The  $[u\varphi]$ -feature set is lowered to the verbal amalgam in the morphological component in verb-final clauses, yielding the affix order V-T- $\varphi$  ((*Du*) *schau-te-st* – (you) look-PST-2SG).

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- (Bayer and Kornfilt 1994, 35 note that “V and I are jointly visible at the mother node.”)

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- Consequently, the LA finds  $\langle R, VA \rangle$  in a full argument structure set (26), i.e. no labeling problem arises for  $DP_{EA}$ -VAP and no EPP-raising of the  $DP_{EA}$  is forced, cf. (27). (I.e., subjects can remain VP-internally.)

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- (29) a. Von welchem Künstler<sub>*i*</sub> haben [die frühen Werke *t<sub>i</sub>*] die  
of which artist have [the early works ] the  
besten Preise erzielt?  
best prices gained  
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 besten Preise erzielt?  
 best prices gained  
 'The early works of which artist have gained the best prices?'
- b. Welche Frage<sub>i</sub> hätte [ $t_i$  inkorrekt beantwortet zu  
 which question would-have [ incorrectly answered to  
 haben] dich gestört?  
 have] you annoyed  
 'Which question would it have annoyed you to have answered  
 incorrectly?'

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## Related consequences

- Scrambling does not induce an XP-YP labeling problem, as the LA invariably finds the projection inducer  $\langle R, VA \rangle$  as in (30):

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- A conception within which scrambling is a free, untriggered option – *modulo* interface conditions – (cf. Struckmeier 2016, and the discussion in Haider 2010, 169ff.) squares well with the current analysis.



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- In the current context, it is suggestive to assume that scrambling is A-movement as long as it takes place within the VAP (cf. Haider 2010). That scrambling can be A-movement becomes evident from familiar diagnostics like the fact that it feeds into A-Binding:

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(31) Man hat [die Gäste]<sub>i</sub> einander *t<sub>i</sub>* vorgestellt.  
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- Additionally,  $\bar{A}$ -scrambling could be an option, possibly as adjunction to VAP.

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## Related consequences

- Assume that *that*-trace effects in English are deducible to a labeling failure due to the “weakness of  $[\mu\varphi]$ ” on T in (32) (Chomsky 2015).

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<sup>1</sup>E.g., Paul (1919) in Haider 2010, 88, Grewendorf (1988), Müller (1995); but see Featherston (2005); Kiziak (2010).

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- The reason: Given that T in German is not a  $[u\varphi]$ -bearing head in the syntax to begin with, no labeling failure can be obtained.

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- The reason: Given that T in German is not a  $[u\varphi]$ -bearing head in the syntax to begin with, no labeling failure can be obtained.
- Note that there may be information-structure specific effects (cf. Bayer and Salzmann 2013), or effects of other factors (Salzmann et al. 2013).

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# The Morphology: Periphrastic Verb Forms

- 1 On the TP-Problem in German
- 2 Pair Merge of Heads
  - Pair Merge of Heads Generally
  - The Current Proposal: EPM of  $v$  and  $T$
- 3 Application
- 4 A Remark on Periphrastic Verb Forms
- 5 Conclusion

## The Morphology: Periphrastic Verb Forms

- German periphrastic verbs are morphological realizations of the syntactically synthetic verbal complex  $\langle R, VA \rangle$ .

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<sup>2</sup>Cf. Ackerman and Webelhuth (1998) and many others for precursors in non-minimalist frameworks.

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- Thus part of the amalgam must be featural specifications for [Point of View, POV: unmarked/anteriority] (“aspect,” cf. Wiltschko 2014, 7; in Zwart 2017, 34) and the like. I will assume that POV is located on  $v$ .

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- The combinatorial options between morphological and syntactic periphrasis and synthesis are summarized in the table below with instantiated examples.

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## The Morphology: Periphrastic Verb Forms

Morphology \ Syntax	<b>Periphrasis</b>	<b>Synthesis</b>
<b>Periphrasis</b>	English auxiliary verbs	? → German verb cluster
<b>Synthesis</b>	English affix hopping	German simple verbs

**Table:** Typology of analytical and synthetic syntax and morphology

The table also highlights the problematic gap of combining syntactic synthesis with morphological periphrasis in the typology. It appears natural that this gap be filled.

## The Morphology: Periphrastic Verb Forms

- A verb-final clause is shown in (34), where (34-a) is the underlying syntax, (34-b) the morphological component, and (34-c) the example:



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  - $\{C, \{EA, \{\{IA, R\}, \langle \langle R, \langle v_{[POV:anterior]}, T_{[Tense:present]}\rangle\rangle, [u\varphi]\rangle\}\}\}$
  - weil alle Eisbären gemocht haben  
 since everybody polar bears liked has-3PL  
 ‘...since everybody liked polar bears’

## The Morphology: Periphrastic Verb Forms

How does V-to-C work?

- For lexical finite verbs, we can say that  $\langle R, VA \rangle$  can undergo Internal Pair Merge to C in syntax (as i.a. recently argued by Blümel and Goto 2020), delivering the amalgam  $\langle \langle R, VA \rangle, C \rangle$ .

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  - Something different . . .

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- The  $[u\varphi]$ -set is happy with **one** host.
- Idea: Distributed Deletion (Fanselow and Ćavar 2002) applies to complex moved **heads** and it does so **obligatorily**.

## The Morphology: Periphrastic Verb Forms

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- (37) ~~geschneit~~ hat es geschneit ~~hat~~  
 snowed has it snowed has

# Conclusion

- 1 On the TP-Problem in German
- 2 Pair Merge of Heads
  - Pair Merge of Heads Generally
  - The Current Proposal: EPM of  $v$  and  $T$
- 3 Application
- 4 A Remark on Periphrastic Verb Forms
- 5 **Conclusion**

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- The idea that head movement involves adjunction to the target category (and retains the essential character of the target), might have been an obstacle in the way to an adequate theory of complex head formation.
- Recent ideas about Pair Merge of heads could remove that obstacle and open fresh analytical perspectives: categorically and labeling-wise, head amalgams differ from their parts.

Thank you!

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## Appendix: Conceptual Underpinnings

- The current paper is consistent with the uniformity hypothesis (as in Chomsky 2001; Miyagawa 2017) in that C, T and  $v$  are not only part of a universal set of features, but there is no need to claim that only a subset of these heads is selected for parametric variation we find.

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- Instead, we can say that the way of introducing (mode of Merger) the universal set of features is underspecified (cf., in spirit, Biberauer and Richards 2006): “Same ingredients, different recipes.”
- (This, in turn, raises the question if the set of functional heads are obligatorily exhausted in the process of acquisition and if so, why.)

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- Functional heads are a (though arguably not the only) locus of parametrization, but derivatively so: Parametric differences do not reside in lexical properties of functional heads, but in structural configurations they are part of and the derivational consequences that ensue from these configurations.



## Appendix: $\langle v, T \rangle \neq$ the result of V-to-T

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  - b.  $\{\langle R, v \rangle, \{t_R, NP\}\}$
  - c.  $\{T, \{\langle R, v \rangle, \{t_R, NP\}\}\}$
  - d.  $\{\langle \langle R, v \rangle, T \rangle, \{t_{\langle R, v \rangle}, \{t_R, NP\}\}\}$

- As  $\langle v, T \rangle$  is not formed in French, we expect none of the consequences that characterize German(-type languages), by hypothesis, like lack of an obligatory EPP-effect, the option of scrambling, etc..