Why Germanic VP topicalization does not induce verb doubling

Claim: I argue that the absence of verb doubling with verb phrase topicalization in Germanic languages despite them having V-to-T(-to-C) movement is a consequence of the language-specific ordering of the two operations Chain Reduction (CR, Nunes 2004) and Head Movement (HM, Chomsky 1995, Platzack 2013) both of which take place post-syntactically. While verb doubling languages like Hebrew and Spanish order Head Movement before Chain Reduction which allows the verb to escape the lower VP copy, CR applies before HM in Germanic languages deleting the lower VP copy thereby bleeding verb movement. **Background:** In many typologically diverse languages, e.g. Hebrew, Krachi, Polish, a copy of the lexical verb appears inside the clause in case the VP has undergone movement to the left periphery for information-structural reasons (e.g. topicalization, focalization) (1).

(1) a. [**liknot** et ha-praxim], hi **kanta**.
buy.INF ACC DEF-flowers she buy.PST
'As for buying the flowers, she bought.' (*Hebrew*, Landau 2006)

b. kɛ-[**dɪk**ɛ i-gyo] yɪ ɔkyɪ wʊ ɛ-**dɪk**ɛ
NMLZ-cook PL-yam FOC woman the PST-cook
'The woman only cooked yams.' (*Krachi*, Kandybowicz & Torrence 2016)

c. [**wypić** herbatę] (to) Marek **wypije**, ale …
drink.INF tea TO Marek will-drink but
'As for drinking tea, Marek will drink it, but ….' (*Polish*, Bondaruk 2012)

This copy is often fully inflected while the fronted verb is usually non-finite. Under the Copy Theory of Movement, the presence of two tokens of the same element can be easily accounted for as being the spell-out of more than one copy of a moved element (Abels 2001, Nunes 2004. As it is usually the case that only the highest copy in a movement chain is pronounced, an operation Chain Reduction (Nunes 2004) has been proposed that deletes all but the highest copy at the interface to PF. It has been been suggested that the lower verb copy is nonetheless spelt-out in (1) because it moves to a higher position itself and thereby becomes the highest copy in a second movement chain (cf. *parallel chains*, Aboh 2006, Chomsky 2008, Kandybowicz 2008, Aboh & Dyakonova 2009). This second movement is often assumed to be head movement of the verb to *v*, T, or C. **Puzzle:** It is well-known that Germanic languages usually comprise of this kind of V-to-T(-to-C) head movement (at least in matrix clauses) as evidenced by the fact that the inflected verb appears to the left of negation and VP-adverbs (2).

(2) a. Han **leser** *ikke* bøker
he likes NEG this book.INDEF.PL
'He doesn't like this book.' (*Norwegian*)

b. Vi **sjunger** *ofta* i kyrkan
we sing often in church
'We often sing in church.' (*Swedish*, Platzack 2012:292)

Under the abovementioned account for verb doubling one would thus expect that VP-topicalization results in two pronounced copies of the verb as in the languages above. However, instead of a copy of the verb a dummy verb meaning 'do' appears (3).

(3) a. [Å lese/leser bøker] **gjør** han ikke
to read/reads book.INDEF.PL does he NEG
'Reading books he does not do.' (*Norwegian*)

b. [Sjunger i kyrkan] **gör** vi ofta
sing in church do we often
'Sing in church, we often do.' (*Swedish*, Platzack 2012:292)

Previous Accounts: The accounts of verb doubling languages usually remain silent on languages with dummy verb insertion in VP-fronting. Though there is one recent attempt by LaCara

(2016). He takes head movement in verb doubling languages to be a kind of feature percolation (*conflation*, Hale & Keyser 2002, Harley 2004, 2013) rather than actual movement (because that raises several problems with regard to Chain Reduction and remnant movement). Based thereon, his proposal is that Germanic head movement in contrast to other (verb doubling) languages is actual syntactic movement which is the reason for their distinct behaviour in VP topicalization. This approach correctly predicts that there is only one copy of the verb, however, as LaCara notes, Chain Reduction predicts that this copy should be pronounced inside the clause, not inside the fronted VP. There is thus, no unified account for repairs in VP-fronting cross-linguistically.
Proposal: In light of recent work on how the order of syntactic and postsyntactic operations can give rise to variation between languages (Müller 2009, Arregi & Nevins 2012, Gerogi 2014) I argue that such an ordering difference is at work here. If we treat head movement as a strictly post-syntactic operation (Chomsky 1995, Merchant 2001, Platzack 2013, Zwart 2016) that does not leave copies (Boeckx & Stjepanović 2001, Sauerland & Elbourne 2002) it is free to be ordered with regard to the post-syntactic operation Chain Reduction. I propose that every language has a strict order of the two operations CR and HM and that this order is responsible for whether there is verb doubling or dummy verb insertion with VP fronting. If CR applies before HM (i.e. inbetween the syntactic VP-to-SpecCP movement and the V-to-T(-to-C) movement) in VP fronting, it deletes the lowest copy of the VP including its constituents V and the object DP ①. Subsequent HM of V to *v*/T/C is bled. Only head movement of *v* to T ② and C ③ is possible (4-a) and a dummy verb is inserted into that complex head to enable spell-out of inflectional affixes (4-b) (Subject movement omitted).

(4) a. $[_{CP}\ [_{VP}\ \mathbf{V}\ \text{Obj}\ ]\ [_{C'}\ \underset{\curvearrowleft\ \text{③}\ \curvearrowright}{\text{C}}\ [_{TP}\ \text{Subj}\ [_{T'}\ \underset{\curvearrowleft\ \text{②}\ \curvearrowright}{\text{T}}\ [_{vP}\ v\ [\sout{_{VP}\ \mathbf{V}\ \text{Obj}}\ \text{①}]]]]]]$

b. $[_{CP}\ [_{VP}\ \mathbf{V}\ \text{Obj}\ ]\ [_{C'}\ \underbrace{\text{C-T-}v}_{do}\ [_{TP}\ \text{Subj}\ [_{T'}\ \emptyset\ [_{vP}\ \emptyset\ [\sout{_{VP}\ \mathbf{V}\ \text{Obj}}\ ]]]]]]$

If, on the other hand, CR applies after HM (after both VP-to-SpecCP and V-to-T(-to-C) movement), the lowest V has been moved out of the VP to *v* ①/T ②/C ③ before that VP is deleted ④ (5-a). The lower V copy is therefore no longer part of the VP chain, evades deletion, and is pronounced as the second verb token in the structure, as is the case in Hebrew and other verb doubling languages (5-b).

(5) a. $[_{CP}\ [_{VP}\ \mathbf{V}\ \text{Obj}\ ]\ [_{C'}\ \underset{\curvearrowleft\ \text{③}\ \curvearrowright}{\text{C}}\ [_{TP}\ \text{Subj}\ [_{T'}\ \underset{\curvearrowleft\ \text{②}\ \curvearrowright}{\text{T}}\ [_{vP}\ v\ [\sout{_{VP}\ \mathbf{V}\ \text{O}}\ \text{④}]]]]]]$

b. $[_{CP}\ [_{VP}\ \mathbf{V}\ \text{Obj}\ ]\ [_{C'}\ \text{C-T-}v\text{-}\mathbf{V}\ [_{TP}\ \text{Subj}\ [_{T'}\ \emptyset\ [_{vP}\ \emptyset\ [\sout{_{VP}\ \emptyset\ \text{Obj}}\ ]]]]]]$

That the verb in the fronted VP in Scandinavian can be inflected (3) is due to syntactic Affix Hopping (LaCara 2016) which precedes VP fronting. It is independently required because in embedded clauses verbs are inflected despite not moving to T. If T lowers onto *v*/V inside the VP, it is fronted together with it. However, its lower copy in VP should be deleted when that VP is deleted. I therefore assume that the dummy verb is inserted not because TAM-affixes would be stranded otherwise, but because the finiteness of the clause needs to be expressed overtly.
Prediction: This account predicts that languages without V-to-T movement exhibit dummy verb insertion with VP-fronting (or possibly a gap) because under both orders V would be deleted as part of the lower VP copy. Languages with V-to-T movement may show verb doubling (Hebrew, etc.) or dummy verb insertion (Germanic) depending on whether they have the order HM ≫ CR or the reverse. In other words: Verb doubling is a diagnostic for V-to-T (or another functional head) movement but the absence tereof is inconclusive. **Conclusion:** The present account is able to derive the difference between verb doubling and dummy verb insertion with VP-fronting from interaction of independently suggested post-syntactic operations Chain Reduction and Head Movement.