The cost of external merge

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This paper argues that external merge is not free in probe-goal relations. A phase-based Condition on External Merge (CEM) is proposed that explains a set of syntactic similarities and contrasts between English and Kirundi there-constructions that are unaccounted for under current analyses.

1 English there-construction

Within the Minimalist Program, two mainstream analyses have been proposed to account for there-constructions like (1a-c): expletive insertion and predicate inversion.

(1) a. There arrived few delegates
    b. There will be a contested convention
    c. There were many votes cancelled

Under the expletive insertion analysis (see notably Chomsky 1995), there is a semantically vacuous expletive externally merged in [Spec,TP] to value T’s EPP-feature, as depicted in (2).

(2) [TP there [T’ [vP [VP V DP]]]]

Under the predicate inversion analysis (see notably Hoekstra and Mulder 1990, Moro 1997, Belvin and Dikken 1997), there-constructions like (3a) have the same syntactic derivation as locative inversion constructions like (3b): there is viewed as a locative predicate that raises to the subject position as in (4).

(3) a. There was a beautiful bouquet of flowers
    b. On the table was a beautiful bouquet of flowers

(4) [TP there, [T’ [PredP DP PredP]]]

2 Bjorkman and Cowper (2015)

Bjorkman and Cowper (2015) showed convincingly that both the expletive insertion and predicate inversion analyses face empirical problems. The expletive analysis overgenerates, failing to rule out cases where there insertion is impossible whereas the predicate inversion analysis undergenerates, failing to rule in contexts where there is possible.

2.1 Four empirical issues

First, a transitivity restriction: there-insertion is permitted with unaccusatives and passives as in (1a-c) but not with unergative and transitive verbs. Witness the ungrammaticality of (5a-c):

(5) a. *I gratefully acknowledge insightful comments and suggestions from the audience of the 2016 MOTH conference.
    The usual disclaimers apply.

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(5) a. * There read people the handout / * There people read the handout
   b. * There has someone told a story
   c. * There laughed children / * There children laughed

Second, the transitivity restriction on there-insertion fails in progressive aspect constructions as shown in (6a-c):

(6) a. There were children laughing
   b. There were people reading the handout
   c. There was someone telling a story

Third, a split exists within unaccusative verbs: change-of-state verbs resist there-insertion as shown by the contrast of grammaticality between (7a) and (7b):

(7) a. There arrived/appeared/loomed a strange car
   b. * There melt/fell/vaporized a car.

Finally, there-insertion is sensitive to the stage-level/individual-level predicate distinction (Kratzer 1995): only stage-level adjectives allow there-insertion as illustrated in (8a-b); individual-level adjectives and nominal predicates don’t. Witness (9a-b):

(8) a. There are firemen available
    b. There are firemen asleep

(9) a. * There are firemen tall
    b. * There can be men nurses

2.2 Bjorkman and Cowper’s (2015) account

Bjorkman and Cowper (hereafter B&C) develop a unified analysis of the four empirical issues presented above by making three key assumptions.

First, contrary to the widely adopted expletive analysis, there is not a semantically vacuous expletive; it is a time/event quantifier that requires an event variable in its complement. This semantic requirement will be shown to derive there’s sensitivity to the stage-level/individual-level distinction as well as the definiteness restriction on the associate.

Second, there is externally merged in the [Spec,vP/VoiceP] as depicted in (10) for unaccusative and passive clauses, then raises to [Spec,TP] to value T’s EPP-feature. This accounts for unaccusative and passive there-constructions in (1a-c).

(10) Unaccusative/passive:

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1 The idea that there is not semantically defective goes back to Williams (1994, 2006) who proposes that there and the associate instantiate a subject-predicate relation: “there binds the open variable that makes the predicative NP a predicate, therefore satisfying the θ-Criterion.” (Williams 2006:650). See also Hazout (2004).
Third, *there* is sensitive to the argument structure of the predicate. It can merge to any phrase whose arguments have all been satisfied, *modulo* the syntactic constraint on multiple specifiers in (11).

(11)  
**A Syntactic Constraint of Multiple Specs:**

No multiple externally-merged specifiers within a single phrase.

Under (11), a head can host only one externally merged specifier (Sheenan 2013). *There* can thus merge either (i) with a head that has no other Spec or (ii) with a head whose first Spec moved to that position from lower in the structure, but not (iii) with a head whose first specifier is externally merged.

Option (iii) rules out merge of *there* with active transitive and unergative predicates since their first Spec is already externally merged as in (12). The ungrammaticality of transitive and unergative there-constructions in (5a-c) repeated in (13a-c) follows:

(12)  
**Active transitive/unergative:**

(13)  
  a. * There read people the handout / * There people read the handout  
  b. * There has someone told a story  
  c. * There laughed children / * There children laughed  

Likewise, B&C’s account based on the constraint in (11) predicts well-formedness of progressive clauses in (6a-c) repeated in (14a-c), since *there* is claimed to externally merge in the outer [Spec,AspP] as in (15), the inner Spec hosting a DP *internally* merged from a lower position, [Spec,vP] for (14a-c) or the complement position of V for progressive passive clauses like (14d):

(14)  
  a. There were children laughing  
  b. There were people reading the handout  
  c. There was someone telling a story  
  d. There will have been cake being eaten

(15)  
**Progressive passive:**

Moving to the third puzzle, that is, the fact that change-of-state unaccusatives do not allow *there*, B&C follow Deal’s (2009) assumption that this subclass of unaccusatives have an extra event argument –
a causing event – externally merged as a Spec in the highest projection of the verb domain, which blocks external merge of *there in the outer Spec of that head, in accordance with (11). The contrast of grammaticality between (16a=7a) and (16b=7b) follows:

(16) a. There arrived/appeared/loomed a strange car
    b. * There melt/fell/vaporized a car

Finally, to derive the asymmetry on *there-insertion between stage-level and individual-level predicates illustrated in (17a–b), B&C propose that individual-level predicates lack temporal/event structure that is present with stage-level predicates as represented in (18) where stage-level predicates are headed by a mediating head labelled Predº. The latter semantically introduces a temporal or event variable to be bound by *there.

(17) a. There are firemen available
    b. * There are firemen tall

(18) Individual-level:                               Stage-level:

The assumption that Predº introduces an event variable is what allows *there to merge with stage-level but not individual-level predicates. This accounts for the grammaticality of (17a) and the ungrammaticality of (17b), via a ban on vacuous quantification.

In the same vein, the definiteness restriction on *there-insertion illustrated in (19a) vs. (19b) follows from the quantificational nature of there that requires an individual variable in its domain.

(19) a. There arrived some students
    b. * There arrived this student

2.3 Summary

To recap, B&C’s main proposal is that *there is not an expletive as assumed in the expletive insertion approach but a time/event quantifier that requires an open temporal or eventuality argument.

Second, *there is externally merged to any constituent whose argument structure has all been satisfied, *modulo a general syntactic constraint that bans multiple externally-merged specifiers within a single phrase.

Before moving to Kirundi *there-constructions, I would like to make few comments on B&C’s account, especially the syntactic constraint on external merge in (11). First, I am not aware of any compelling empirical argument for the Multiple Specifier Hypothesis (MSH) that (11) is built upon.

Two sets of facts are often invoked to support MSH: multiple *wh-fronting in Slavic languages and transitive expletive constructions in Icelandic. Yet, these facts can be shown to involve multiple functional categories rather than multiple specs of a single head.

Second, the assumption that a single head cannot host more than one externally merged Spec (under MSH) needs independent motivation. One wonders why merge of *there in the outer Spec is banned when the inner Spec is externally merged as in (12) but allowed when the inner Spec is internally merged as in (15). After all, in both cases, the decision to merge *there is taken when the inner Spec is already filled (whether internally or externally) and subsequent raising of *there to [Spec,TP] results in
identical output for (12) and (15) at the edge of Voice/AspP, with a trace in the outer Spec and a DP in the inner one.

Third, the derivation in (15) where there is externally merged to the outer Spec while the inner Spec is filled by an internally merged DP wrongly predicts sentences like (20), which violate Merge over Move, to be grammatical\(^2\).

(20) There seem many people to [AspP t, t [be following Hillary Clinton]]

Under (11), the DP many people externally merged into [Spec,vP] of the embedded verb internally merges to [Spec,AspP]; then there externally merges into the outer [Spec,AspP] in accord with (11). Next, there internally merges/moves to matrix [Spec,TP] and the associate to the embedded [Spec,TP], in accord with Chomsky’s (1995) Phonological Condition. The latter requires subject raising to [Spec,TP] prior to object raising to the outer [Spec,vP] in simple transitive constructions. (20) instantiates a similar derivational path but the result is surprisingly ungrammatical. The question is: why?

Finally, the constraint in (11) makes incorrect predictions beyond English. As shown in the next section, Kirundi (Bantu) sometimes allows external merge of there with (non-progressive) unergative and transitive predicates, but not always.

3 Kirundi there-construction

3.1 Transitivity and definiteness restriction

Sentence (21a) is an unaccusative verb construction. (21b) shows that Kirundi is a pro-drop language: the subject can be freely omitted.

(21) a. abanyeshule benshi ba-á-ra-je\(^3\)
   students many 1SA-PST-AF-come
   ‘many students came’

b. pro ba-á-ra-je
   pro 1SA-PST-AF-come
   ‘they came’

Three markers are highlighted in the verb morphology: the subject agreement marker, the tense head, and most importantly the particle -ra- dubbed “anti-focus” (AF) marker in Ndayiragije (1999). This marker occurs in out-of-the-blue contexts and asserts the truth-value of a proposition. Thus, (21a) is appropriate as an answer to questions like “what happened?” or “did many students come?” or “is it the case/true that many students came?”, but not to “who came?” or “how many students came?” or “when/why did many students come?”.

Sentence (22a) is the existential there-counterpart to (21a) where there is expressed by the locative agreement marker ha- merged in the subject-verb agreement marker position in (21a) with the associate

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\(^2\) Hazout (2004) and Williams (2006) argue that sentences like (20) where the associate raises to [Spec,TP] are ungrammatical because the associate does not occupy a possible predicate position. Yet, if the associate is a predicate rather than an argument then, for that very reason, the sentence there seem to be many people following Hillary Clinton should be ungrammatical due to a violation of the θ-Criterion: the embedded verb follow has an external θ-role to assign, yet no external argument is available to carry it since in Williams’s (2006) analysis, the associate is a predicate, not an argument. And it can’t be both.

\(^3\) The following abbreviations are used in the glosses: 1 = Noun class, SA = subject-verb agreement marker, PST = past tense, AF = anti-focus marker, PRES = present tense.
occurring post-verbally. (22b) illustrates the definiteness restriction: the associate must be indefinite as in English.

(22) a. pro ha-á-ra-je abanyeshule benshi
    pro LOC-PST-AF-come students many
    ‘there came/arrived many students’

b. * pro ha-á-ra-jeabo abanyeshule
    pro LOC-PST-AF-come those students
    * ‘there came/arrive those students’

Sentences (23a) and (24a) contain unergative and transitive verbs, respectively. There-counterparts to (23b) and (24b) are all ungrammatical like their English equivalents.

(23) a. abanyeshule benshi ba-á-ra-tamvye
    students many 1SA-PST-AF-dance
    ‘many students danced’

b. * pro ha-á-ra-tamvye abanyeshule benshi
    pro LOC-PST-AF-dance students many
    * ‘there danced many students’

(24) a. abanyeshule benshi ba-á-ra-sómye ibitabo
    students many 1SA-PST-AF-read books
    ‘many students read books’

b. * ha-á-ra-sómye ibitabo abanyeshule benshi
    LOC-PST-AF-read books students many
    * ‘there read books many students’

Thus, the Kirundi facts presented so far are similar to their English counterparts and predicted by B&C’s account. The next section shows some complexity triggered by the deletion of the anti-focus ra from the verb.

3 Focus effect

Sentences (25a-b) are replicas of (21a) and (22b), with the anti-focus marker ra deleted from the verb. This results in ungrammaticality.

(25) a. * abanyeshule benshi ba-á-je
    students many 1SA-PST-come
    * ‘many students came’

b. * abanyeshule benshi ba-á-tamvye
    students many 1SA-PST-dance
    * ‘many students danced’

With transitive verb constructions, ra deletion does not affect the grammaticality of the sentence; yet, it has a semantic effect: the object receives a contrastive focus reading, as illustrated in (26).
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(26) abanyeshule benshi ba-á-sómye ibitabo
  students many ISA-PST-read books
  ‘many students read books (e.g. not journals)’

The generalization then is that Ra deletion is allowed if and only if there is a post-verbal focused constituent in the sentence; the focused phrase can be an argument or an adjunct. Thus, (25a-b) become well-formed if the verb is followed by a focused adjunct as in (27a-b)⁴.

(27) a. abanyeshule benshi ba-á-je kare
    students many ISA-PST-come earlier
    ‘many students came earlier (e.g. not late)’

b. abanyeshule benshi ba-á-tamvye mu ijoro
    students many ISA-PST-dance in night
    ‘many students danced in the evening (e.g. not during the day)’

With that generalization in mind, let us see what happens when Ra-deletion occurs in there-constructions. Interestingly enough, both the transitivity and definiteness restrictions no longer hold. Unergative and transitive verbs freely allow there-insertion, and their associate receives a contrastive focus reading as shown in (b) sentences of (28-29). The (c) sentences show that the definiteness restriction falls off.

(28) a. abanyeshule benshi ba-á-ra-tâmvye
    students many ISA-PST-AF-dance
    ‘many students danced’

b. pro ha-á-tamvye abanyeshule benshi
   pro LOC-PST-dance students many
   ‘many (not few) students danced’ [Lit: ‘there danced many students’]

c. pro ha-á-tamvye Yohani
   pro LOC-PST-dance John
   ‘John (e.g. not Peter) danced’ [Lit: ‘there danced John’]

(29) a. abanyeshule benshi ba-á-ra-sómye ibitabo
    students many ISA-PST-AF-read books
    ‘many students read books’

b. pro ha-á-sómye ibitabo abanyeshule benshi
   pro LOC-PST-read books students many
   ‘many (not few) students read books’ [Lit: ‘there read books many students’]

c. pro ha-á-sómye ibitabo Yohani
   pro LOC-PST-read books John
   ‘John (e.g. not Peter) read books’ [Lit: ‘there read books John’]

⁴ When there is more than one constituent after the verb, the one situated furthest to the right of the verbal phrase is the focused constituent and there can only be one post-verbal focused constituent per clause.
Note also that in transitive expletive constructions (29b-c), the VOS word order is rigid and the focus effect shows up on the associate, not the object. Changing the linear order to VSO for the object to bear the focus feature leads to ungrammaticality as shown in (30a-b):

(30)  
a.* pro ha-á-sómye abanyeshule benshi ibitabo  
pro LOC-PST-read students many books  
[Lit: ‘there read many students books (e.g. not journals)’]

b. * pro ha-á-sómye Yohani ibitabo  
pro LOC-PST-read John books  
[Lit: ‘there read John books (e.g. not journals)’]

3.3 A unified account: TP-internal focus

In an extensive discussion of Kirundi transitive expletive construction (TEC) and Object Subject Reversal (OVS) construction, Ndayiragije (1999) argued for the availability of a functional category FocP in between TP and vP whose EPP-feature triggers overt movement of the (logical) subject to its Spec as depicted in (31):

(31)  
After A’-movement of Subj into [Spec,FocP], a locative pronoun pro is externally merged in [Spec,TP] to value T’s EPP and phi-features, thus resulting in locative agreement on T.  
Crucially, [Spec,FocP] is an A’-position; therefore it blocks further raising of Subj to [Spec,TP] as this would result in improper movement from an A’- to an A-position. Extensive evidence is discussed in Ndayiragije (1999) for the A’-status of [Spec,FocP]. Some pieces are given below.  
First, the logical subject of TEC can bind an anaphor that linearly precedes it as illustrated in (32b) where the reflexive anaphor is underlined.

(32)  
a. Mariya a-á-ra-i-ravye mu icirore  
Mary 1SA-PST-AF-self-look in mirror  
‘Mary watched herself in the mirror’

b. pro ha-á-i-ravye mu icirore Mariya  
pro LOC-PST-self-look in mirror Mary  
‘Mary (e.g. not Liz) watched herself in the mirror’

5 Ndayiragije (1999) stipulated that [Spec,FocP] in (31) is on the right side of its head in order to account for the VOS word order. Nothing hinges on linearization in this discussion. As noted in Ndayiragije (2012), the VOS word order may equally be derived by adopting leftward movement of the subject to [Spec,FocP] as in (31) followed by internal merge/move of vP to a polarity phrase (PolP) above FocP yet below TP.
Second, the logical subject of TEC can bind a variable within a complement that precedes it. Compare (33a), a condition C violation, and the TEC in (33b). In both cases, the variable to be bound precedes its antecedent.

(33) a. * Umwana wiwe, a-ø-ra-kunda Mariya,
    child of-hers 1SA-PRES-AF-love Mary
    *‘Heri child loves Maryi’

b. pro ha-ø-kunda umwana wiwe, Mariya,
    pro LOC-PRES-love child of-hers Mary
    ‘Mary, (e.g. not Sarah) loves her, child’

Third, TEC allows wh-movement of TP-adjuncts such as temporal (when) or purpose (why) phrases as in (34a) but not VP-adjuncts such as manner (how) phrases, witness the ungrammaticality of (34b). This wh-extraction asymmetry follows as a wh-island effect and is expected if and only if the filled [Spec,FocP] in (31) is an A’-position.

(34) a. ni ryari/kuki pro ha-á-hunze abarundi benshi,?
    it-is when/why pro LOC-PST-flee Burundians many
    ‘When/why did many Burundians flee?’

b. * ni gute pro ha-á-hunze abarundi benshi?
    it-is how pro LOC-PST-flee Burundians many
    *‘How did many Burundians flee?’

Finally, the A’-moved subject to [Spec,FocP] in TEC has a blocking effect of wh-movement of the object as illustrated in (35b) from (31a). Yet, no intervention effect on A-movement of the object. As a matter of fact, the object of a transitive verb in TEC may raise to [Spec,TP]. The result is what Bantuists call the Object Subject Reversal (OVS) construction: the object lands in [Spec,TP] and triggers agreement with T as illustrated in (35c). (35d) shows that the raised object can be pro-dropped, an indication that it is in an A-position. Finally, note that TEC (35a) and OVS (35c) share a core semantic property: the post-verbal logical subject receives a contrastive focus reading.

(35) a. pro ha-á-sómye ibitabo abanyeshule TEC
    pro LOC-PST-read books students
    ‘Students (e.g. not teachers) read books’ [Lit: ‘there read books students’]

b. * ni ibiki/bingahe, pro ha-á-sómye t, abanyeshule?
    it-is what/how many pro LOC-PST-read students
    *‘What/how many did students (e.g. not teachers) read?’

c. ibitabo bi-á-sómye abanyeshule OVS
    books 8SA-PST-read students
    ‘students (e.g. not teachers) read books’ [Lit: ‘books read students’]

d. pro bi-á-sómye abanyeshule OVS
    pro 8SA-PST-read students
    ‘students (e.g. not teachers) read them’ [Lit: ‘they read students’]
4 Constraining external merge

The preceding discussion of transitivity restrictions in English and Kirundi *there*-constructions showed that external merge (EM) does not always come free as assumed by Chomsky (2005). It is free in what Chomsky (op.cit) calls set-membership relations, that is, generalized argument-structure and cartographic hierarchies (Cinque, 1999, 2002; Rizzi, 2004; Belletti, 2004) but not in probe-goal (EPP-driven) relations. In the latter, EM is in fact costlier than internal merge (IM). Therefore, I propose the locality condition on EM in (36) where the edge of a head is its Spec and the head itself.

(36) **Condition on External Merge (CEM):**
In a Probe-Goal configuration \[XP \text{ Spec} \ [x \ [YP \text{ Spec} \ [y \ldots]]]\], the edge of Probe \(x\) is inaccessible to external merge (EM) if the edge of \(y\), a phase, hosts a potential Goal.

Specifically, under CEM, external merge of *there* in \([\text{Spec,TP}]\) is banned if \([\text{Spec,vP}]\) is filled, as schematized in (37).

(37)

\[
\begin{array}{c}
\text{there} \\
\text{T} \\
\text{Subj} \\
\text{v} \\
\text{vP} \\
\text{TP}
\end{array}
\]

CEM offers a principled explanation of three of the four properties\(^6\) of English *there*-constructions discussed by B&C.

First, the ban of *there*-insertion in English active unergative and transitive constructions follows from (36): \([\text{Spec,vP}]\), a phase, is filled by a potential goal for T’s EPP-feature.

Second, the fact that change-of-state unaccusatives resist *there*-insertion follows as well under B&C’s assumption borrowed from Deal (2009) that change-of-state unaccusatives have an event argument – the causing argument – merged in \([\text{Spec,vP}]\) as in (37), which blocks *there*-insertion. Alternatively, one may assume that the sole argument of change-of-state unaccusatives is an external (not internal) argument externally merged in \([\text{Spec,vP}]\). In other words, this subclass of unaccusatives are actually unergative.

Third, the availability of *there*-insertion in progressive sentences is predicted by (36) under the reasonable assumption that the verb *be* in progressive aspect and passives is a raising verb, hence has no external argument. Accordingly, *there* insertion in \([\text{Spec,TP}]\) obeys CEM since \([\text{Spec,vP}]\) of *be* is empty or non-existent as schematized in (39).

(38) a. There will be someone telling our story  
b. There were many people killed

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\(^6\) The fourth property, namely the stage-/individual-level predicate asymmetry w.r.t. *there*-insertion can be accounted for by assuming that stage-level predicates are unaccusative in their argument structure whereas individual-level ones are unergative. Therefore, only the former allows *there*-insertion in accord with CEM. Unfortunately, adjective is an impoverished category in Kirundi and stage-level adjectives do not exist; hence the assumption cannot be tested here.
Moreover, CEM’s virtues extend to head-movement as well. Thus, CEM correctly predicts that an intervening head – Neg – between T and v is mandatory for EM of the dummy verb do to occur. The ungrammaticality of (40b) where do is externally merged in T follows.

(40)  

(a) She does not like it
(b) *She does like it

In the same vein, CEM correctly predicts the unavailability of sentences like (41b) where T’s features are spelled-out on v+V as in (41a), and the expletive verb do is externally merged directly in C (not in T) to value C’s [+Q] feature. If EM is free, nothing rules out (41b).

(41)  

(a) She likes it
(b) *Do she likes it?
(c) Does she like it?

Finally, CEM allows us to dispense with Merge over Move, a stipulation used to account for the ungrammaticality of sentences like (42a).

(42)  

(a) *There seems [TP a snake] to be [t, in the closet]]
(b) There seems to be a snake in the closet

Under the assumption that TP is a phase, CEM blocks external merge of there in the matrix [Spec,TP] of (42a) after internal merge of the DP a snake into the embedded [Spec,TP].

5 Conclusion

This paper argues that external merge (EM) is not free in probe-goal relations. A phase-based locality condition on external merge (CEM) is proposed that favors IM over EM. On empirical grounds, CEM offers a unified analysis of syntactic similarities and contrasts between English and Kirundi there constructions that are unaccounted for under current analyses. It also extends its empirical coverage to do-support phenomena in English. On theoretical grounds, CEM makes Minimalist stipulations like Merge over Move entirely dispensable.

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7 Ndayiragije (2012) presented one piece of evidence from Kirundi long-distance object raising out of control constructions. Sentences like *the book refused to read students are shown to be well-formed in certain contexts. It is argued that TP is a phase on its own, whether selected by C or not.
References