The different merge positions of the different types of relative clauses

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Abstract:
A frequent, implicit, assumption is that the different types of relative clauses (nonrestrictive, restrictive, amount, kind-defining, infinitival and reduced participial relatives) are in one and the same language merged in one and the same position. Here, evidence will be presented that their merger is actually at different heights of the nominal extended projection.

1. The merge positions of non-integrated and integrated nonrestrictives
As noted in Cinque (2008), non-integrated nonrestrictive relative clauses (RCs) are ‘outside’ of the sentence containing the head, in a structure which is impermeable to sentence grammar relations (Agree, Binding, etc.) despite the asymmetric c-command relation existing between the head and the RC under the extension of the LCA to Discourse Grammar. As expected, given the higher merger of non-integrated nonrestrictives, in head-initial languages such as Italian in (1) where they are both post-nominal, non-integrated nonrestrictive RCs necessarily follow integrated ones.

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1 To Sten with sympathy and admiration. I wish to thank an anonymous reviewer and Ken Ramshøj Christensen for their comments on a previous version of this article.

(1) **Italian**

a. Gianni, [che è arrivato ieri], …
   
   *Gianni, that is arrived yesterday,* …
   
   [il quale poi raramente si dimostra disponibile], …
   
   *the which then rarely shows availability,* …
   
   ‘Gianni, who arrived yesterday, who is rarely ready to help,* …’

b. *?Gianni, [il quale raramente si dimostra disponibile],
   
   ‘Gianni, who is rarely ready to help,
   
   [che è arrivato ieri], …
   
   *that is arrived yesterday …’

2. **The merge positions of finite (integrated) nonrestrictive and restrictive relative clauses**

In languages in which restrictives remain between the N and the demonstrative, nonrestrictives are invariably found outside of the demonstrative. This is true, among other languages, of head-initial Vietnamese, Indonesian, and Javanese, and of head-final Korean (see Nguyen 2004; Lehmann 1984; Ishizuka 2007 and Cinque 2005; and Kim 1997, respectively).

(2) **Vietnamese**

a. Tôi thích cái đầm [RC mà cô ấy chọn] [Dem này]
   
   *I like CLF dress that aunt that choose this*
   
   ‘I like this dress that the aunt has chosen’ (restrictive)

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5 An early proposal for a higher attachment of nonrestrictive RCs with respect to restrictives is in Jackendoff (1977: §7.1), based on the relative position of restrictive and nonrestrictive RCs when they co-occur (with the former closer to the head). Additional works pointing to the same structural difference between the two types of RCs include Emonds (1979), Demirdache (1991: 108f), McCawley (1998), Grosu (2000: 100), Wiltschko (2012). Also see Arsenijević and Gračanin-Yuksek (2016) for an argument that restrictive and nonrestrictive RCs differ syntactically in terms of attachment.

3 “When the RC precedes the demonstrative, the RC restricts the meaning of the noun; when the RC follows the demonstrative, the phrase has a nonrestrictive meaning” (Nguyen 2004: 61f).

4 “[2](a) ist restriktiv, [2](b) appositiv” (Lehmann 1984: 282).

5 “[The sêng RCs preceding a demonstrative are restrictive RCs, whereas the sêng RCs following a demonstrative are nonrestrictive RCs” (Ishizuka 2007: §2). Javanese NPs have the order N A Num Dem (Cinque 2005: fn19).

6 According to Kim (1997: §4.3) Korean relative clauses appearing between the demonstrative and the N receive a restrictive interpretation, while those appearing outside the demonstrative receive a nonrestrictive interpretation.
b. Tôi thích cái đầm [Đen nay] [RC mà cô ấy chọn]
   I like CLF dress this that aunt that choose
   ‘I like this dress, which the aunt has chosen’ (nonrestrictive)

(3) **Indonesian**
   a. lelaki [RC yang sedang tidor] [Đen itu]
      man Rel Prog sleep that
      ‘That man that is sleeping…’ (restrictive)
   
   b. lelaki [Đen itu] [RC yang sedang tidor]
      man that Rel Prog sleep
      ‘That man, who is sleeping, …’ (nonrestrictive)

According to Kameshima (1989: §4.3.3.1) and Ishizuka (2008), Japanese minimally differs from Korean in that relatives appearing inside a demonstrative have just a restrictive interpretation whereas those appearing outside demonstratives may receive either a restrictive or a nonrestrictive interpretation. This suggests that the merge position of nonrestrictives is outside the demonstrative and that of restrictives inside the demonstrative, even though restrictives, in languages like Japanese, can optionally raise past the demonstrative (cf. Kameshima 1989: 215), to a position lower than the merge position of nonrestrictives (given that “the natural order, when restrictive and nonrestrictive relatives co-occur, is that a nonrestrictive precedes a restrictive relative”, Kameshima 1989: 233). Jaklin Kornfīlt, p.c., tells me that the same is true of Turkish where a restrictive RC precedes the demonstrative, following, if present, a nonrestrictive one (which canonically precedes the demonstrative).

3. The merge position of kind-defining and restrictive and nonrestrictive RCs
   Judging from Italian, it appears that kind-defining RCs (cf. Benincà 2012, Benincà & Cinque 2014) necessarily occur after ordinary restrictives, (4), and before ordinary nonrestrictives, (5):

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7 Ishizuka (2008: §2) attributes the original observation to Kamio (1977: 153-159).
(4) **Italian**

a. Quello è un ragazzo [che conosco] [che non esita mica a rischiare].

That is a boy that I know that not hesitate at all to risk.

‘That is a young man that I know that does not hesitate at all to take risks’.

b. *Quello è un ragazzo [che non esita mica a rischiare] [che conosco].

‘That is a young man that does not hesitate at all to take risks who I know’.

(5) **Italian**

a. Quelli sono ragazzi [che non esitano mica a rischiare],

Those are boys that not hesitate at all to risk

[che/i quali in ogni caso non hanno mai messo in pericolo nessuno].

danger nobody

‘Those are young men that do not hesitate to take risks, who incidentally never put anyone in danger.’

b. *Quelli sono ragazzi, [che/i quali in ogni caso non hanno mai messo in pericolo nessuno], [che non esitano mica a rischiare].

‘Those are young men, who incidentally never put anyone in danger, that do not hesitate to take risks.’

Under the roll-up derivation of head-initial/medial languages, these data show that kind-defining RCs are lower than nonrestrictives and higher than ordinary restrictives.

As Radford (2019: §1.2, fn. 4) observes “Data from the Kroch corpus suggest that the same ordering holds in English, since it contains 27 examples (like those below) in which an antecedent is modified by both a restrictive gap relative and a resumptive kind relative, and in every one of these the restrictive relative precedes the kind relative”: 
(6)  a. There’s a train [you can take] [that it stops in Chicago]
   (Ann Houston, Kroch corpus)

   b. I have a friend [that I talk to] [that we left-dislocate and
topicalize all the time]
   (Wendy C., Kroch corpus)

This ordering is not surprising as kind-defining RCs share properties of
both restrictive and (especially) nonrestrictive RCs (see Cinque to appear,
Chapter 3).

4. The merge positions of unmarked (che/cui) and marked (art.
+ qual-) restrictive RCs
In Italian, when marked and unmarked restrictive RCs co-occur, marked
(art. + qual-) restrictives have to follow unmarked (che/cui) restrictives
(Cinque 1982: 267):

(7)  Italian
   a. Gli studenti [che conoscono bene il tedesco]
   The students who know well the German
   [ai quali potrete rivolgervi] sono pochi.
   to the which you can turn are few
   ‘The students that know German well who you can turn to are
few.’

   b. Gli studenti [i quali conoscano bene il tedesco]
   The students the which know well the German
   [a cui potrete rivolgervi] sono pochi.
   to who you can turn are few
   ‘The students who know German well that you can turn to are
few.’

5. The merge position of restrictive and of amount/maximalizing
RCs
In Chapter 1: §1.5 of Cinque (to appear) I made the simplifying assumption
that restrictive RCs and amount/maximalizing RCs are merged in the same
position, between demonstratives/determiners and cardinal numerals. There
is, however, some indication that the two types may be merged in
two distinct positions. This comes from their relative order when they co-
occur. As with Jackendoff’s (1977) conclusion that nonrestrictive RCs are merged higher than restrictive RCs, based on the latter having to be closer to the head when they co-occur, I take restrictive RCs to be merged higher than amount/maximalizing RCs as bona fide amount/maximalizing RCs, like those involving a *there*-existential clause, appear to have to occur closer to the head than an ordinary restrictive RC. See the contrast between (8a) and (8b):

(8) a. (?)I suddenly noticed [the three books that there were on your desk
[that had earlier been on my desk]]. (Grosu 2012: 7, ex. (8)) vs.

b. *?I suddenly noticed [the three books that had earlier been on my desk
[that there were on your desk]]. (Peter Cole, p.c.)

6. The merge position of infinitival RCs
To judge from Sag (1997: 470), who gives the contrasts in (9)–(10), and Larson & Takahashi (2007: §4.3), and Douglas (2016: 169), who give similar contrasts (see (11) and (12), respectively), infinitival RCs are lower (closer to the NP) than finite restrictive RCs:

(9) a. The only person [(for us) to visit] [whose kids Dana is willing to put up with] is Pat.

b. *The only person [whose kids Dana is willing to put up with] [(for us) to visit] is Pat.

(10) a. One book [for us to read] [that Leslie praised] was Sense and Sensibility.

b. *One book [that Leslie praised] [for us to read] was Sense and Sensibility.

(11) a. Alice spoke to the dealer [to buy tickets from] [that Mary mentioned].

b. *?Alice spoke to the dealer [that Mary mentioned] [to buy tickets from].

(12) a. That is the book [to read] [that I was about to sell].

b. ??That is the book [that I was about to sell] [to read].
7. The merge position of reduced participial RCs

Pre-nominal relative clauses in head-final languages are often participial (see for example the case of the Caucasian languages Archi and Tsez), though this is by no means general (pace Keenan 1985: §2.5). Their peculiarity as opposed to the participial RCs of European languages is that their relativization possibilities are not limited to relativizing the external argument in the case of present participles or the internal argument in the case of past participles. In many languages they may also occur between demonstratives and cardinal numerals, like pre-nominal finite restrictive RCs. Participial relative clauses in Germanic, Slavic and Romance SVO languages are instead severely limited in the arguments that they can relativize and appear to be merged below cardinal numerals. Rijkhoff (1998: 362) explicitly says that “[i]n Dutch (as well as e.g. in German and Frisian) the preposed participial construction follows the demonstrative and the numeral” (and, we may add, precedes “direct modification” adjectives, in the sense of Sproat & Shi 1990 and Cinque 2010). See the examples in (17) and (18), from German, (19)-(21) from English, and in (22) from Bulgarian:9

(17) German (Walter Schweikert, p.c.)
   a. diese drei [in ihren Büros arbeitenden] Männer
      these three in their office working men
   b. ??diese [in ihren Büros arbeitenden] drei Männer
      ‘these three men working in their office’

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8 Pre-nominal RCs are in fact reported to be finite in many head-final languages. See the case of the Cushitic languages Afar (Bliese 1981: §2.4) and Galla (Oromo) (Mallinson and Blake 1981: 288); of the Omotic language Maale (Amha 2001: 162); of the Mundan language Kharia (Peterson 2011: 488); of the Iranian language Sarikoli (Kim 2014: §3.3.1); of the Papuan languages Awtuw (Feldman 1986: 164), Gahuku (Reesink 1987: 217f), Menggwa Dla (De Sousa 2006: 420), Mian (Fedden 2007: §6.4.5), Oksapmin (Loughnane 2009: 196), Tauya (McDonald 1990: 289ff), Usan (Reesink 1987: 217) and Yimas (Foley 1991: 420), of the Caucasian languages Laz (Lacroix 2009: 755), Abkhaz (Lehmann 1984: 72) and Chechen (Komen 2007: 1); of the language isolate Kusunda (Watters 2006: ch. 9); among many others. It would be interesting to know how many languages have finite pre-nominal RCs and how many non-finite pre-nominal RCs, and especially what the two options correlate with.

9 Romance is less revealing in that participial reduced RCs are (virtually) only post-nominal (Dem Num (A) N (A) RC_{reduced} – cf. Cinque 2010: 70), so that their position relative to numerals and adjectives is not directly observable. Nonetheless, the fact that in the presence of a finite restrictive RC they have to be closer to the head than the finite restrictive (cf. Vergnaud 1974: 173ff; Kayne 1994: 97) may be taken as an indication that they are lower than finite restrictives, especially if they lack a CP.
(18) **German** (Walter Schweikert, p.c.)  
a. der [kürzlich angekommene] ehemalige Botschafter von Chile  
   the recently arrived former ambassador of Chile  

b. ??der ehemalige [kürzlich angekommene] Botschafter von Chile [non-parenthetical]  
   ‘the recently arrived former ambassador of Chile’

(19) **English** (Tim Stowell and Christina Tortora, p.c.)  
a. these (other) two [recently completed] plays  
b. *?these (other) [recently completed] two plays

(20) **English** (Tim Stowell and Christina Tortora, p.c.)  
a. (other) two [recently completed] plays  
b. *(other) [recently completed] two plays (cf. (Other) [recently completed] plays)

(21) **English** (Tim Stowell and Christina Tortora, p.c.)  
a. the three [recently arrived] former ambassadors of Chile  
   *?the three former [recently arrived] ambassadors of Chile

(22) **Bulgarian** (Iliyana Krapova, p.c.)  
a. tezi trima [naskoro pristignali] bivši poslanici  
   these three recently arrived former ambassadors  
   of Chili

b. *?tezi trima bivši poslanici ot Chili

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10 Also see Kayne (2005: 66) (and Kayne 1994: 99 for the reduced relative clause status of recently arrived). We would interpret the grammaticality of that beautiful recently arrived letter (Kayne 2005: 66) vs. the ungrammaticality of (21b) above as due to the possibility for beautiful, though not for former, to have a reduced relative clause source (see Cinque 2010 for discussion). Apparently, in Chinese RCs cannot be merged below APs (even those followed by de), as contrasts such as (i), noted in Lu (1998: 54) seem to indicate (cf. also Lu 1990: 21):

(i) a. Susumu de san-ben Cyril du-guo de lan de shu  
   S. DE three-CL C. read-Perf DE blue DE book  
   ‘Sam’s three blue books that Cyril read’

b. *?Susumu de san-ben lan de Cyril du-guo de shu
b. *tezi [naskoro pristignali] **trima bivši** poslanici ot Chili

c. *tezi **trima bivši** [naskoro pristignali] poslanici ot Chili

‘these three recently arrived former ambassadors of Chile’

Pronominals can be modified by finite nonrestrictives (23a), but apparently not by finite restrictive nor by reduced RCs, (23b-c) (Megan Rae, p.c.):

(23) a. He, who had recently arrived, added in his two cents and the argument continued.\(^{11}\)

b. *The he who had recently arrived added in his two cents and the argument continued.\(^{12}\)

c. *A recently arrived he added in his two cents and the argument continued.

Different is the case of proper names, which can under the appropriate conditions be modified by all three types of RCs, see (24a-c) (Megan Rae, p.c.):

(24) a. John, who had recently arrived, added in his two cents and the argument continued.

b. The John who you know is not the one that I know.

c. A recently arrived John added in his two cents and the argument continued.

The same state of affairs obtains in Italian, German (Roland Hinterhölzl, p.c.) and Bulgarian (Iliyana Krapova, p.c.). This can possibly be understood if pronominals are merged in the DP above the merge position of both restrictive and reduced RCs, while proper names are merged in NP (though they can raise to DP under certain conditions – Longobardi 1994).\(^{13}\)

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\(^{11}\) This case should be distinguished from such light headed free relative clauses as He/She who says that is wrong.

\(^{12}\) Kayne (2017: fn. 47) accepts cases like That’s not the you that everybody used to love, which unlike (23b), involves stages of the individual referred to by the pronominal, and thus qualifies as a restrictive relative clause.

\(^{13}\) I assume that because NPs move to Spec,DP rather than as N°s to D° (cf. Giusti 2002: §3.4) they can be complex: la stessa/la sola Lucia di Lammermoor ‘Lit.: L. of L. herself/the only L. of L.’ vs. Lucia di Lammermoor, stessa/sola ti ‘L. di L. only/herself’.
In some languages, pre-nominal RCs appear in the order Dem Num RC A N even if they can relativize more positions than those relativizable in the reduced RCs of Germanic, Slavic and Romance. This is, for example, the case of SOV Karata, an East Caucasian language (see (25)), of SVO Mandarin Chinese (another position being the one that precedes demonstratives) (see (26a-b)), and of T’in, a Khmuic (Mon-Khmer) language, showing the mirror-image order N A RC Num Dem (see (27)):

(25) Karata (East Caucasian; Testelec 1998: 277)\(^{14}\)

\[
\text{hab k’eda [dena raxw-araj] č’ikororaj igruşka-bdi…}
\]

\[
\text{this two I bring-PRT nice toy-PL}
\]

‘these two nice toys which I had brought…’

(26) Mandarin Chinese (adapted from Lu 1990: 4, 20)

a. na 2-ben [Lisi mailai de] youqu de yuyanxue shu

\[
\text{those two-CL L. bought DE interesting DE linguistic book}
\]

‘those two interesting linguistic books that Lisi bought’

b. [Lisi mailai de] na 2-ben youqu de yuyanxue shu

\[
\text{L. bought DE those two-CL interesting DE linguistic book}
\]

‘those two interesting linguistic books that Lisi bought’

(27) T’in (Mon-Khmer; Alves 2001: 5)\(^{15}\)

\[
\text{siŋ kluak ?ən [bakɛew thoon] piaï naŋ ?eŋ pəl.}
\]

\[
pig white I [Mr. Kaew buy] two CLF that die
\]

‘The two white pigs of mine (that) Mr. Kaew bought died.’

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\(^{14}\) According to Kibrik (1996: 153) this is also the position of (participial) RCs in Godoberi, another East Caucasian language, although he says that heavy participial relative clauses tend to occur leftmost in the NP, which appears to reflect the general long-before-short tendency of head-final languages (cf. Yamashita and Chang 2001), the mirror image of the short-before-long tendency of head-initial languages. See Kibrik’s example (14), given here as (i):

(i) [im-u-di kote se=b=a b=äXi-bu] ha=b labu=da-la

\[
\text{[father-OBL-ERG little before N=buy.PST-PART] this=N three-CARD-COLL}
\]

\[
\text{b=ɛč’uXa X ani}
\]

\[
\text{N=big horse}
\]

‘these three big horses, recently bought by father’

\(^{15}\) The same order is attributed by Simpson (2005: 806) to Khmer.
How are (Germanic, Slavic and Romance) reduced (participial) RCs ordered with respect to finite restrictive RCs? If the former are lower than cardinal numerals and the latter are higher, one should expect the former to be closer to the head than finite restrictives.\footnote{16}

Putting together these data, we arrive at the following structure of Merge for (finite) non-integrated and integrated nonrestrictive, (finite) restrictive, amount, infinitival and ‘reduced’ (participial) RCs:

\[ (28) \quad \text{RC}_{\text{non-integ nonrestr}} \ldots \left[ \text{RC}_{\text{integr nonrestr}} \ F^o [\text{DemP} F^o [\text{RC}_{\text{(marked)finrestr}} F^o [\text{RC}_{\text{unmarked)finrestr}} F^o [\text{RC}_{\text{amount}} F^o [\text{infin} F^o [\text{NumP} F^o [\text{RC}_{\text{reduced(partic)}} F^o [\text{AP} F^o [\text{NP}]]]]] \right] \]

Larson and Takahashi (2007) observe that prenominal relatives in Chinese (for which cf. Del Gobbo 2005), Japanese, Korean and Turkish exhibit ordering preferences based on whether they express stage-level versus individual-level properties. They found that stage-level relatives are higher than individual-level relatives (if both co-occur individual-level reduced RCs occur closer to N). Reduced RCs in Italian, and, likely, in languages where they are post-nominal, appear to show the same:

\footnote{16} Even though Sag (1997: 471) reports that for him in English “reduced relatives may precede or follow \(wh\)-relatives (including \(that\) relatives)” (see his examples (i) and (ii)), in (my) Italian reduced RCs interpreted restrictively need to be closer to the head than finite restrictive RCs (see (iii)):

(i) a. The bills [passed by the House yesterday] [that we objected to] died in the Senate.
   b. The bills [that we objected to] [passed by the House last week] died in the Senate.

(ii) a. The only people [being added to our group] [who were at Harvard] are Jones and Abrams.
   b. The only people [who were at Harvard] [being added to our group] are Jones and Abrams.

(iii) a. I soli ragazzi [invitati alla festa] [che ho riconosciuto]
   \(The \ only \ boys \ invited \ to \ the \ party \ that \ I \ recognized\)
   \(erano \ i \ suoi \ studenti\)
   \(were \ his \ students\)
   b. *I soli ragazzi [che ho riconosciuto] [invitati alla festa] erano i suoi studenti
   Perhaps (ib) and (iib) sound possible if understood nonrestrictively or as parenthetical restrictive RCs (in Stowell’s 2005 sense).
(29) **Italian**

a. Le uniche persone amanti del teatro incontrate da me ieri sono loro.

_The sole persons loving of the theater met by me yesterday are them_.

‘They are the only people who love the theater who I met yesterday.’

b. ??Le uniche persone incontrate da me ieri amanti del teatro sono loro.

_The sole persons met by me yesterday loving of the theater are them_.

‘They are the only people who I met yesterday who love the theater.’

Compare (30), the finite counterpart of (29b):

(30) Le uniche persone che ho incontrato ieri che amano il teatro sono loro.

_The sole persons that I have met yesterday that love the theater are them_.

‘They are the only people who I met yesterday who love the theater.’

If correct, then, these observations suggest a more fine-grained structure, where reduced RCs occupy distinct positions depending on whether they are in the scope of a generic (individual-level) or an existential (stage-level) operator: …[NumP F° [RCredS-L F° [RCredI-L F° [AP F° [NP]]]]].

This gives the overall hierarchy seen in (31).\(^{17}\)

\(^{17}\) The FPs (Functional Projections) in (31) are unspecified labels projected from a head F, not indicated in (31).
The different merge positions of the different types ...


