

On the typological variables of relativization

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1 *General goals*

- Develop an ontology of “concrete” typological variables, i.e. one that minimizes assumptions without language-specific observable effects. Contrast this with, e.g., dissolving the \pm extraction variable for RCs by assuming covert extraction even in languages where everything stays in situ; or Baker et al. (2005) who reduce two variables for incorporation (\pm agreement, \pm modifier stranding) to one (\pm trace features) by assuming that NP attribution involves agreement even in languages where such agreement is never audible.
- Keep the variables applicable under fieldwork conditions by favoring formal properties and criteria; keep functional notions to a minimum (like ‘referent’, ‘proposition’ and the like)
- Keep the variables suitable for databasing by applying the autotypologizing method (develop types during data collection; high-resolution typologies; flexible ontologies and data reduction; modularity; Bickel & Nichols 2002)

2 *Traditional assumptions and some problems with them*

RCs are a subspecies of attributive (adjective) clauses, and their core function is to restrict the reference of a head noun — but:

- internally-headed RCs are not attributive, yet they have the same function as attributive RCs, and similar syntactic constraints on the relativization site
- headless RCs have (arguably) no head, yet they share the syntax, semantics and discourse function of headed RCs
- ‘Fact-S’ constructions are attributive and referentially restrictive, yet they don’t share the syntax, semantics and discourse function of RCs
- the core function of RCs is to introduce or further establish people, objects, time and locations in discourse, by linking them to known referents or situations (cf. Fox & Thompson 1990); this is independent of whether or not there is a head noun, cf. *He is bringing the stuff we bought* vs. *he is bringing what we bought*.
- non-restrictive RCs are common in some languages (particularly in Latin and Ancient Greek), although on closer inspection the restrictive/nonrestrictive distinction often seems besides the point (Gensler 2005 on Arabic).

3 *Alternative assumption: RCs are clauses turned into referential expressions*

Basic idea: RCs grammaticalize discourse habits of describing a situation that is or can be shared by the interlocutors so as to be able to “point” in it (cf. Bühler’s 1934 *Deixis am Phantasma*; Bickel 1991a):

(1) Belhare (Kiranti, Sino-Tibetan; Nepal)

- A *Chidep hene a-yu?*
 Ch.[NOM] where [3sS-]be.located-NPST
 ‘Where’s Chidep [a hamlet]?’
- B *asen Am reni khar-e-i male i?*
 yesterday A.[NOM] go-PST-1p no Q
 ‘Yesterday we (incl.) went to Amreni, didn’t we?’
- A *khar-e-i.*
 go-NPST-1p
 ‘We (incl.) went.’
- B *ho, i-na yo-lley ghairi-et-to a-yu.*
 SUM DIST-DEM ACROSS:TRANSP-DIR small.valley-LOC=FOC [3sS-]be.located-NPST
 ‘Well, it is right in the valley further across from there.’

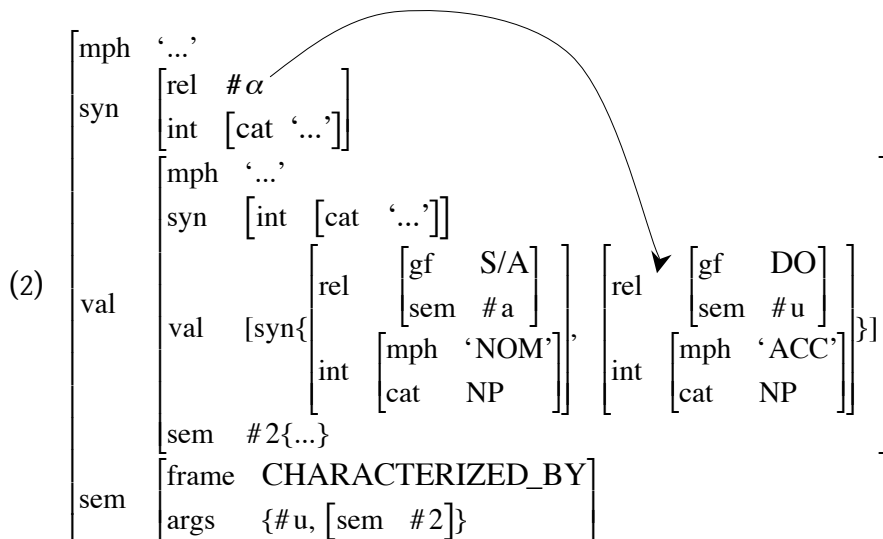
Necessary ingredients for an RC:

- a proposition marked, at least in part, as shared information
- a strategy for identifying a specific referent in that proposition

For the actual development of precisely these two ingredients from general embedding (a) and anaphora patterns (b) to grammaticalized relativization constructions, see Lehmann 1984, Part VI.

3.1 Formal effect

The core effect of relativizing a clause is that the resulting construction contains a relational feature (*rel*) that relates the referent denoted by the construction to an element (the “site” of relativization) in the subordinate clause that is contained by the construction (as a valent).



Therefore, the criterion to decide whether or not something is an RC is the presence of *rel*, i.e. a constraint of the construction that enforces

- a. that the construction is a referential expression and
- b. that the referent is chosen from an element in a subordinate clause.

Note that the criterion can be satisfied by a “bare” constraint, with no overt marking (technically, where the topmost [mph ‘...’] constraint is empty)

(3) Belhare internally-headed RCs: S/P site constraint (Bickel 1995)

- a. [*tombhira-ŋa wa seiʔ-s-u-ha chitt-he-m.* (REL on P)
lynx-ERG chicken[NOM] [3sA-]kill-TR.PERF-3P-NMLZ meet-PST[-3P]-1pA
‘We found the chicken that the lynx had killed.’
* ‘We found the lynx that had killed the chicken.’
- b. [*siŋ mot-khaiʔ-ŋa-ha ek bhari tar-he-ŋ.*(REL on S-patient)
wood[NOM] [3sS-]rot-TEL-INTR.PERF-NMLZ one load bring-PST[3sP]-1sA
‘I brought one load of rotten wood!’
- c. [*asen maʔi khoŋs-a-ha nis-e-ŋ.* (REL on S-agent)
yesterday man[NOM] [3sS-]play-SBJV-NMLZ see-PST[3P]-1sA
‘I saw the guy who played yesterday.’
- d. [*tas khoŋs-a-ŋŋ-ha maʔ-yakt-he.* (COMP)
card[NOM] play-SBJV-[1s]e-NMLZ [3sA-]narrate-IPFV-PST[3P]
‘She said I played cards.’

3.2 Advantages

Advantage 1: since an RC is defined by imposing a construction-internal constraint, we can differentiate between relative-like readings (syntactically unconstrained) and genuine RCs (syntactically constrained):

(4) Kâte (Finisterre-Huon, TNGP) embedding in ArgP (no RC!) (Pilhofer 1933)

- a. [*nâ-pe]=tsi maŋ-nâŋeʔ=ko hu-râ fusuʔma-kaʔ.*
eat-1sHORT.PRS=ERG interior-1pPOSS=ADL go.down-SEQ fill-3PRS
‘That we want to eat goes down into our interior and fills it.’
- b. [*ŋiʔ wiaʔ e-weʔ]=tsi dzika ki-tseyeʔ*
man thing do-3sFAR.PST=ERG sword bite-3sFAR.VOL
‘The man who did these things should be killed.’

This is a very common structure in TNGP, also in Athabaskan and other languages (Bickel 1991b); general schema:

(5) [_{ArgP} S] [_{PredP} V], interpretation of S depends on valence of V and/or context

(6) Warlpiri (Pama-Nyungan) subordination (no RC!) (Hale 1976)

- ŋatjulu-rlu=rna yankiri pantu-rnu kutja=lpapa ŋa-rnu.*
1s-ERG=1sA emu[NOM] kill-PST SUB=PST water[NOM] drink-PST
‘I speared the emu which was / while it was drinking water.’

- (7) Toura (Mande; Ivory Coast) correlative diptych (Bearth, p.c., in Bickel 1991)

[*ŋ-nē=* *yō-* *bō-* *láà*] *e zé*
 1sPOSS-father=SUB palm-REL cut-CMPL.STAT SUB 3s here

‘The palm tree that my father has cut is here.’

- (8) Latin correlative diptych (Lehmann 1984)

[*quae mihi antea signa misisti*] *ea nondum vidi*
 REL.N.pACC 1sDAT earlier statue(N).pACC send.2sPERF DEMpN.ACC not.yet see.1sPERF

‘I haven’t seen yet the statues you sent me recently.’ (Cic. *Ep. ad Att.* 1.4.3)

- (9) Karachay-Balkar (Kipchak Turkic) attributive clause (no RC!) (Comrie 1998a)

a. [*kitab-i al-yan*] *oquwču*
 book-ACC buy-PTCP student[NOM]
 ‘the student who bought the book’

b. [*oquwču al-yan*] *kitab*
 student[NOM] buy-PTCP book[NOM]
 ‘the book that the student bought’

c. [*et biš-gän*] *iyis*
 meat[NOM] cook-PTCP smell[NOM]
 ‘the smell of meat cooking’

Advantage 2: treat internally-headed, headless and nonrestrictive RCs as equally good examples of RCs

Advantage 3: referent nominalization (*nomina agentis, patientis, loci* etc.) and participles are unquestionable instances of RCs. Very prominent in some languages:

- (10) Jamul Tiipay (and other Yuman languages) (Miller 2001)

a. [*nyech’ak kwe-cheyaw maw-pu*] *peya k-iny!*
 woman ACT.NMLZ-sing NEG-ART DEM IMP-give
 ‘Give this to the woman who isn’t singing!’

b. *kwechcheyaa* < **kwe-ch-cheyaw*
 ‘a singer’ ACT.NMLZ-DISTRIBUTIVE-sing

- (11) Belhare (and other Tibeto-Burman languages)

a. [*semba=cha yeti byapɽ ka-cok-pa*] *dokani-chi* <b2.150>
 night=ADD what business ACT.PTCP-do-M shopkeeper-ns
 ‘shopkeepers who do business even at night’

b. *ka-up-pa*
 ACT.PTCP-smith-M
 ‘a blacksmith; a *kāmi*, i.e. member of the blacksmith caste’

4 The structural variables

4.1 Marking of relativization (alone or in combination with each other)

- *site constraint*, as in (3)
- *configurational site identification*

(12) Obligatory head-fronting in Amele (Madang, TNGP; Roberts 1987)

mel mel aid qo-i-a (eu) (mel eu) ho-na
 boy girl hit-3sTODAY.PST DET boy DET come-3sPRS

‘The boy that the girl hit is coming.’

‘The boy that hit the girl is coming.’, but not

* ‘The girl that the boy hit is coming.’

Note the crosslinguistic tendency to front heads in circumnominal constructions in general (Bickel 1991b:111ff)

- *argument resumption*: as far as I can tell, this is attested (and indeed common) only in combination with a relativization marker. I don’t know of a language where the obligatory presence of a plain pronoun, as opposed to its absence or optional presence, forces a relative interpretation.
- *argument sharing* (genuine ‘gap’, in Comrie’s 1998b sense)
 - Note: This is based on the AUTOTYP typology of argument treatment
 - *shared*: impossible to insert in any form in the same construction
 - *demoted*: possible only in an oblique form or non-canonical position
 - *gapped*: impossible if coreferent; OK with disjunct reference
 - *deleted*: ambiguous reference if overt
 - *suppressed*: overt OK only if focused
 - *free* (simple pro-drop, no focus effect on overt pronouns)
 - *required*

(13) Swiss German RCs: argument sharing

a. *I haⁿ də=koleeg doch mðsəⁿ iilad-əⁿ, woⁿ=i(*=əⁿ) gestər*
 I had the=colleague PTCL PTCP.must invite-INF SUB=I=him yesterday
ttroffəⁿ haⁿ.
 PTCP.meet have

‘Of course I had to invite the colleague I met yesterday.’

b. *I haⁿ də=koleeg doch mðsəⁿ iilad-əⁿ, woⁿ=i=əⁿ (woⁿ=əⁿ) gestər*
 I had the=colleague PTCL PTCP.must invite-INF SUB=I=him yesterday
ttroffəⁿ haⁿ.
 PTCP.meet have

‘Of course I had to invite the colleague, when I met him yesterday.’

- *relativization marker*: relative affix or particle as in (7), relative modifier as in (8), participial/nominalizing affix as in (10) and (11), relative affix/particle combined with pronoun (“relative pronoun”).

4.1.1 Locus of relativization marker

The locus variable applies to the marking of dependency relations. Relativization establishes a dependency relation between the site of relativization (the head of the RC) and the clause from which the site is chosen (the dependent), cf. (2).

- *on dependent*: relative nominalizer as in (10), participle as in (11), relative subordinator as in (14) or relative determiner (article) as in (15)

(14) Lai Chin (Sino-Tibetan; Peterson 2003)

- a. [nikum ʔii law thlaw paa thil ʔa-bat mii]ka-hmu?
 last.year LOC farmer [NOM] thing[NOM] 3s-hang.STEM1 REL 1s-see:STEM2
 ‘I saw the farmer who hung up the clothes last year.’
- b. [nikum ʔii law thlaw paa thil ʔa-baʔ mii] ka-hmu?
 last.year LOC farmer [NOM] thing [NOM] 3s-hang.STEM2REL 1s-see:STEM2
 ‘I saw the clothes the farmer hung up last year.’

(15) Arabic relative determiner (Lehmann 1984)

- fī i-balad-i i-kabīr-at-i [lla-tī ya-tū-hu fī-hi n-nās-u].
 in DEF-city(F)-GEN DEF-big-F-GEN REL-F.SG 3M.SG-get.lost-3SG in-3SG DEF-people-NOM
 ‘in the big city where people get lost’

- *on head*: relativization marker on internal head (cf. the correlative diptychs in (7) and (8)) or its resumptive pronoun (= relative pronoun)

Locus of relativization vs. locus of linkage (attribution/subordination):

- *dependent-marked attribution, dependent-marked relativization*: (11), (14) and (15)
- *dependent-marked attribution, head-marked relativization*: relative pronoun – trend away from this? Three developments:

A. Reanalyzing REL as SUB in many European IE languages, e.g. (13)

B. Distributing REL and SUB onto different words in Franconian (and others):

(16) East Franconian (Fleischer 2004)

- di frā [därv wū iχ begēiŋd bi]
 ART.NOMsF woman REL.DATsF SUB I encountered am
 ‘the woman whom I encountered’

C. The REL pronoun that didn't quite make it: Ancient Greek relative pronouns as determiners (dependent-marked relativization) (aka *attractio relativi* with internal head; Kühner & Gerth 1904, Bickel 1991a)

(17) Attic Greek

a. ὁ λόγος [ὃ προκαλεῖσθε τρόπῳ]...
 ART.NOMsM conversation.NOMs REL.DAT.sM demand.MED2pPRS manner.DATs
 γινέσθω. (Thuk. 5, 88)
 proceed.MED2sIMP

'The conversation should proceed the way you demand.'

a'. ὁ λόγος [ὃ προκαλουμένῳ τρόπῳ] ...
 ART.NOMsM conversation.NOMs REL.DAT.sM demand.MED.PTCP.DATsM manner.DATs
 γινέσθω. (Kühner & Gerth 1904:407)
 proceed.MED3sIMP

'The conversation should proceed the way you demand.'

(18) Homeric Greek:

a. οὐ δ' Ἀγαμέμνων λῆγ' ἔριδος [τὴν πρῶτον ἐπηείλης'
 NEG but A.NOM cease.3sAOR fight.GENS ART.ACCsF first PST.threaten-3sAOR
 Ἀχιλεῖ]. (Il. 1, 318f)
 A.DAT

'But Agamemon did not cease from the fight that he first threatened Achilles with.'

b. Τεῦκρός θ' [ὃς ἄριστος Ἀχαιῶν τοξοσύνη] (Il. 13, 313)
 T.NOM and REL.NOMsM best.NOMsM A.GENp archery.DATs

'and Teukros, the best of the Achaians in archery'

- *head-marked attribution, dependent-marked relativization*

(19) Lango (Lwo, Nilotic; Noonan 1992 and p.c.)

a. rwòtt=à=mê ràc
 king=ATTR=REL 3s.be.bad.HAB
 'the/a king who is bad'

b. lócà=à=mê rwòt òmìð lyèc bð=té
 man=ATTR=REL king 3s.give.PFV elephant to=3s
 'The man that the king gave an elephant to.'

c. rwòtt=à ràc
 king=ATTR bad
 'the/a bad king'

d. (*à) ràc
 'the bad one'

- *head-marked attribution, head-marked relativization*: unknown, but head-marked attribution is rare anyway: out of 157 languages coded for clausal and adjectival attribution locus in AUTOTYP, only 3 have head-marking (Lango, Nivkh; and Persian, where the ezafe has become limited to adjectives since Middle Persian) and only 4 have floating marking (Tagalog, Abkhaz, Mataco, Nambikwara).

4.2 Headedness

- *headed* (the answer I got...; or pseudo-head, as in *the one who...*)
- *headless* (empty, but possible head)
- *free relative* (no possible head; as in *what I find interesting...*, possibly subject to case agreement)

4.3 Extraction

- *internally-headed*
- *attributive* (*externally-headed, extracted*)

If attributive: position

- *initial head* (postnominal RC)
- *final head* (prenominal RC)

4.4 Clause-linkage

- *adsubordination*
- *embedding*

Note that Clause-Linkage is partly independent of Extraction:

- *internally-headed adsubordinate*: “*correlative diptych*” (Lehmann 1984)
- *internally-headed embedded*: “*circumnominal RC*” (Lehmann 1984)

(20) Latin

- a. [*quae mihi antea signa misisti*], *ea nondum vidi*
 REL.N.pACC 1sDAT earlier statue(N).pACC send.2sPERF DEMpN.ACC not.yet see.1sPERF
 ‘I haven’t seen yet the statues you sent me recently.’ (Cic. *Ep. ad Att.* 1.4.3)
- b. *nam [quae itinera ad Hibernum atque Octogesam pertinebant]*
 for REL.N.pNOM road(N).pNOM to H.ACC and O.ACC extend.3pPST
castris hostium oppositis tenebantur.
 camp.ABLp enemy.GENp opposite.ABLp hold.3pPST.PASS
 ‘For the roads that lead to Hibernum and Octogesa were held by the other camps of the enemy.’ (Caes. *Civ.* 1.68.1)

Also cf. the examples with vs. without the determiner *eu* in Amele main clauses: (12)

4.5 Potential Focus Domain (VanValin & LaPolla 1997)

- *Within PFD: Belhare*

- (21) a. [[*sa-a thuu-s-u=na*] *ija*] *chept-he-ga?*
 who-[s]ERG [3sA-]cook-TR.PERF-3[s]P=ART beer[NOM] taste-PST[-3sP]-2[sA]
- a'. [*sa-a ija thuu-s-u=na*] *chept-he-ga?*
 who[s]-ERG beer[NOM] [3sA-]cook-TR.PERF-3[s]P=ART taste-PST[-3sP]-2[sA]
- ‘Whose beer did you try?’
*Literally: “*Who_i did you try the beer that _{-i} brewed?”*

b. [[*asen sa-ti ka-ten-ba maʔi ta-he?*
 yesterday who-sNOM ACT.PTCP-hit-M person[-sNOM] [3sS-]come-PST
 ‘Who did the man who came hit yesterday?’

*Literally: ‘*Who_i came the man who hit _i?’*

c. [*ye-ti ka-set-pa-chi chitt-he-chi-ga?*
 what-sNOM ACT.PTCP-kill-M-ns[NOM] find-PST-[3]ns[P]-2[s]A
 ‘What did you find them butchering?’

*Literally: ‘*What_i did you find the ones who butchered _i?’*

- *Outside PFD: Lakhota (Van Valin 1995)*

(22) *wičháša ki [NP[S šýka wá táku yaxtáke] ki le] wáyáka he?*
 man the dog a what [3s>3s-]bite the this [3s>3s-]saw Q
 ‘Did the man see the dog which bit something?’
 *‘What did the man see the dog which bit _i?’

4.6 Category of RC

- *adjective (underived head of AttrP)*
- *noun (underived head of ArgP)*
- *clause (finite vs. subjunctive / semi-finite vs. nonfinite, etc.)*

4.7 Site Range (Keenan & Comrie 1977, Lehmann 1984, Hawkins 1999 etc.)

(23) Lehmann’s 1984 version:

S/A or S/P > P or A > IO or SO or temporal/local adjunct > OBL > Adjuncts
 GEN > COMP > Adpositional attributes
 Coordinate NPs
 Complement S > Adsentential S > Adnominal S*

(24) Belhare attributive RCs: all except comitatives and causes (Bickel 2004a)

a. *maʔi-lo khoys-e-ŋa.*
 man-COM play-PST-[1s]e
 ‘I played with the man.’

a´. **khoys-a-ŋ=na maʔi*
 play-SBJV-[1s]e=ART man[NOM]
 Intended: ‘the man I played with’

a´´. *ŋka-lo khoys-a=na maʔi*
 1s-COM [3sS-]play-SBJV=ART man[NOM]
 ‘the man who played with me’

b. *sidha-ŋa si-he.*
 medicine-ERG [3sS-]die-PST
 ‘He died from the medicine.’

* Revised. Lehmann only distinguishes adverbial vs. adnominal clauses.

- b'. **siuʔ=na* *sidha*
 [3sS-]die.NPST=ART medicine[NOM]
 Intended: 'the medicine that one dies from'
- c. *phendik-ŋa cept-he.*
 sickle-ERG [3sA-]cut-PST[-3P]
 'He cut [the grass] with the sickle.'
- c'. *ceps-u=na* *phendik*
 [3sA-]cut-3P[SBJV]=ART sickle[NOM]
 'the sickle he cut [the grass] with'
- d. *na maʔi-etnahuŋ khi-he-ŋa.*
 DEM man-ABL quarrel-PST-[1s]e
 'I quarreled because of this guy.'
- d'. **khiy-a-ŋ=na* *maʔi*
 quarrel-SBJV-[1s]e=ART man[NOM]
 Intended: 'the man because of whom I quarreled'
- e. *ina thaũ-etnahuŋ Himal aʔ-yu.*
 DIST.DEM place-ABL H. [3sS-]be.visible-NPST
 'From that place one can see the Himalayas.'
- e'. *Himal aiʔ=na* *thaũ.*
 H. [3sS-]be.visible=ART place[NOM]
 'the place from which one can see the Himalayas'

(25) Puzzle: experiencers OK with S/A-participle, not OK with NMLZ:

- a. *cece maʔi lim-yu.*
 meat[NOM] man[NOM] [3sS]-be.tasty-NPST
 'The man likes the meat.'
- b. **lim-kha maʔi*
 [3sS-]be.tasty-NPST man[NOM]
 Intended: 'the man who likes it', OK as 'the man who is tasty'
- b'. *ka-lim-ba maʔi*
 ACT.PTCP-be.tasty-M man[NOM]
 'the man who likes it', not OK as *'the man who is tasty'

The language with probably one of most extreme relativizers: Latin (Cicero 2005)

(26) Latin

- a. *permulta [quae [SUB orator _ a natura nisi haberet]*
 many.N.NOMP REL.N.ACC orator.NOMS by nature.ABLs if.not have.3sPST.SBJV
non multum a magistro adiuuaretur]
 NEG much.N.ACCs by teacher.ABLs help.3sPST.SBJV.PASS
 'many [properties] such that if the orator didn't have them by nature, he
 couldn't be much helped by a teacher.' (Cic. *de Or.* 1, 126)
 Literally: '*many properties [which_i couldn't be helped by a teacher [if the
 orator didn't have _{-i} by nature]]'

- b. *propter expectationem legatorum*
 because expectation.ACCs envoy.GENp
 [qui [_{NP-SUBJECT} quid _ egissent] nihildum nuntiabatur].
 REL.M.NOMp REL.N.ACCs achieve.3pPLUPERF.SBJV nothing.yet report.3sPST.PASS
 ‘because of the expectation of the envoys of whose achievements nothing
 was as yet reported’ (Cic. *Fam.* 11.8.1)
Literally: ‘*the envoys [who_i [what __i achieved] nothing was yet reported]’

Note: Site constraints can exist only if there are filler-gap dependencies, i.e. genuine relativization. Plain attribution, as in Japanese, is not relativization, hence there are no site constraints (Comrie 1998b). But, as the Latin data show, the absence of extraction constraints does not entail absence of relativization.

4.8 Site Access Layer (Bickel 2004b)

- clause-level, hence only under certain case or phrase structure conditions
- predicate-level, hence regardless of case or the word/phrase distinction

(27) German: clause-level, site constrained to NOMINATIVE NP

a. *mögen* ‘like’: <exp., stim.>, <NOM, ACC>

a’. *Der Lehrer mag Bier.*
 the.NOMsM teacher like.3sNPST beer

‘The teacher likes beer.’

a’’. *der Bier mög-end-e Lehrer*
 the.NOMsM beer like-ACT.PTCP-NOMsM teacher

‘the teacher who likes beer’

(A-exp., NOM)

b. *schmecken* ‘like’: <exp., stim.>, <DAT, NOM>

b’. *Dem Lehrer schmeck-t Bier.*
 the.DATsM teacher be.tasty-3sNPST beer

‘The teacher likes beer.’ (lit., ‘to the teacher, beer is tasty’)

b’’. **der Bier schmeck-end-e Lehrer*
 the.NOMsM beer be.tasty-ACT.PTCP-NOMsM teacher

‘the teacher who likes beer’

(A-exp., DAT)

(28) Belhare: predicate-level, site constrained to highest role in a-structure

a. *kitma* ‘to fear’: <exp., stim.>, <ERG, NOM>

a’ *tombhira ka-kit-pa ma?i*
 lynx[NOM] ACT.PTCP-fear-M person[NOM]

‘the man who fears the lynx’

(A-exp., ERG)

a’’ **ka-kit-pa tombhira*
 ACT.P-fear-M lynx[NOM]

‘the lynx who the man fears’

(O-stim., NOM)

- b. *suma* ‘taste sour’: <exp., stim.>, <NOM, NOM>
- b’ *ŋka iŋa su-yu.*
 1SG[NOM] beer[NOM] [3sS-]sour-NPST
 ‘To me, the beer tastes sour.’ (‘I find the beer sour.’)
- b’’ *iŋa ka-su-ba maʔi*
 beer[NOM] ACT.PTCP-sour-M person[NOM]
 ‘the person to whom the beer tastes sour’ (A-exp., NOM)
- b’’’ **ka-su-ba iŋa*
 ACT.PTCP-sour-M beer[NOM]
 ‘sour beer’ (O-stim., NOM)

Relativization on word parts in incorporation

- (29) [*tombhira* [_v *wa seiʔ-sa*]-*ha*] *chitt-he-m.*
 lynx[-sNOM] chicken[-sNOM] [3sS-]kill-TR.PERF-NMLZ find-PST[-3sP]-1pA
 ‘We found the lynx that had killed the chicken.’
 ‘We found lynx-killed chicken.’ (understood as a kind of chicken)

But no relativization on word parts with attributive relativization, because attribution is incompatible with incorporation in Belhare (no modifier stranding)

(30) Belhare

- a. **khaĩ-kha* [_v *cece n-ca-yu*].
 [3sS-]be.good.NPST-NMLZ meat 3nsS-eat-NPST
 Intended: ‘They eat good meat.’
- b. [_{NP} *khaĩ-kha cece*] [_v *n-cai-t-u*].
 [3sS-]be.good.NPST-NMLZ meat[-NOM] 3nsA-eat-NPST-3P
 ‘They eat good meat.’

Similarly, Mapudungun allows relativization on word parts only *within* the incorporated verb complex, not in the form of modifier stranding:

(31) Mapudungun (isolate, southern S. America; Hermelink 1992)

- a. [_{NP} *we ngilla-n manshun*] [_v *adkintu-yaw-i*].
 just buy-REL ox look.after-AMBULATIVE-IND
- b. [_v *adkintu-we-ngilla-n-manshun-kiyaw-i*].
 look.after-just-buy-REL-ox-AMBULATIVE-IND
 ‘S/he is looking after the oxen that have just been bought.’

5 Summary, and steps towards an ontology

Marking: *REL-Marker vs. Site Constraint vs. Config Site Identification vs. Resumption vs. Sharing*

|
Locus of REL: *H vs. D vs. 2 vs. F*

Head: *headed vs. headless vs. free*

Extraction: *Internally-headed vs. Attributive* (If Attributive: Position: *pre-* vs. *post-*)

Linkage: *Adsubordinate vs. Embedded*

If marked, Locus of Linkage: *H vs. D vs. 2 vs. F*

PFD: *within PFD vs. outside PFD*

(Plus other variables relevant for clause linkage type: Backward Control, Juncture Adjacency, Categorical Co-Ranking, Symmetry, Illocutionary Scope, Propositional Focus)

Category: *A vs. N vs. S (sub-typologized for finiteness)*

Site Range: of grammatical relations in the clause;
of attributive relations in NPs;
of grammatical relations in clauses adjoined to or embedded in the RC

Site Layer: *predicate-level vs. clause-level*

References

- Baker, Mark C., Roberto Aranovich & Lucía A. Golluscio, 2005. Two types of syntactic noun incorporation: noun incorporation in Mapudungun and its typological implications. *Language* 81, 138 – 76.
- Bickel, Balthasar, 1991a. Der Hang zur Exzentrik: Annäherungen an das kognitive Modell der Relativkonstruktion. In: Bisang, Walter & Peter Rinderknecht [eds.], *Von Europa bis Ozeanien – von der Antinomie zum Relativsatz: Gedenkschrift für Meinrad Scheller*, pp. 15 – 37. Zürich: ASAS.
- Bickel, Balthasar, 1991b. *Typologische Grundlagen der Satzverkettung*. Zürich: ASAS.
- Bickel, Balthasar, 1995. Relatives à antécédent interne, nominalisation et focalisation: entre syntaxe et morphologie en béharrien. *Bulletin de la Société de Linguistique de Paris* 90, 391 – 427.
- Bickel, Balthasar, 2004a. Hidden syntax in Belhare. In: Saxena, Anju [ed.], *Himalayan languages: past and present*, pp. 141 – 90. Berlin: Mouton de Gruyter.
- Bickel, Balthasar, 2004b. The syntax of experiencers in the Himalayas. In: Bhaskararao, Peri & Karumuri Venkata Subbarao [eds.], *Non-nominative subjects*, pp. 77 – 112. Amsterdam: Benjamins.
- Bickel, Balthasar & Johanna Nichols, 2002. Autotypologizing databases and their use in fieldwork. In: Austin, Peter, Helen Dry & Peter Wittenburg [eds.], *Proceedings of the International LREC Workshop on Resources and Tools in Field Linguistics, Las Palmas, 26 - 27 May 2002*, Nijmegen: MPI for Psycholinguistics.
- Bühler, Karl, 1934. *Sprachtheorie*. Stuttgart: Fischer.
- Cicero, Marcus Tullio, 2005. In *Grammaticam Universalem Oratio*. Book that might have been written!
- Comrie, Bernard, 1998a. Attributive clauses in Asian languages: Towards an areal typology. In: Boeder, Winfried, Christoph Schroeder, Karl Heinz Wagner & Wolfgang Wildgen [eds.], *Sprache in Raum und Zeit, in memoriam Johannes Bechert, Band 2*, pp. 51 - 60. Tübingen: Narr.
- Comrie, Bernard, 1998b. Rethinking the typology of relative clauses. *Language Design* 1, 59 – 86.
- Fleischer, Jürg, 2004. A typology of relative clauses in German dialects. In: Kortmann, Bernd [ed.], *Dialectology meets typology*, pp. 211 – 43. Berlin: Mouton de Gruyter.
- Fox, Barbara A. & Sandra A. Thompson, 1990. A discourse explanation of the grammar of relative clauses in English conversation. *Language* 66, 297 – 316.
- Gensler, Orin, 2005. The Book of Misers: restrictive, non-restrictive, and headless relative clauses in early Arabic. Paper given at the Max Planck Institute for Evolutionary Anthropology, 8 March.
- Hale, Kenneth, 1976. The adjoined relative clause in Australia. In: Dixon, R.M.W. [ed.], *Grammatical categories in Australian languages*, pp. 78 – 105. Canberra: Australian National University.
- Hawkins, John A., 1999. Processing Complexity and Filler-Gap Dependencies across Grammars. *Language* 75, 244 – 85.
- Hermelink, Bryan L., 1992. La incorporación en el Mapudungun. *Lenguajes Modernas* 19, 129 - 38.
- Keenan, Edward L. & Bernard Comrie, 1977. Noun phrase accessibility and universal grammar. *Linguistic Inquiry* 8, 63 - 99.
- Kühner, Raphael & Bernhard Gerth, 1904. *Ausführliche Grammatik der griechischen Sprache II: Satzlehre*. Hannover: Hahn'sche Buchhandlung.
- Lehmann, Christian, 1984. *Der Relativsatz*. Tübingen: Narr.
- Miller, Amy, 2001. *A grammar of Jamul Tiipay*. Berlin: Mouton de Gruyter.
- Noonan, Michael, 1992. *A grammar of Lango*. Berlin: Mouton de Gruyter.
- Peterson, David A., 2003. Hakha Lai. In: Thurgood, Graham & Randy J. LaPolla [eds.], *The Sino-Tibetan languages*, London: Routledge.
- Pilhofer, G., 1933. *Grammatik der Kâte-Sprache in Neuguinea*. Berlin: Reimer.
- Roberts, John R., 1987. *Amele*. London: Croom Helm.
- Van Valin, Robert D., Jr., 1995. Towards a functionalist account of so-called extraction constraints. In: Devriendt, Betty, Louis Goossens & Johan van der Auwera [eds.], *Complex structures: a functionalist perspective*, pp. 29 – 60. Berlin: Mouton de Gruyter.
- Van Valin, Robert D., Jr., & Randy J. LaPolla, 1997. *Syntax: structure, meaning, and function*. Cambridge: Cambridge University Press.