Emergence of Embedded Relative Clauses in Old Persian
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0 Introduction

Some old Indo-European languages like Vedic and Hittite do not make productive use of embedded postnominal relative clauses, unlike modern Romance and modern Germanic languages, where the head noun and the verbed relative clause form a complex NP.

Vedic and Hittite strategy:

- Correlative: $[\text{cor rel-pn ...}]_i \ldots \text{NP}_i \ldots$

1. $[\text{cor} \ \text{y}e\text{n}a \ \text{g}ac\text{h}a\text{tha}h \ \text{s}uk\text{t}o \ \text{du}ro\text{n}a\text{mi}]_i$

   REL.INS.SG go.PRES.2DU good-doer.GEN.SG home.ACC.SG
téna$_i$ nar$_a$ vartír asmábhya yātām
DEM.INS.SG man.VOC.DU course.ACC.SG 1PL.DAT go.IMP.2DU

"By which (chariot) you go to the home of the good ritual performer, by that, o men, travel your course to us."[1] (RV 1.117.02cd)

2. $[\text{cor} \ \text{ˇS`A}BI \ \text{KUR} \ \text{URU}.d \ \text{U-taˇsˇsa}=ya=kan \ \text{kuieš} \ \text{URU}.\text{DIDLI}\.\text{H}\.\text{A} \ \text{ˇS}A$

   within land Tarhuntassa=PTC=PTC REL.NOM.PL city.NOM.PL of
   LUGAL KUR $\text{URU}^{\text{HATTI}}$ ešer \ldots (list of cities) $\text{URU}^{\text{Uppaššanaš}}_i$
   king land Hatti COP.PRET.3PL Uppassana
   LÖ.MES$^{\text{MUŠEN.DU.A A NA ZAG}}$ KUR$^{\text{PTC}}$=as=kan ėšzi apūšš$_i$=a=šši
   augurs to border land COP they=also=him
   piyantes$^{\text{give}.\text{PTCP.PL}}$

   "And also the cities within the land of Tarhuntassa which were of the king of Hatti... (list of cities), Uppassana, the augurs ((insofar as) one resides in the border territories), they too are given to him."[2] (Bo 86/299 i 68-77)

- Extrapos ed Relative: NP$_i \ldots [\text{rc} \ \text{rel-pn ...}]_i$

3. $[\text{rc} \ \text{huvé} \ \text{vah} \ \text{sudyótmānam} \ \text{svuṛktúm}$

   call.PRES.MID.1SG 2PL.ENCL one.of.good.brightness.ACC.SG well-twisted.ACC.SG

   višám agnim$_i$ átíthim suprayásam
   clan.GEN.PL Agni.ACC guest.ACC.SG receiving.good.offering.ACC.SG

   $[\text{rc} \ \text{mitrāh} \ \text{iva} \ \text{yáh} \ \text{didhiśavyah} \ \text{bhút}$

   envoy.NOM.SG like REL.NOM.SG desirable.to.install.NOM.SG become.INJ.3SG

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1 By embedded, I mean center-embedded as in example (5). Old Hittite may have embedded relative clauses, cf. discussion in Probert (2006:52-3) and Hock (2015:65-6). Vedic also have some examples of embedding, cf. Hock (1989:111-4) and Jamison (2022).

2 All Vedic translations are from Jamison & Brereton (2014), unless noted otherwise.

3 All Hittite translations are from the data used for Motter (2023).
devāḥ ādevē jāne jātāvedāḥ

god.NOM.SG god-directed.LOC.SG people.LOC.SG Jātavedas.NOM

“I call for you upon the one of good brilliance, on Agni, the guest of the clans, who receives well-twisted (hymns), who receives very pleasurable offerings, who, like an envoy, has become desirable to install as god among the god-directed people, as Jātavedas.” (RV 2.4.1)

(4) nu=za “Kumarbiš GALGA-tar ZI-ni kattan daškizzi

CONN=REFL Kumarbi wisdom soul-DAT.SG down take.PRES.3SG

[KUMUDKAM-an kuiš LŪ HUL-an šallamuškizzi]

day.ACC.SG REL.NOM.SG person evil.ACC.SG raise.PRES.3SG

“Kumarbi takes wisdom into his mind, (he) who raises the day as an evil being.”

(KUB 33.98+ i 4-5)

Romance and Germanic strategy:

• Embedded Relative: ... [NP N, [rc rel-pn ...].i] ...

(5) The [NP headway, [rc that we made t].i] was satisfactory. (Schachter 1973, attributed to Brame 1968)

Previous literature has hypothesized various directions of the development of relative clauses, however, no one seemed to believe that PIE had center-embedded postnominal restrictive relative clause, except for Ram-Prasad (2022:167) mentioning the possibility for it to exist in PIE but still marginal, and it was probably innovative.

Ram-Prasad’s (2022) analysis focused on the reanalysis of ambiguous examples which could be interpreted as either a postposed relative clause or a (non-center-)embedded postnominal relative clause (cf. Hettrich 1988:608, Hock 1989:112-3, Davison 2009):

(6) imán agne śaraṇim mūrṣaḥ nah

this.ACC.SG.F Agni.VOC.SG breach.ACC.SG forget.AOR.CAUS.2SG 1PL.GEN.ENCL

imán ādhvānam, [rc yām āgāna dārāt]

this.ACC.SG.M way.ACC.SG REL.ACC.SG come.AOR.1PL distance.ABL.SG

“This (ritual) breach of ours, Agni—make it forgotten; make us forget this way which we have come on from afar.” (RV 1.31.16ab)

This suggests that the reanalysis of postposed relative clauses to (non-center-)embedded postnominal relative clauses must be independent in the different branches, and center-embedded relative clause must be developed later. This paper will focus on the Indo-Iranian branch, which offers a case study for the development of embedding due to the varying degrees of freedom to embed in the three oldest attested Indo-Iranian languages, namely Vedic, Avestan, and Old Persian, and provide an alternative mechanism for the development of embedded relative clauses in Old Persian.
1 Headedness in Indo-Iranian Relativization

1.1 Headedness

The headedness of a relative construction can be defined in many different ways. For the purpose of this paper, the term headedness is used to describe the headedness of the (cor)relative clause. A (cor)relative clause can be:

1. externally headed: where the head is situated in the host clause (main clause), and the (cor)relative clause does not have an overt head;
   \[ \text{Host Clause} \ldots \text{head} \ldots ] \ [\text{rc rel-pn} \ldots ]

2. internally headed: where the head is in the (cor)relative clause without movement;
   \[ [\text{rc rel-pn} \ldots \text{head} \ldots ]\]

3. raised headed: where the head is base generated in the (cor)relative clause but moves to the left periphery of the (cor)relative, preceding the relative pronoun.
   \[ [\text{TopP head} i [\text{rc rel-pn} \ldots \text{head} i \ldots ]]]

Raised headedness is only possible in languages where there is a Topic Phrase projection in (cor)relative clause as such Vedic.

1.2 Vedic

Qu (2020) illustrates that Vedic has all three types:

(7) ṭá̯m u stu̯e ṇ̃̄drami [rc yá̯h vídāṇḥ],
DEM.ACC.SG PT praise.1SG Indra.ACC.SG REL.NOM.SG know.MP.NOM.

gírvü̯ha̯sam gírbhí̯h yajñá̯vṛddham
song-vehicled.ACC.SG song.INS.PL sacrifice-strengthened.ACC.SG

“I will praise him - Indra, as he is known - whose vehicle is songs, who is strengthened by sacrifice along with songs.” (RV 7.21.2ab; externally headed)

(8) ñ̄dram [CorC yá̯h śú̯ṣ̣ṇ̣a̯m ašū̯ṣ̣ṇ̣a̯m ní
Indra.NOM REL.NOM.SG Śú̯ṣ̣ṇa.ACC.SG insatiable.ACC.SG down ávṛṇaka̯]

wretch.IMPF.3SG

“Indra, who wrenched down insatiable Śú̯ṣṇa.” (RV 1.101.2c; raised headed)

(9) tvé tát na̯ḥ suvēdam usrī̯̣yam
2SG.LOC DEM.NOM.SG 1PL.DAT.ENCL easy.to.find.NOM.SG.N reddish.NOM.SG
vásu [rc yám tvá̯m hiṇ̣o̯̣śi márṭ̣yam]
good.NOM.SG REL.ACC.SG 2SG.NOM drive.PRES.2SG mortal.ACC.SG

“In you is that ruddy good [cattle] easy to find for us (and for) the mortal whom you urge on.” (RV 8.4.16cd; internally headed)
### 1.3 Avestan

Dashti (2022) has demonstrated that Avestan has type 1 and 2:

\[(10)\text{ yazamaide ahurom mazdam}_i \quad \pres.1\text{pl praise.PRES.1PL Ahura.ACC Mazda.ACC REL.NOM.SG cow.ACC=and} \]

\[\text{ašom=cā dāt}_i, \quad \text{truth.ACC=and create.AOR.3SG} \]

“We praise the wise Ahura, who created the cow and truth.”

\[(11)\quad \text{CorC} \quad \text{yā vō vaṣuhiš ahurō mazdā nāmān} \quad \text{REL.ACC.PL 2PL.DAT best.VOC.PL Ahura.NOM Mazda.NOM name.ACC.PL} \]

\[\text{dadāt}_i, \quad \text{vā yazamaide} \quad \ldots \quad \text{give.INJ.3SG DEM.INS.PL 2PL.ACC praise.PRES.1PL} \]

“The names which Ahura Mazda, o best ones, gave you, with them we praise you…”

(Yasna 37.1; OAv. externally headed)

### 1.4 Old Persian

Old Persian has types 1 and 3:

\[(12)\text{ pasāva hauv kār}_i \quad \text{ašiyava} \quad \text{trayam Vahyazdāt}_a \quad \text{thereupon DEM army set.forth.PAST.3SG REL.ACC.SG Vahyazdata.NOM} \]

\[\text{frāśiya abiy Vivānam hamaranam cartanay}_i, \quad \text{sent.forth.PERF.3SG against Vivana.ACC battle.ACC.SG make_INF} \]

“Thereupon the army marched off, which Vahyazdata had sent forth against Vivana to join battle.”

(Yasna 38.4; OAv. internally headed)

\[(13)\quad \text{CorC} \quad \text{kār}_a \quad \text{Pārsa utā Māda haya upā} \quad \text{army.NOM.SG Persian.NOM.SG and Median.NOM.SG REL.NOM.SG with} \]

\[\text{mām āha}_i, \quad \text{hauv}_i \quad \text{kamnam āha} \quad \text{1SG.ACC COP.PAST.3SG DEM.NOM.SG small.NOM.SG COP.PAST.3SG} \]

“The Persian and Median army which was with me, this was a small (force).”

(DB 2.18-9; raised headed)

### 2 Izafe Stages

Hale (1989) pointed out that the relationship between the structure of Old Persian relative clauses the izafe-construction must be investigated. Meyer (2015) separated the Iranian izafe development into three stages:

Stage 1: nominal relative clause;

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4Example (10) and (11) are translated by Dashti (2022).

5All Old Persian translations are from Kent (1989).
Stage 2: nominal relative clause with case attraction;  
Stage 3: true izafe with the relative pronoun grammaticalized.

2.1 Vedic

Jamison (2022) examined a similar structure in Vedic, all of the examples of which belong to Stage I. Example (7) is repeated here as example (14):

(14) \( \text{tám \ u \ stuše \ índram}_i \ [\text{rc \ yáŋ} \ \text{vídānāh}_i]_i \) 
  
  **DEM.ACC.SG** **PT praise.1SG** **Indra.ACC.SG** **REL.NOM.SG** **know.MP.NOM.** 
  
gírvāhasam  
gírbhīḥ  
yajñāvṛddham  
song-vehicled.ACC.SG  
song.INS.PL  
sacrifice-strengthened.ACC.SG

“I will praise him - Indra, as he is known - whose vehicle is songs, who is strengthened by sacrifice along with songs." (RV 7.21.2ab; Stage 1)

2.2 Old Avestan

Meyer (2015) showed that examples in both Stage I and Stage II can be found in Old Avestan:

(15) \( \text{ma} \ [\text{rc \ yā} \ \text{frasṛtā} \ \text{ižatlā}_i]_i \) 
  
  **with 2PL.ACC**  
  **footstep.INS.PL**  
  **REL.NOM.PL**  
  **famous.NOM.PL**  
  **Iža.GEN** 
  
  **pairijasāi**  
  **walk-around.SUBJ.1SG**

“with the footsteps, which (are) famous (as those) of Iža, I shall walk around you.”
(Y. 50.8; OAv, Stage 1)

(16) \( \text{tāįs} \ [\text{rc \ yāįs} \ \text{vahištāįs}_i]_i \) 
  
  **DEM.INS.PL**  
  **deed.INS.PL**  
  **REL.INS.PL**  
  **best.INS.PL**

“with the best (of) deeds.” (Y.35.4; OAv, Stage 2)

2.3 Young Avestan

Meyer (2015) also showed that examples of all stages can be found in Young Avestan:

(17) \( \text{miȗr̥m}_i \ [\text{rc \ yō} \ \text{noiȕ} \ \text{kaṁmāi} \ \text{aiš.i.draoxō̄}_i]_i \) 
  
  **Mithra.ACC**  
  **REL.NOM.SG**  
  **NEG INDEF.DAT.SG**  
  **PV.to.be.deceived.NOM.SG**

“Mithra..., who (is) not to be deceived by anyone.” (Yt. 10.17; YAv, Stage 1)

(18) \( \text{miȗr̥m}_i \ [\text{rc \ yim} \ \text{vouro.gaoiāotim}_i]_i \) 
  
  **Mithra.ACC.SG**  
  **REL.ACC.SG**  
  **wide-pastured.ACC.SG**

“Mithra with wide pastures.” (Yt. 10.1; YAv, Stage 2)

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6Translation from Jamison's Rigveda translation commentary (2024-1-6)
2.4 Old Persian

Meyer (2015) also showed that examples of all stages can be found in Old Persian:

(20) adam... amiy
1SG.NOM Smerdis.NOM.SG COP.PRES.1SG
puça
son.NOM.SG

“I am Smerdis, the son of Cyrus, brother of Cambyses.” (DB 1.39; OP, Stage 1)

(21) adām... avam
1SG.NOM
Gaumātām;
DEM.ACC.SG
Gaumata.ACC.SG
avājanam;
slay.PAST.1SG

“I... slew that Gaumata, the Magian.” (DB 1.56–7; OP, Stage 2)

(22) ustacanām;
staircase.ACC.SG

“This stone staircase.” (A²Sc 5-6; OP, Stage 3)

3 Analysis

The modern Romance and German type of relative clause differs from the Vedic and Hittite type in two senses: 1. sentential embedding, 2. raised-headedness.

The only candidate for embedding in Old Indo-European languages is appositive nominal relative clause, namely izafe Stage 1 (cf. Qu 2023). But izafe Stage 1 can only provide sentential embedding, not raised-headedness, since the head can be in any case but the relative pronoun is always nominative.

(23) tám... Índram;
DEM.ACC.SG
pt
praise.1SG
Indra.ACC.SG
know.MP.NOM.

“This I will praise him - Indra, as he is known (RV 7.21.2a)

This explains why Vedic embeddings are always izafe Stage 1.

If a language has izafe stage II, which are embedded verbless relative clauses whose head nouns’ cases match with the relative clause, but it does not have raised headed (cor)relative clauses, then it is difficult to insert a verb into the izafe stage 2 configuration, since [head rel-pn ... V] is not a structure for relative clause anywhere in the sentence.

This explains why Avestan does not have verbed embedded relative clauses.
If a language, like Old Persian, has both the izafe stage II structures, which are *embedded* verbless relative clauses whose head nouns' cases match with the relative clause, and also the raised head (cor)relative clauses, which are non-embedded (mostly) *verbed* (cor)relative clauses whose head nouns precede the relative pronoun, then *embedded postnominal verbed relative clauses* can be developed through a combination the usage of these two aforementioned structures.

\[
\text{[RC kāra Pārsa utā Māda haya upā mām āha] is underlingly}
\]
\[
\text{[kāra Pārsa utā Māda], [RC haya [kāra Pārsa utā Māda], upā mām āha]}
\]

thus, an embedded structure like [Gaumātam] [tayam magum] can be reanalyzed as [Gaumātam; [tayam Gaumātam, magum]], which is an embedded relative clause.

This provides an explanation for the emergence of Old Persian embedded verbed relative clauses.

(24) iyam dāhyauš Pārsa, [RC taya adam dārayāmiy];
this.NOM.SG country.NOM.SG Persia.NOM REL.ACC.SG 1SG.NOM hold.PRES.1SG
\[
\text{[iz haya uvaspā umartiyā], manā baga}
\]
REL.NOM.SG good-horsed.NOM.SG good-manned.NOM.SG 1SG.GEN god.NOM.SG
vazraka Auramazdā frābara
great.NOM.SG Ahuramazda.NOM bestow.PAST.3SG

“This country Persia which I hold, which is possessed of good horses, of good men, upon me the Great God Ahuramazda bestowed (it).” (AmH 5-7)

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4 Future Work

This case study exemplifies how analogy can apply to a syntactic structure and offers a potential explanation for the emergence of embedded relative clauses in other Indo-European branches. Since embedded relative clauses are attested in other branches such as Greek and Latin:

(25) δαιμόνι’ oúk ἂν τίς τοι ἂνηρ, [RC δς
strange.man.VOC.SG NEG PT IND.NOM.SG 2SG.DAT man.NOM.SG REL.NOM.SG
ἐναίσιμος eτη]; |
right-minded.NOM.SG COP.PRES.OPT.3SG

ἐργον ἄτυχησε μάχης, ...
work.ACC.SG dishonor.AOR.OPT.3SG battle.GEN.SG

“Strange man, no one who is right-minded would make light of your work in battle.” (Z.521-2)
(26) Agedum istum, ostende [rc quem conscripsti]i 
    come.on that.ACC.SG show.PRES.IMP.2SG REL.ACC.SG compose.PERF.2SG syngraphum, contract.ACC.SG

    “Come on, show that contract which you wrote.” (Plautus As. 746)

The relationship between verbed relative clauses and izafe-like structures in these branches may show how embedded relative clauses developed in these branches, if embedded relative clauses were innovated in these branches.

References

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